JOURNAL OF EARLY CHILDHOOD ASSOCIATION OF NIGERIA (JECAN) VOLUME 15

JOURNAL OF

EARLY CHILDHOOD

ASSOCIATION OF NIGERIA

VOLUME 15 JUNE, 2026

JECAN

JOURNAL

OF

EARLY CHILDHOOD ASSOCIATION OF NIGERIA

VOLUME 15

ISSN: 2756 - 4800

JUNE, 2026

JOURNAL OF EARLY CHILDHOOD
ASSOCIATION OF NIGERIA (JECAN)
VOLUME 15
ISSN: 2756 - 4800

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EDITORIAL COMMENTS FOR 2026 ECAN JOURNAL

JECAN, an official Journal of the Early Childhood Association of Nigeria (ECAN), presents Volume 15 (2026). All the articles featured in this volume were presented at the 15th National Conference of the Association, held at Kwara State University, Molete, between July 7-11, 2025. Most of the articles revolved around the theme of the Conference, which was**: Transforming Early Childhood Education in Nigeria through Government-Led Initiatives, Technology Inclusion and Partnership**.

Article 1: The study considered that effective teaching in Nigeria requires teachers who can self-regulate themselves to solve problems independently. With this in mind, these researchers investigated self-regulation as a correlate of problem-solving skills of pre-service teachers in Kwara State. The study employed a correlational research design. The multistage sampling method was used to select 432 pre-service teachers from the University of Ilorin and Kwara State University, Malete. Data was collected using adapted scales: The Self-Regulation Skill Questionnaire (SRQ) and the Problem-Solving Questionnaire (PSQ). Face and content validity were established by experts in early childhood and primary education studies. SRQ yielded a reliability index of 0.76, and the reliability index of PSQ was 0.77 using Cronbach's alpha. Findings revealed that the majority of pre-service teachers exhibited a moderate level of self-regulation and problem-solving skills, and there was a significant positive relationship between self-regulation and problem-solving skills. They concluded that self-regulation is significantly linked to problem-solving ability in pre-service teachers. It was recommended that teacher training programmes in Kwara State should explicitly integrate self-regulation strategy instruction into their curriculum to enhance pre-service teachers' problem-solving competencies.

Article 2: This study examined the effect of the Montessori-based method on the literacy skill acquisition of young children. The study was conducted in two Public Schools in Obafemi-Owode Local Government Area of Ogun State, Nigeria. The respondents comprise 40 children in a lower basic primary school. This study adopted a pre-test and post-test non-equivalent quasi-experimental research design. Data were collected using the Literacy Skill Test. The data collected were analysed using descriptive statistics, while inferential statistics of analysis of covariance were used to answer the research hypothesis. The results indicated that pupils recorded an improvement in phonological awareness and reading with the use of the Montessori-based method. This study recommended that educators should embrace the Montessori-based method and receive appropriate Montessori training to help young children develop appropriate literacy skills.

Article 3: These researchers assessed the perceived impact of Montessori language materials on the language achievement of children with speech difficulties in selected special schools in Lagos State. Two research questions guided the study. A descriptive survey research design was employed for this study. A sample of two hundred teachers was selected using a purposive sampling technique. A self-designed instrument titled: "Questionnaire on the Impact of Montessori Language Materials on the Language Achievement of Children with Speech Difficulties (QMLMLACSD)" was used to collect data for the study. Thereafter, they were analysed using descriptive and inferential statistics. The result showed that the teachers' perception of the impact of using Montessori Language Materials in improving the language achievement of children with speech difficulties in selected special needs schools in Lagos State was positive, and the extent to which teachers used Montessori Language Materials in teaching children with speech difficulties in selected special needs schools in Lagos State was low. The researchers recommended that school administrators should be encouraged for continuous professional development programs focused on the Montessori method for language instruction. Regular workshops and training sessions on using Montessori Language Materials effectively should be organised to ensure teachers are equipped with the skills and confidence needed to implement these tools.

Article 4: This study explores the impact of Jolly Phonics, a multisensory phonics approach, on reading development in early years (ages 3-5) among vulnerable children, particularly those from disadvantaged backgrounds who face significant barriers often in accessing quality education in Nigeria. A pre-test post-test experimental research design was adopted for the study. The sample consisted of 268 nursery pupils from five schools selected from the three senatorial districts of Akwa Ibom State,while the two intact classes in each school were selected to form the experimental and control groups. The data collected were analysed using

means, independent t-test, analysis of covariance (ANCOVA) and the Burt test. The result reveals that Jolly Phonics was effective in enhancing the pupils' reading skills and phonetic awareness among vulnerable children. Based on the findings of the study, the researchers recommended the need to provide training for more educators and community workers to reach more vulnerable children.

Article 5: This study investigated teachers' perceived influence of collaborative learning strategies on early childhood learners' cognitive skills in Mushin Local Government Area, Lagos State, knowing that collaborative learning, characterised by peer interaction and group-based activities, is increasingly recognised as an effective pedagogical strategy for fostering multiple aspects of child development. A descriptive research design was employed, and data were collected from 100 teachers (50 public, 50 private) using a researcher-developed instrument, the Teachers' Perception of Collaborative Learning Strategy Questionnaire (TPCLSQ). Data were analysed using descriptive statistics (frequency counts, percentages, mean, and standard deviation) and inferential statistics (independent t-test). Findings revealed a significant difference in the implementation of collaborative learning strategies based on school type. The study recommended that collaborative learning be promoted in schools through training programs and supportive environments. This would encourage teachers to consistently apply the strategy in the classroom, and parents should actively support collaborative activities both at home and in school.

Article 6: This study investigated pre-service primary school teachers' perceived need for resource person partnerships in activity-based instructional materials production at the University of Ilorin because instructional materials are vital to effective classroom instruction for pre-service primary school teachers to avoid limiting instructional effectiveness. The researchers employed a descriptive survey research design and sampled 275 pre-service primary school student teachers from a population of approximately 510 using a stratified convenience sampling technique. Data were collected using the researcher-designed 'Pre-Service Primary Teachers' Resource Partnership Questionnaire (PSPTRPQ). The collected data were analysed using descriptive statistics, specifically mean and standard deviation, to answer the research questions. The findings revealed that pre-service primary school teachers perceived the need for inclusion of resource persons in activity-based instructional material production as necessary. It was recommended that teacher education institutions and relevant stakeholders should formally integrate resource person partnerships into the teacher education curriculum to enhance the professional skills and pedagogical knowledge of pre-service teachers.

Article 7:This paper advocates for the central role of play-based learning in early childhood education, especially within rural areas of Nigeria. Using Oke-Ogun in Oyo State as a focal point, the paper examines how limited resources, infrastructural challenges, and socio-cultural factors impact learning outcomes. Drawing on the developmental theories of Jean Piaget and Lev Vygotsky, alongside successful global practices in resource-poor settings, this paper presents play not as a frivolous activity but as a critical strategy for fostering cognitive, emotional, social, and language development in young children. This paper presents compelling evidence from teacher-led innovations and community-driven efforts that demonstrate how play-based learning can succeed even in resource-poor environments. Recommendations include integrating play into the curriculum, investing in teacher training, and launching community sensitisation campaigns by policymakers, educators, and stakeholders to recognise play as the foundation for early childhood education.

Article 8: This position paper examines the paradox between rural parents' strong motivation to enrol their children in school and the systemic challenges that undermine these aspirations. Drawing on human capital theory, ecological systems theory, the capability approach, social reproduction theory, and feminist theory, the paper analysed both the motivating factors, such as economic aspirations, social prestige, cultural expectations, and gender empowerment and the barriers, including poverty, inadequate infrastructure, limited teacher availability, cultural constraints, and weak governance. The discussion highlights that overcoming these challenges requires more than parental motivation; it calls for systemic reforms and equity-focused interventions. The implications emphasize the need for multidimensional strategies that combine financial incentives, strengthened home–school–community linkages, culturally relevant pedagogy, inclusive environments, and gender-responsive policies. By aligning parental aspirations with supportive policies and removing structural barriers, rural children can be provided with equitable opportunities to access quality ECE.

Article 9: This study undertook a bold examination of the challenges educators encounter in adopting inclusive

education practices within the Oyo East Local Government Area of Oyo State. Employing a descriptive research design, the research involved a varied sample of 200 teachers from nursery and primary schools throughout the region. The investigation utilised a specially developed tool, titled: "Teachers' Perceived Barriers to Inclusive Education in Early Childhood Education," focusing on a key research question and formulating three hypotheses, all evaluated at a significance level of 0.05. The collected data were analysed through various statistical methods, including mean and standard deviation calculations, t-tests, and ANOVA. The research reveals variations in how teachers perceive the obstacles to inclusive education, particularly influenced by gender. Additionally, it highlights a significant correlation between these perceived challenges and the number of years of teaching experience. The paper recommended fostering collaboration among teachers, parents, special educators, and other stakeholders to collectively address barriers to inclusive education. It emphasises the need for regular workshops and seminars to manage diverse learning needs effectively

Article 10: This study highlights the strategic importance of Early Childhood Education ECE, linking access to improved long-term outcomes such as literacy, school readiness, and reduced grade repetition. According to the researchers, urban areas tend to have better ECE implementation compared to rural regions. They emphasised that the significance of early learning windows and critical periods of brain development with educational input have the greatest impact. Utilising these windows effectively helped children succeed in school and decreased dropout rates. The study advocates for increased investment and community-based approaches to expand and improve ECE across Nigeria, ensuring equitable and sustainable progress in the education sector.

Professor F. Taiwo Ogunyemi
Editor-in-Chief

Content

Transforming Early Childhood Education in Nigeria Through Government-led Initiatives, Technology Inclusion and Partnership: Vision For The Future
OGUNYEMI, F. Taiwo 1

Self-regulation as a Correlate of Problem-solving Skills of Pre-service Teachers in Tertiary Institutions in Kwara State
QUDUS, Asmau Bolanle, ISA,Salamat Bolanle, ABDULWAHAB, Rafiu Ph.D SULAIMON, Jamiu Temitope & SEUN, Adewara Oluwasegun 10

Effect of Montessori-based Method on Literacy Skills Acquisition of Young Children in Public Primary Schools in Obafemi Owode Local Government
OSUNSANYA,Mariam Titilope 18

Perceived Impact Of Montessori Language Materials On Language Achievement Of Children With Speech Difficulties In Some Selected Special Schools In Lagos State
ALOZIEUWA, Ijeoma Stephanie & **OMOTUYOLE**, Christy Owolemi Prof. 26

Upporting Vulnerable Children Through Jolly Phonics And Reading Development In Early Years
ANDY, NsikakAbasiEnefiok, **SAM**, Isaac Johnson &**BLESSING,** Uwot Peter 35

Teachers Perceived Influence Of Collaborative Learning Strategies Onpreschoolers' Cognitive Skills In Mushinlocalgovernment, Lagos State
BADMOS, Asiat Olusola & **AKANNI**, Dolapo Eunice 47

Pre-service Primary School Teachers' Perceived Need For Resource Person Partnership In Activity-based Instructional Materials Production In University Of Ilorin, Nigeria
OLA-ALANI, Eniola K. Ph.D **, ODEBODE,** Idowu Oluwabamise, **MURITALA,** Rilwan Atanda & **OJIBARA,** Rahmatallahi, T. 57

Prioritising Play-based Learning Of Early Childhood Education In Oke Ogun Rural Area, Oyo State
OYEDEJI, ToyinPh.D & **AWOTUBO-OLOOWOKERE,**Folake 67

Barriers To Accessing Early Childhood Education In Rural Communities: A Theoretical Perspective
QUDUS, Asmau Bolanle, **ABDULKAREEM**, Habibat Bolanle, **HAMMED,** Lukman Ajanaku **& GAFARU,** Salaudeen 76

Teachers' Perception Of Barriers To Inclusive Education In Early Childhood Education In Oyo East Local Government, Oyo State
ADEDIGBA, Olabisi Ph.D & **ADEYANJ,**Mayowa Samuel 89

Early Childhood Education: A Veritable Tool For Sustainable Educational Advancement In Nigeria
OGBECHE,Patrick Ogbeche & **QUDUS**, AsmauBolanlePh.D 98

Generation Z Mother's Knowledge, Attitude And Practice On Exclusive Breastfeeding
OYUNDOYIN, Bolanle Misitura, **MARTINS**, Chisom Isabella & **AKINYELE**,Osemeiasoh Anthonia 104

Accessibility And Utilisation Of Assistive Technology Among Public Primary School Teachers In Educational District Ii, Lagos State
SOPEKAN,Oludola Sarah, Ph. D & **AJAYI,**Oluwatosin Motunrayo 116

Artificial Intelligent (ai) Assisted Instructional Learning Tools For Pre-schoolers In Enhancing Numeracy And Literacy Skills In Adeyemi Federal University Of Education Early Childhood Education Center
POPOOLA, Temilola Janet, **AKINROTIMI**, AdenikeAdeola, **UDO**, Ijeoma Evelyn & **OLUWAFEMI**, Jesutofunmi Joy 130

Investigating Government Collaboration With The Caregivers In Early Childhood Education Settings In Ondo State
IKUENOMORE,Mosunmola Grace Ph.D, **OLUWAFEMI,**JesutofunmiJoy & **OGUNLAJA**,AyokunnumiEmilola 136

Exploring The Impact Of Gesture-based Phonics Instruction On Early Literacy Skills In Early Childhood Education Classrooms
ABUSOMWAN, Titilayo M., **ANOMA,**Sylvester Ugochukwu 142

Exploring The Impact Of Parent-teacher Partnership On Children's Socio-emotional Development Among Primary Schools In Lagos State
ODEBOWALE, Ireti TinaPh.D, **OLAIYA,** Lukman Olamide**, FUWA,** Elizabeth Anuoluwapo**, DELPHONSO,** Esther Tunmise**,** & **SHAFAU,** Suliat Abimbola 151

Microsoft Word As A Tool For Improving Writing Skills Of Pupils In Ikwerre Local Government Area Of Rivers State
ANYA, UlunmaUkamakaPh.D **& IRIMOREN,** Tina Ph.D 159

Investigating The Perception Of Teachers On The Use Of Eko Excel For Pupils In Early Childhood Education Centres
AINA,Omobolanle Oyenike Ph.D**, IFEGBUYI**,WasilatOlohunnike, **OGUNTADE,**Paul Olusegun Ph.D & **AKOMOLEDE,**Olabisi Titilayo 167

Parent-community-school Partnership: A Key to Unlocking Early Childhood Education Success in Lagos State
ALAKPA, Dilys Uruemu, **AKIDI,** Emmanuel Ugochukwu, **EJEH** Rachel Okah, **IFEANYI**, Blessing Ozavize **IDIOHA,** Lilian, Chinenye 176

Culturally Responsive Teaching in the Lower Primary Classes of Nigeria
NJOKU, Akwaugo Chinonye & **Prof. ANERO** Nnamdi 185

Impact Of Technology And Artificial Intelligence Among Primary School Pupils In Lagos State
OYEDAPO Philip IbukunPh.D, **ENIOLA-EGBOWON**, Oluwatomi Funmilayo, **ABAIDE**Ibukunola Aina, **DUROTIMI** Sisan Salimtu & **OYEBAYO**, Esther Mojola **EBOIGBE**, Ebatamehi Stephen 193

Early Childhood Education in Rural Areas: Unique, Challenges and Possible Solutions
CLEMENT-OLOWU, Adewunmi Praise**, OGIRRI,** OmamedeJennifer **DANIJU-JEGEDE,** SuwebatOpemiolopin**, OKIKE** Blessing Nwani **& MURITALA-OLANIYAN,** FatimohOluwadamilola 201

The Role Of Social Capital And Community Participation In Scaling Up Early Childhood Development And Education In Lagos State
FOWOWE, S. S., **DANIJU-JEGEDE,** S. O. & **EDEM**P. N. 208

Transforming Early Childhood Education Through Integration Of Security Education
SORETIRE,Olufunmilayo O. Ph.D & **SANYA**,Adebola F. 218

The Contributions of Science Process Skills on Waste-to-wealth Skill Acqusition of Primary School Pupils in Oyo Town
ADEFABI,Monsurat Sade & **EKINE**, Adefunke O.Prof. 224

Examining The Role of Storytelling in Language Development Among Preschoolers in Lagos State
AKINREMI, Abosede Esther**, OMOYAYI,** Deborah Anuoluwapo, **OJOLOWO,** Aishat Morokoke, **NZEH,** Adanna Catherine**, OKPAJIEAGU,** Uche & **ADELANWA**, Aminat Abiodun 232

Influence of Digital Tools Devices and Interactive Media in Facilitating Learning Among Preschool Children in Lagos State
CHUKWUDI, Miracle Chidinma**, OKOLI,** Nkem Maureen**, IPINLAYE,** Temidayo. Joseph**, JOHNSON,** Oluwayemisi Oluwamayowa **& FEJOKU,** Ekene Philomena 241

Inclusion of Cognitive Enhancement Basic Sewing Activities in Pupils Teachers Perception and Engagement
BUSARI, Medinat Folashade**, MELEKEOWEI** Modupe OmolayoPh.D **& ERUOBODO** Modupe Oluwabukola 250

Combating The Challenges of Rural Illiteracy in Nigeria Through Adoption of Early Childhood Education Policy
ANIMASHAUN,OdunolaElizabeth, **OMOTUNDE**, Olubunmi Elizabeth & **BUSARI**, Medinat Folashade 260

Establishment of Early Childhood Education Commission: A Panacea To Functional Education in Nigeria
AMADI, FestuOnyemauchePh.D, **ADAKU**, Ikechi Princess & **ANERO**, Nnamdi Prof. 267

Empowering Early Childhood Teachers in Nigeria Through Government-supported Ai Training And Digital Literacy Initiatives
OLOFINNIKA, Adedayo Albert, Ph.D & **OLOWE,**Peter KayodePh.D 273

Enhancing Sustainable Development Through Effective Childhood Education Assessment and Evaluation in Pankshin Local Government Area of Plateau State
MUSA-RIKE,Juliana**Ph.D & KATNIYON,**Grace Techi 281

Impact of Digital Literacy on the Early Literacy Development of Nursery One in Asa Local Government Area of Kwara State, Nigeria
IBRAHIM,Hadi Gidado & **OLANREWAJU,**Olatunde Hamzat 290

Strategies For Enhancing Language Literacy In Early Childhood Education
OWASEYE, Joycelyn Funke, Ph.D., **OLONINISI**, Omowumi Omotayo, **SHAIBU**, Ibrahim Ibori & **YUSUF** Raliat 299

Perceived Influence of Teachers' Professionalism on Pupils' Academic Achievement in Moro Local Government Area of Kwara State
KOLAWOLE, Segun**, BAMIDELE,** Ifelayo Esther**, AGBANA**, Oluwafemi David**, OGUNDELE,** Helen Feyisayo 307

Implementation Of Early Childhood Education Policies: Examining The Shortage Of Trained Teachers In Public Schools In Kwara State
RAHEEM, Akeem Opeyemi, **ADEDEJI**,Grace Bola, **AROWOREYIN**, Yusuff Abdul Rasaq & **GAFARU**, Salaudeen 316

Vulnerability and Early Childhood Education in Challenging Circumstances in Lagos State
ADEYEMI, Mutalib Oladele**, OSAYANDE,** Victor Efe, **JACKRICH,**Ilamina Rachel & **OKE,** Abidemi Celia Ph.D 326

Evaluating The Impact of Multi-sector Collaborations on Primary School Teachers' Stem Pedagogical Competence in Lagos State, Nigeria
AKIODE, Abimbola OluwatoyinPh.D 334

An Assessment of Literacy Skills Acquisition Among Preschoolers in Selected Public Primary Schools in Lagos State
MAFIKUYOMI, Johnson AdewolePh.D, **UDOFIA**, ImohGodwin Richard & **GBENGA-AKANMU**, Taiwo OladunniPh.D 342

Influence of Parental Factors on Exclusive Breastfeeding in Badagry Local Government Area of Lagos State
NA-ALLAH, Ramat Teniola & **YUSUF,** Fatima 349

TRANSFORMING EARLY CHILDHOOD EDUCATION IN NIGERIA THROUGH GOVERNMENT-LED INITIATIVES, TECHNOLOGY INCLUSION AND PARTNERSHIP: VISION FOR THE FUTURE

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(BeingLead paper presented at 16th National Conference of the Early Childhood Education Association of Nigeria, Kwara State University, Malete Kwara State, 7th-11th July, 2025)

Introduction

The early years are the most crucial in the life of a child. It is therefore imperative that in achieving all the goals of early childhood education programmes, the joint responsibility of all is highly required. All stakeholders, such as the government (local, state and federal levels), Educational institutions, families, communities and NGOs, must ensure that adequate provisions are made, policies and activitiesinitiatedthrough technology, inclusion and partnership for positive transformation of education at that level for the overall development of the child that could be sustained for the future.

Early childhood education had been described as the informal and formal learning experiences acquired by children from birth to the age of eight, with a focus on their cognitive, emotional, physical and social development. The foundation should then be well laid because this period is characterised by remarkable growth through which children learn major skills and concepts that prepare them for later years.

A cursory look at this level of education indicates that it will not only support the holistic development of children but also provide a strong basis for lifelong learning. It is an essential building block of a child's future success.

The transformation of Early Childhood Education (ECE) in Nigeria is moving to ensure the nation's future, encompassing a period from birth to eight years, universally acknowledged as the most pivotal stage of human development. During these foundational years, children rapidly acquire the cognitive, social, emotional, and physical skills that underpin lifelong learning, overall well-being, and future productivity (UNICEF, 2019). This profound impact of ECE is widely recognised in international conventions and frameworks, solidifying its position as a global imperative. The Convention on the Rights of the Child (CRC) from 1989, which was a cornerstone of this recognition adopted by the United Nations General Assembly, explicitly enshrines the right of every child to education, and while not solely focused on ECE, its principles implicitly support access to quality early learning environments as fundamental to a child's holistic development and future opportunities (United Nations, 1989). This convention serves as a guiding document for nations worldwide, urging them to prioritise the well-being and developmental needs of their youngest citizens. Furthermore, ECE is central to the Sustainable Development Goals (SDGs), specifically SDG 4.2, which calls for all girls and boys to have access to quality early childhood development, care, and pre-primary education, emphasising that achieving educational equity and poverty reduction is inextricably linked to robust ECE. This target is not merely an educational aspiration but a cross-cutting goal that impacts health, nutrition, and poverty eradication.

Investing in Early Childhood Education (ECE) is consistently proven to be a high-return economic strategy, far surpassing a simple social expenditure.

The early years are a period of rapid brain development, where neural connections are formed at an unparalleled rate, making quality early learning experiences critically important for cognitive and emotional wiring (Centre on the Developing Child at Harvard University, 2023; Lurie Children's, 2023).

In the Nigerian context, the nation's large and rapidly expanding youth population presents immense potential and an urgent need for robust ECE. With a significant percentage of its population under the age of five, quality

early learning is indispensable for human capital development, economic diversification, and social stability. The Nigerian government has indeed acknowledged this through policies such as the National Policy on Education (NPE), which integrates pre-primary education for children aged 3-5 years as a critical component of the education system (Federal Republic of Nigeria, 2013). This policy outlines specific objectives for pre-primary education, including preparing children for primary school, fostering creativity, and inculcating social values. Similarly, the National Early Childhood Care and Development (ECCD) Policy and Guidelines, adopted in 2007, demonstrate a commitment to a multi-sectoral approach involving education, health, nutrition, and child protection, recognising ECE's foundational role for national development (Federal Ministry of Education, 2007). This policy aims for integrated service delivery, acknowledging that a child's development cannot be compartmentalised.

However, despite these policy pronouncements and the evident need, significant challenges persist, hindering quality ECE provision across the country. Overall pre-primary enrolment rates remain distressingly low, often below 50% (UNICEF, 2021), indicating that a large proportion of Nigerian children are missing out on these crucial early learning experiences. There are stark disparities between urban and rural areas, with urban centres typically having more access to ECE facilities, leaving rural communities underserved and their children disadvantaged from the outset. Quality concerns are rampant due to inadequate teacher qualifications or a complete lack of specialised ECE training for many pre-primary educators (UNICEF, 2019). This often leads to didactic, rote-learning approaches that are inappropriate for young children, stifling their natural curiosity and development of critical thinking skills. Learning environments frequently lack adequate infrastructure, age-appropriate materials, and conducive settings that promote active, play-based learning (World Bank, 2023). Many existing facilities are overcrowded, unsafe, or simply not designed with the needs of young children in mind. Furthermore, ECE is significantly underfunded, with insufficient budgetary allocation from all tiers of government. This chronic underfunding often forces private providers to operate on shoestring budgets, compromising quality, and leading to an over-reliance on inconsistent external donor aid (UNICEF, 2021), making long-term planning difficult. Policy implementation is fragmented across states and providers, a consequence of weak unified regulatory frameworks, insufficient oversight, and limited institutional capacity, resulting in wide variations in quality and accessibility across the nation. These, therefore, call for total overhauling of this level of education. Thus, the focus of this presentation is to examine how early childhood education can be transformed through government-led initiatives, technology inclusion and partnership to achieve a better vision for the future.

Opportunities for Transformation and Strategic Imperatives:

Despite these aforementioned hurdles, Nigeria possesses considerable opportunities for transforming its ECE landscape. There is a growing awareness among parents, policymakers, and communities regarding the critical importance of early learning (Ololade Elizabeth Adewusi, Nancy Mohd Al Hamad, Ife Jesuseun Adeleke, Udochukwu Chidiebere Nwankwo, Godson Chinenye Nwokocha, 2024; Open Journals Nigeria, 2024). This increasing understanding, fuelled by advocacy efforts and evidence of ECE's benefits, can drive greater demand and support for policy changes and increased investment. Nigeria's flourishing technology sector offers unique opportunities for "vaulting" traditional barriers to access and quality. The widespread penetration of mobile phones and internet connectivity, even in remote areas, creates avenues for leveraging digital learning platforms, educational applications, and remote teacher training programs to reach a wider audience and enhance learning experiences (Ghavifekr & Rosdy, 2015; Afzal, *et. al.*, Saima & Daud, Sana & Ahmed, Zahoor & Butt, Ayesha. 2023; Rafiq, *et. al.*, Saleem & Afzal, Dr. 2023). Moreover, a vibrant civil society, comprising numerous Non-Governmental Organisations (NGOs) and Community-Based Organisations (CBOs) deeply rooted in communities, can serve as powerful partners in expanding access, improving quality, and advocating for policy changes. These organisations often have the local knowledge and community trust necessary for effective implementation at the grassroots level, as evidenced by the work of groups like the Nigeria Network of NGOs (NNNGO, 2023 Annual Report) and the Early Childhood Association of Nigeria (ECAN, 2024).

Investing in Early Childhood Education (ECE) is a vital strategic imperative for Nigeria's long-term development. Quality ECE significantly improves learning outcomes by boosting cognitive and socio-

emotional development, leading to better academic performance and reduced dropout rates in primary and secondary schooling. Nigerian studies confirm that ECE exposure enhances academic and socio-emotional skills in primary pupils (Amadi *et al*., 2024;IIARD IJEE, 2018; JECAPE, 2025). The economic returns on ECE investment are substantial, with studies showing a $7 to $17 return for every dollar invested, primarily through increased adult productivity and higher earning potential (Heckman, 2013; Karoly, 2016). ECE also serves as a powerful tool for social equity and poverty reduction, narrowing achievement gaps for disadvantaged children and empowering women by enabling mothers to participate in the workforce (OECD, 2025).

To achieve this comprehensive transformation, a synergistic and integrated approach is essential and must be built upon four interconnected pillars: robust government leadership, innovative technological integration, unwavering commitment to inclusion, and dynamic multi-stakeholder partnerships (UNICEF, 2021). Each of the pillars is crucial on its own, but their combined strength is what will truly drive systemic change and ensure sustainability.

1. Robust Government Leadership: The Bedrock of Transformation

Government leadership is paramount for establishing a robust, coherent, and equitable ECE system across Nigeria. While existing policies like the NPE and ECCD Policy provide a valuable foundation, they often lack the detailed operational guidelines, implementation frameworks, and consistent enforcement mechanisms necessary for effective nationwide roll-out. There is an urgent need for stronger legal frameworks that clearly define responsibilities across all government tiers, federal, state, and local and set non-negotiable minimum standards for all ECE providers, whether public, private, or community-based. This necessitates the enactment of specific laws, the development of robust regulations with effective enforcement mechanisms, and the establishment of comprehensive monitoring and evaluation frameworks to track progress and ensure accountability. A national system of standardised quality assurance and accreditation processes for all ECE centres is crucial to ensure consistent adherence to benchmarks for safety, hygiene, curriculum delivery, teacher qualifications, and child-to-teacher ratios (UNICEF, 2019). This standardisation will empower parents to make informed choices and elevate the overall quality of ECE services.

A significant and sustained increase in budgetary allocation to ECE at all government levels is non-negotiable, recognising ECE as a high-return investment rather than a mere social welfare program (Heckman, 2013). Innovative financing models, such as dedicated ECE funds (e.g., through specific levies on certain goods or services, or earmarking a portion of natural resource revenues), and tax incentives for private sector investment in ECE infrastructure and teacher training, should be explored to diversify funding sources and ensure sustainability. Crucially, increased funding must be accompanied by transparent mechanisms for equitable distribution, prioritising underserved regions, rural communities, and vulnerable children who often lack access to quality ECE services. Rigorous audits and oversight mechanisms will be essential to ensure that funds reach their intended beneficiaries and are utilised effectively.

The quality of ECE is directly proportional to the quality of its educators. Therefore, comprehensive pre-service training programs, rigorously grounded in child development theories, early learning principles, and play-based pedagogy, are urgently needed for aspiring ECE teachers. These programs should move beyond theoretical knowledge to include extensive practical experience in diverse ECE settings. Equally vital is robust in-service training for existing teachers to upgrade their skills and facilitate a paradigm shift from traditional didactic methods to child-centred, play-based learning approaches. Training must emphasise practical strategies for facilitating active play, exploration, inquiry-based learning, and seamlessly integrating early literacy and numeracy into engaging, age-appropriate activities. Continuous Professional Development (CPD) through regular workshops, accessible online courses, mentorship programs, and peer learning networks is essential to ensure ongoing skill development and adaptation to new research and best practices. Establishing clear career progression pathways with appropriate incentives is also crucial to attract and retain talented individuals in the ECE teaching profession, ensuring a stable and high-quality workforce.

2. Curriculum Development and Implementation: The Backbone of Effective ECE

A well-designed, dynamic, and contextually relevant curriculum forms the fundamental backbone of effective ECE, guiding both teaching practices and learning outcomes. Nigeria needs a national curriculum that is not

static but dynamic and regularly updated to reflect the latest research in early childhood development, evolving societal needs, and global best practices in pedagogy. Critically, this curriculum must be culturally relevant, incorporating Nigeria's rich tapestry of diverse languages, folklore, traditional values, indigenous knowledge systems, and social contexts. This ensures children see themselves reflected in learning materials and activities, making learning more meaningful, engaging, and effective, while simultaneously reinforcing their cultural identity and pride (Enemali & Jacob, 2024).

The curriculum must also be rigorously developmentally appropriate, aligning learning experiences with the cognitive, social, emotional, and physical stages of young children. This means moving away from a primary-school readiness curriculum that often focuses solely on rote learning and academic drills, towards one that fosters holistic growth through active engagement, exploration, and experiential learning. The benefits of such an approach for cognitive, social, and emotional growth, improved academic achievement, and enhanced creativity are well-documented (National Association for the Education of Young Children (NAEYC) in their 2020 position statement on developmentally appropriate practice, and in broader discussions on holistic child development as also identified by the Centre on the Developing Child at Harvard University in their ongoing publications).

The curriculum should seamlessly integrate foundational skills such as early literacy and numeracy within a play-based framework. For early literacy, this includes developing phonological awareness, fostering a love for storytelling and books, and encouraging emergent reading and writing through playful activities. For numeracy, it involves introducing concepts of quantity, shape, patterns, and problem-solving through hands-on activities and games. Equally important is the robust integration of socio-emotional learning, which includes fostering emotional regulation, empathy, social skills, and conflict resolution. These skills are critical for successful peer interactions and overall well-being. Early exposure to STEM (Science, Technology, Engineering, and Mathematics) concepts through playful, hands-on, and exploratory activities, such as building blocks, simple experiments, and nature exploration, is also vital to nurturing curiosity, critical thinking, and problem-solving abilities from a young age. This holistic approach prepares children not only for academic success in primary school but also for navigating broader life challenges and becoming innovative members of society (Muema *et al*., 2018; Hamline University, 2025).

3. Innovative Technological Integration: Bridging Gaps and Enhancing Learning

Technology presents an immense opportunity to transform Early Childhood Education (ECE) in Nigeria by overcoming infrastructure and geographical barriers. This involves developing and deploying engaging, age-appropriate, and culturally relevant digital learning resources for children, such as interactive apps, e-books, and multimedia content featuring Nigerian characters, languages, and traditional stories. Beyond direct learning, technology can significantly enhance teacher support and capacity building through online platforms for training, virtual professional learning communities, and digital teaching aids like interactive whiteboards. This approach improves instructional quality, especially for educators in remote areas, drawing parallels to successful technology integration for teacher development and remote learning in the education sector in many African countries (Mushimiyimana *et al*., 2025).

Robust Management Information Systems (MIS) are crucial for evidence-based policy planning in ECE, enabling the collection and analysis of data on enrollment, attendance, teacher qualifications, and child assessments. This real-time data informs policy, guides resource allocation, and allows for agile adjustments to improve the ECE system (FHI 360, 2012; World Bank, 2020).

Crucially, addressing the digital divide is essential to ensure technology promotes equality. Strategies for equitable access, particularly in rural and low-income areas, include establishing community learning hubs with shared devices and internet access, deploying solar-powered devices in off-grid communities, and implementing government policies for affordable internet and device subsidies (ICTworks, 2023;Akwane, 2024; Kingdom of Kush, 2024). Furthermore, digital literacy training for both ECE teachers and parents is vital. Teachers need skills to integrate technology into pedagogy (GIZ, 2025; UNICEF, 2024), while parents require understanding to support home learning, a key factor in children's digital literacy and language development (Ogegbo, 2020; Injini, 2024).

4. Fostering Inclusion: Ensuring No Child is Left Behind

Transforming Early Childhood Education (ECE) in Nigeria is crucial for ensuring equitable access to quality early learning opportunities for all children, irrespective of their background. This requires strategic interventions to overcome existing socio-economic and geographical disparities. Key approaches include extending ECE services to underserved populations through innovative models such as mobile ECE units and flexible schedules for nomadic communities (National Commission for Nomadic Education, 2017). For Internally Displaced Persons (IDPs), establishing temporary, child-friendly centres with integrated psychological support is vital (EA Journals, 2022). Furthermore, deliberate outreach programs are essential for hard-to-reach rural areas, as quality ECE interventions can significantly improve learning outcomes and shift parental perceptions, particularly for girls (PubMed, 2018). These efforts align with broader recommendations for reducing inequalities through ECEC investment (OECD, 2025) and are supported by community engagement initiatives that enhance education access for vulnerable children (ECEWS, 2020; UNICEF Nigeria, 2022).

Enhancing accessibility and cultural relevance necessitates diverse and flexible ECE models. This includes promoting community-based centres, which have proven effective in boosting enrolment and quality learning (European Journal of Education and Pedagogy, 2022), and developing home-based care support programs where trained caregivers deliver early learning activities (Icarella Childcare Services Ltd., 2021; Entrepreneurs.ng, 2025). Integrating ECE components within existing community structures, such as health clinics or local markets, can also significantly increase reach by leveraging established networks, a strategy supported by "convergent programming" approaches seen in wider development efforts (UNICEF Nigeria Annual Report, 2023). Ultimately, a robust ECE transformation in Nigeria demands strong governmental commitment and collaborative efforts, recognising ECE as a foundational phase for future success (Businessday NG, 2025).

Furthermore, Cultural and linguistic responsiveness is critical for effective ECE in a diverse nation like Nigeria. This involves actively incorporating local languages, cultural narratives, traditional songs, games, and values into the ECE curriculum and pedagogical practices. This approach makes learning more relevant, engaging, and affirming for children, fostering a strong sense of identity and cultural pride. Advocating for mother-tongue instruction in the early years is crucial, as extensive research shows that children learn best in their home language, providing a solid cognitive and linguistic base for learning additional languages later (UNESCO, 2016). This strengthens cognitive development and facilitates a smoother transition to formal schooling. ECE must also actively promote gender equity from the earliest years. This involves ensuring equal access and opportunities for both boys and girls, particularly in regions where cultural norms might limit girls' participation. This can be achieved through targeted outreach campaigns, community sensitisation programs, and making ECE centres safe and welcoming for all children. ECE can also proactively challenge harmful gender stereotypes by promoting diverse play activities for all children (encouraging girls in STEM activities, and boys in nurturing roles), and by using gender-equitable language and materials in classrooms (UNICEF, 2019). This helps to shape more equitable attitudes and expectations from a young age.

5. Strategic Partnerships: A Collective Responsibility

Transforming Early Childhood Education (ECE) in Nigeria is a monumental task that demands collective responsibility through dynamic and strategic partnerships across various sectors. Public-Private Partnerships (PPPs) offer viable and innovative models for augmenting resources and expertise (Brookings Institution, 2017; UNICEF, 2018). This could include government contracting private ECE providers to operate in underserved areas, corporate funding of ECE facilities or teacher training programs as part of their Corporate Social Responsibility (CSR) initiatives, and non-governmental organisations (NGOs) providing specialised teacher training or implementing pilot ECE programs that can then be scaled up by the government (Oladejo & Agboola, 2024). Robust regulatory frameworks are crucial for all PPPs to ensure accountability, maintain consistent quality standards, prevent exploitation, and guarantee equitable access for all children. Clear contracts, rigorous monitoring mechanisms, and transparent avenues for redress are vital to the success and integrity of these partnerships (Federal Republic of Nigeria, 2004).

Community Engagement and Parental Involvement are paramount, as parents are a child's first and most influential educators, and their active participation significantly reinforces learning at home and promotes holistic development (Ogunyemi & Ojo, 2015). Therefore, initiatives for parental education on ECE benefits, effective parenting practices, and simple home-based learning activities are essential. This can be achieved through community workshops, parent support groups, and the widespread dissemination of accessible educational materials through various media, including local radio, community meetings, and mobile applications designed for parents. Empowering parents as active partners in their children's learning journey is key.

International Collaboration is Vital, with organisations like UNICEF, UNESCO, and the World Bank playing a crucial role in providing technical assistance, capacity building, and crucial financial support for large-scale ECE initiatives in Nigeria (UNICEF, 2021). These organisations bring global expertise in policy development, curriculum design, data collection, and program implementation. Learning from successful ECE models and best practices in other developing countries that have overcome similar challenges is invaluable. This allows Nigeria to adapt proven strategies, avoid reinventing the wheel, and implement more efficient and impactful interventions. Stronger collaboration between government, ECE practitioners, and universities/research institutions is also advocated for rigorous, context-specific research on ECE effectiveness within Nigeria. Research findings must actively inform policy formulation, curriculum development, and intervention design, ensuring that investments are data-driven and yield the best possible outcomes. Academia can also play a crucial role in evaluating existing programs, identifying areas for improvement, and contributing to the body of knowledge on effective ECE practices in the Nigerian context.

Vision for the Future: A Transformed ECE Ecosystem

The culmination of these concerted efforts through robust government initiatives, innovative technological integration, unwavering commitment to inclusion, and dynamic multi-stakeholder partnerships will result in a profoundly transformed ECE ecosystem in Nigeria, making quality ECE a tangible reality for every child. This future vision includes a holistic and integrated system where ECE is a seamlessly integrated and essential component of Nigeria's broader education and social development system. There will be clear policy coherence and robust coordination across all government levels, federal, state, and local, with genuine inter-ministerial collaboration among ministries responsible for education, health, women's affairs, and social development. This integration ensures a comprehensive approach to child well-being.

This transformed system will feature well-defined, smooth pathways for children's progression from early childhood programs to primary school, ensuring continuity in learning and development. This will be facilitated by aligned curricula, pedagogical approaches, and assessment methods between ECE centres and primary schools. Standardised information-sharing mechanisms between ECE centres and primary schools will allow primary school teachers to build upon children's prior learning and address individual needs effectively.

High-quality, accessible, and inclusive ECE will be a reality for every Nigerian child, irrespective of their socio-economic background, geographical location, or special needs/disabilities. Standardised quality benchmarks will be consistently met across all ECE centres, public, private, and community-based, upheld by rigorous quality assurance and accreditation processes. Classrooms will feature well-trained, highly motivated, and professional teachers who are experts in child-centred, play-based pedagogy. Learning environments will be stimulating, safe, hygienic, and equipped with a diverse range of age-appropriate, culturally relevant learning materials. Curricula will be dynamic, culturally relevant, and specifically designed to foster holistic development across all domains.

Ultimately, a transformed ECE system will equip Nigerian children with robust cognitive skills, including critical thinking, problem-solving abilities, early literacy, and numeracy. They will possess well-developed socio-emotional skills such as resilience, empathy, effective communication, self-regulation, and collaboration, crucial for navigating complex social environments. Their physical development will be strongly supported through active play and nutritious environments. In essence, Nigerian children will be curious, confident, adaptable, and well-prepared not only for academic success in primary school and beyond but also for active citizenship, contributing meaningfully to their communities, and facing future challenges with ingenuity and resourcefulness.

Conclusion

The comprehensive transformation of Early Childhood Education is critical for Nigeria's future. This monumental journey hinges on the synergistic application of strong government leadership, innovative technological integration, an unwavering commitment to inclusion, and dynamic multi-stakeholder partnerships. These pillars are not independent but intrinsically linked, forming a robust and resilient framework for systemic change that addresses the multifaceted challenges and harnesses the immense potential within Nigeria's ECE landscape (UNICEF, 2021). The urgency of this moment cannot be overstated. With one of the world's youngest and fastest-growing populations, the window of opportunity to lay a solid foundation for lifelong learning and well-being for millions of children is now. This calls for a collective, decisive, and sustained effort from all stakeholders. Government agencies, at federal, state, and local levels, must demonstrate unwavering political will and allocate commensurate resources. Civil society organisations and community leaders must champion advocacy and grassroots implementation. Private sector entities must view ECE as a strategic investment, contributing resources and innovation. International partners must continue to provide technical expertise and financial support, drawing on global best practices. Crucially, communities and families must actively engage as co-producers of their children's early learning and development. Inaction or fragmented approaches will only perpetuate existing disparities and carry high long-term costs for the nation's human capital development, economic diversification, and social stability (Heckman, 2013). The time for passive observation and incremental change is over; the time for decisive, collaborative action is now.

Recommendations

Strengthen Government Leadership and Funding: Implement stronger legal frameworks to define responsibilities across all government tiers (federal, state, and local) and establish non-negotiable minimum standards for all ECE providers. This should be coupled with a significant and sustained increase in budgetary allocation to ECE at all government levels, exploring innovative financing models like dedicated ECE funds and tax incentives for private sector investment. Rigorous audits and transparent mechanisms for equitable distribution, prioritising underserved regions, are crucial to ensure funds reach their intended beneficiaries and are utilised effectively.

Enhance Teacher Training and Professional Development: Urgently implement comprehensive pre-service training programs for aspiring ECE teachers, grounded in child development theories and play-based pedagogy, including extensive practical experience. Provide robust in-service training for existing teachers to upgrade their skills and shift to child-centred, play-based learning approaches. Establish Continuous Professional Development (CPD) through workshops, online courses, mentorship, and peer learning networks, along with clear career progression pathways and incentives to attract and retain talented individuals in the ECE teaching profession.

Develop a Dynamic and Culturally Relevant Curriculum: Create a national ECE curriculum that is dynamic, regularly updated, and culturally relevant, incorporating Nigeria's diverse languages, folklore, traditional values, and indigenous knowledge systems. The curriculum must be developmentally appropriate, fostering holistic growth through active engagement and experiential learning, rather than focusing solely on rote learning. It should seamlessly integrate foundational skills like early literacy and numeracy within a play-based framework, along with robust socio-emotional learning and early exposure to STEM concepts.

Leverage Innovative Technological Integration with Equity in Mind: Develop and deploy engaging, age-appropriate, and culturally relevant digital learning resources for children, such as interactive apps and e-books. Utilise technology to enhance teacher support and capacity building through online training platforms and digital teaching aids. Implement robust Management Information Systems (MIS) for evidence-based policy planning. Crucially, address the digital divide by establishing community learning hubs, deploying solar-powered devices, and implementing policies for affordable internet and device subsidies, while also providing digital literacy training for both ECE teachers and parents.

Foster Inclusion and Strategic Partnerships: Implement strategic interventions to extend ECE services to underserved populations, including nomadic communities and Internally Displaced Persons (IDPs), through innovative models like mobile units and temporary, child-friendly centres. Promote diverse and flexible ECE

models such as community-based and home-based care support programs, and integrate ECE components within existing community structures. Actively incorporate local languages and cultural narratives into the curriculum and advocate for mother-tongue instruction. Foster Public-Private Partnerships (PPPs), actively engage parents and communities, seek international collaboration for technical and financial support, and strengthen collaboration between government, ECE practitioners, and research institutions to ensure data-driven policies and interventions.

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SELF-REGULATION AS A CORRELATE OF PROBLEM-SOLVING SKILLS OF PRE-SERVICE TEACHERS IN TERTIARY INSTITUTIONS IN KWARA STATE

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Abstract
Effective teaching in Nigeria requires teachers who can self-regulate to solve problems independently. With this in mind, this study investigated self-regulation as a correlate of problem-solving skills among pre-service teachers in Kwara State. Two research questions were raised for the study, and two null hypotheses were examined in the study. The study employed a correlational research design. The multistage sampling method was used to select 432 pre-service teachers from the University of Ilorin and Kwara State University, Malete. Data was collected using adapted scales: The Self-Regulation Skill Questionnaire (SRQ) and the Problem-Solving Questionnaire (PSQ). Face and content validity were established by experts in early childhood and primary education studies. SRQ yielded a reliability index of 0.76, and the reliability index of PSQ was 0.77 using Cronbach's alpha. Descriptive statistics (frequencies, percentages, mean, standard deviation) and inferential statistics (Spearman's rank correlation) were used for analysis at a 0.05 significance level. Findings revealed that the majority of pre-service teachers exhibited a moderate level of self-regulation and problem-solving skill and there was a significant positive relationship between self-regulation and problem-solving skills. It can therefore be concluded that self-regulation is significantly linked to problem-solving ability in pre-service teachers. Based on these findings, it is recommended that teacher training programmes in Kwara State should explicitly integrate self-regulation strategy instruction into their curriculum to enhance pre-service teachers' problem-solving competencies.
Keywords: Self-regulation, Problem-solving Skill, Pre-service Teachers, Teacher Education, Kwara State

Introduction

People face a variety of problems in their daily lives that, although frequently disregarded, can have a big influence on their general well-being, productivity, and standard of living. Over time, challenges such as difficulty in managing stress from work or family obligations, financial strains, emotional exhaustion, difficulty managing time and digital distraction can accumulate. These problems could have more serious physical, mental and emotional repercussions if they are not appropriately addressed (Bukoye, 2017). Often, these problems linger due to a lack of organised methods for acquiring answers.

The detrimental effect of these prevalent issues might be mitigated by implementing an optimistic attitude and effective problem-solving strategies. The primary objective of education has consistently been to support students in their capacity building in problem-solving and critical thinking skills, which is a vital skill in the complex and rapidly changing world of today (Johnson & Njoku, 2024). According to Atoyeb and Babalola (2022), a problem is a circumstance in which an individual attempts to solve something using all one's innate skills, even though the individual is uncertain of the precise method.

Mehadi (2019) opined that the problem arises when a person wants to finish a task or reach a destination but is unsure of how to get there or close the gap between their current situation and their intended location in an effective manner. A problem is a situation in which there is a discrepancy, inconsistency or difficulty between the

present state and the intended outcome. Oftentimes, pre-service teachers are confronted with one problem or another, which can be an academic or personal problem. Teaching problem-solving skills is crucial to the academic competency of pre-service teachers as it promotes the development of 21st-century skills, such as creative thinking, critical thinking and logical thinking.

Pre-service teachers need to acquire essential competence in problem-solving skills, as these skills not only help learners succeed academically but also enable future educators to successfully address issues in the classroom and support learner development. These skills include the capacity to analyse complicated circumstances, design effective solutions, and adopt novel teaching approaches (Yakubu *et. al*., 2024). Theresa *et. al*. (2025) opined that it is necessary to know the problem-solving ability of pre-service teachers as they would be responsible for nurturing the problem- solving competence of pupils at the early stage of their education. Problem-solving skills imply the proficiency to successfully address challenges that might occur in various phases of life.

Problem-solving is an intellectual process that focuses on accomplishing a goal for which students do not know the primary solution to the problem (Mehadi, 2019). According to Shweta *et al.* (2022) Problem-solving denotes students' ability to effectively resolve difficult and unforeseen issues. These skills encompass the ability to identify, analyse, and comprehend the underlying causes of problems, develop alternative solutions, and execute the selected solution. Problem-solving skills are crucial abilities that aid students in navigating complex issues through creativity, critical thinking, and logical thinking in today's modern world. Problem-solving activities can foster students' freedom to explore, investigate, and seek truth in their own ways(Atoyeb& Babalola, 2022).

Organisation for Economic Cooperation and Development (2019) asserted that problem-solving skills exceed academic fields and prepare learners for challenges in the real world, where adaptability and innovation are essential. In an era of rapid technological advancement, these skills help students analyse information, evaluate alternatives, and implement effective solutions (National Research Council, 2021).

Encis*oet. al., (*2024) also stated that Problem-solving skills are crucial for future learning, societal participation, personal activities, and the development of 21st-century skills like digital and socio-emotional skills. To develop problem-solving skills of pre-service teachers, the lecturers need to ask the students higher-order thinking questions, which will promote their critical and logical thinking skills. These skills would enable the pre-service teachers to integrate the learning experience to real life context.

Previous research had reported the significant impact of problem-solving skills on critical thinking and creative thinking of pre-service teachers (Yakubu *et. al.,* 2024). Obochi (2021) reported that problem solving strategy enhance the performance of the students and help them retain the learning experience. Despite the importance of problem-solving skill many pre-service teachers still find it difficult to inculcate these skills as a result of their low involvement in the teaching and learning process. Many often engage in rote memorisation, crack jokes during lectures, overreliance on digital tools and avoiding challenging tasks. This hinders intellectual growth and leaves students unprepared for challenging academic and real-world situations.

The development of problem-solving skills is closely connected to self-regulation, as students need to review and control their cognitive and emotional processes to effectively solve a challenge. Self-regulation is the ability of an individual to manipulate their emotions, actions, and thoughts in order to endure impulsive desires that could obstruct the achievement of long-term goals (Scherer *et. al.,* 2022). Self-regulation is the capacity to control one's emotional, behavioural, and mental states in ways that are acceptable to others and that contribute to the accomplishment of constructive objectives, including acquiring knowledge, general well-being, and sustaining positive relationships (Atoyeb& Babalola, 2022).

This involves maintaining self-control when feeling frustrated, concentrating on tasks, and making deliberate choices, all of which contribute to enhanced learning, greater well-being, and more robust relationships with others. According to Larrain (2022), self-regulation is a proficient potential which supports changes in conduct in response to circumstances. Competency in self -regulation enables an individual to make goal driven decision; this was buttressed by Scherer *et. al.* (2022), who stated that individuals exhibiting self-regulatory competence have the tendency to make goal-directed decisions and control impulsive behaviors which interfere with their long-term goals.

The concept of self-regulation is typically characterised by three fundamental components. The initial component is the adoption of certain standards related to thoughts, feelings, or behaviours that are cognitively recognised and tracked. The second component focuses on the motivation to lessen the inconsistencies between these standards and the current reality. The final component is the necessary capability to address these discrepancies, despite the presence of challenges and temptations (Baumeister & Heatherton, 1996; Carver & Scheier, 2012, as cited in Leyland, Rowse, & Emerson, 2019).

In addition, Scherer *et al.* (2022) opined that an individual's self-regulation abilities are likely to be influenced by internal factors, such as negative emotions or stress, which can weaken their determination or the resources available for self-regulatory behavior and external environmental influences, such as being situated in an area full of temptations for risky actions. The competence to self-regulate is essential for effective problem-solving, as it allows students to develop plans, monitor their progress, and regulate their approach in response to academic difficulties. As stated by Zimmerman and Moylan (2009), students who are involved in self-regulated learning tend to be competent in problem-solving by setting clear goals, employing systematic techniques, and reflecting on their accomplishments.

Students who do not have these skills may grapple with mental stress, frustration and impulsiveness, which can impede their ability to solve the problem. Broadbent and Poon (2020) affirmed that self-regulation improves metacognitive awareness, enabling students to assess their problem-solving procedure and alter the technique as required. Pre-service needs the skills in order solve their academic and personal issues. Furthermore, Panadero *et. al.* (2018) reported that self-regulated learners utilise an advanced problem-solving approach by thoroughly planning the approach, constantly monitoring the progress, and adjusting tactics when obstacles occur. Jarvela *et. al.* (2021) established that an individual who self-regulates participates effectively in group work by concentrating on the work, handling conflicts, and integrating peer feedback.

In addition, there is an inconsistency in gender difference on students' problem-solving skills. Gender is a variation in people, which can be male or female; this variation is a result of biological makeup. Research has confirmed that there are gender differences in students' problem-solving skills. Jessey (2023) reported that male students' performance in problem-solving is higher than that of female students. In many instances, the disparity in problem-solving skills between boys and girls is not significantly evident during the childhood stage; however, as they transition into adolescence, these differences start to emerge (Robinson &Lubienski, as cited in Jessey, 2023). Mefoh*et al.* (2017) also revealed that Male teenagers outperformed female teenagers on the problem-solving activities. Understanding the interplay between self-regulation and problem-solving skills of pre-service is essential, as this enables the students to manage their learning and solve challenges with resilience and creativity. It is against this that this study investigated the relationship between self-regulation and problem-solving of pre-service teachers.

Purpose of the Study

The following objectives were raised to guide this study.

1. Determine the level of self-regulation skills of pre-service teachers in tertiary institutions in Kwara State
2. Determine the level of problem-solving skills of pre-service teachers in tertiary institutions in Kwara State
3. Examine significant relationship between gender and problem-solving skills of pre-service teachers in tertiary institutions in Kwara State
4. Examine significant relationship between self-regulation and problem-solving skills of pre-service teachers in tertiary institutions in Kwara State

To achieve the aim of this study, the following questions were raised.

1. What is the level of self-regulation skills of pre-service teachers in tertiary institutions in Kwara State?
2. What is the level of problem-solving skills of pre-service teachers in tertiary institutions in Kwara State?

Hypotheses

The following hypotheses were formulated and tested in this study:

Ho1 There is no significant relationship between gender and problem-solving skills of pre-service teachers in tertiary institutions in Kwara State

Ho2 There is no significant relationship between self-regulation and problem-solving skills of pre-service teachers in tertiary institutions in Kwara State.

Methodology

This study adopted a correlational research design; this would enable the researcher to show the relationship between the variables in the study. The population of this study comprised all pre-service teachers studying early childhood primary education studies in the University of Ilorin and Kwara State University, Malete. There are 488 pre-service teachers in the University of Ilorin, while in Kwara State University, there are 233 pre-service teachers. To draw the sample, the multi-stage sampling technique was used to select the sample. Firstly, the sample was divided into two strata. Thereafter, a simple random sampling technique was used to select 432 pre-service teachers based on research advisors, which stated that the recommended sample size for a population of 600 at a confidence level of 95% is 432. The instrument that was used for data collection consists of two adapted scales, titled Self-Regulation Questionnaire (SRQ) from Chen and Lin (2018) and Problem-Solving questionnaire from Ventura-León et al. (2025). The instrument consists of two sections A, B C. Section A comprised demographic variable of the respondents while section B consists 10 items on self -regulation on a four (4) point Likert type scale of Always (A) 4, Often (O) 3, Sometimes(ST) 2, and Never (1) while section C consists of 10 items problem solving skill on a four (4) point Likert type scale of Strongly Agree (SA) 4, Agree (A) 3, Strongly Disagree (SD) 2, and Disagree (SD). The instrument was validated by lecturers in the Department of Early Childhood and Primary Education Studies. Cronbach's alpha was used to establish the reliability coefficient, and the reliability coefficients of the two instruments were 0.76 and 0.77. Descriptive statistics (frequencies, percentages, mean, standard deviation) and inferential statistics (Spearman's rank correlation) were used for analysis at a 0.05 significance level.

Results

	Frequency	Percentage (%)	Valid Percent
Low	53	12.27%	12.27
Moderate	274	63.42%	63.42
High	105	24.31%	24.31
Total	432	100.0%	100.0

What is the level of self-regulation of pre-service teachers in tertiary institutions in Kwara State?

Table 1: Self-Regulation of Pre-Service Teachers

The Table above revealed that the majority of the respondents, 274 out of 432 (63.42%), demonstrated a moderate level of self-regulation skill. Only 105 pre-service teachers (24.31%) exhibited a high level of self-regulation skill, while 53 pre-service teachers (12.27%) fell into the low-level category. The result revealed that majority of pre-service teachers in kwara state have moderate self-regulation.

What is the level of problem-solving skills of pre-service teachers in tertiary institutions in Kwara State?

Table 2: Problem-Solving Skills of Pre-Service Teachers

	Frequency	Percentage (%)	Valid Percent
Low	7	1.62%	1.62
Moderate	380	87.96%	87.96
High	45	10.42%	10.42
Total	432	100.0%	100.0

The Table 2 above revealed that the majority of the respondents, 380 out of 432 (87.96%), demonstrated a moderate level of problem-solving skill. Only 45 pre-service teachers (10.42%) exhibited a high level of problem-solving skill, while 7 pre-service teachers (1.62%) fell into the low-level category.

Hypothesis One: There is no significant relationship between gender and problem-solving skills of pre-service teachers in tertiary institutions in Kwara State

Table 3: Summary of Spearman's Rank Correlation of Gender and Problem-Solving Skills of Pre-Service Teachers in Tertiary Institutions in Kwara State

Variables	N	Mean	St.dev	R	Df	Sig	Decision
Problem solving skill	432	27.30	2.882				
				0.96	464	.003	*Sig*
Female	432	1.70	.460				

The result above showed that the p-value (.003) is less than 0.05. Hence the null hypotheses which stated that the null hypothesis states that there is no significant relationship between gender and problem-solving skills of pre-service teachers in tertiary institutions in Kwara State is therefore rejected. Hence, it was revealed that there is a significant relationship between gender and problem-solving skills of pre-service teachers in tertiary institutions in Kwara State

Hypothesis Two: There is no significant relationship between self-regulation and problem-solving skills of pre-service teachers in tertiary institutions in Kwara State

Table 4: Summary of Spearman's Rank Correlation of Self-Regulation and Problem-Solving Skills of Pre-Service Teachers in Tertiary Institutions in Kwara State

Variables	N	Mean	St.dev	r	Df	Sig	Decision
Self-regulation	432	28.97	6.686				
				0.46	464	.002	*Sig*
Problem solving	432	27.30	2.802				

The result above showed that the p-value (.002) is less than 0.05. Hence the null hypotheses which stated that the null hypothesis states that there is no significant relationship between self-regulation and problem-solving skills of pre-service teachers in tertiary institutions in Kwara State is therefore rejected. Hence, it was revealed that there is significant relationship between self-regulation and problem-solving skills of pre-service teachers in tertiary institutions in Kwara State.

Discussion of Findings

The findings revealed that a majority (63.42 %) of pre-service teachers in Kwara State exhibit moderate self-regulation. This suggests that most of these pre-service teachers are still *l*earning how to unlock the full potential within themselves and may not yet have enough hands-on experience to consistently use this skill on their own. This finding is similar to what the study of Onah *et. al.* (2022) found among Physics Education students at Enugu State University, where overall self-regulation scores largely fell into the moderate category after the scale was divided into low, moderate, and high levels. This finding is also in tandem with the study of Atoyebi and Babalola (2022), wherein it was reported that many of the undergraduates in Southwestern Nigeria were in the moderate self-regulation group, showing that moderate levels are common among Nigerian tertiary students. On the other hand, this finding opposes the study of Muhktar*et. al.,* (2023), where it was revealed that English undergraduates in Nigeria demonstrated high awareness and use of self-regulation strategies in their academic writing, which implies a high self-regulation level.

Another finding revealed that 87.96 % of pre-service teachers in Kwara State demonstrate a moderate level of problem-solving skill. One reason for this could be that their course of study places more emphasis on theory than on extended teaching practice, so they spend a lot of time learning concepts in lectures and only a short period in real classrooms where they might face a wider range of student behaviours and learning problems. This finding matches what was revealed in the study of Atoyebi and Babalola (2022), many undergraduates in Southwestern Nigeria were in the middle group after their problem-solving scores were split into low, moderate, and high levels. In the same way, this finding is in tandem with Otun and Njoku (2020), who reported that pre-service mathematics teachers showed only moderate performance on algebra problem-solving tasks before any special training. On the contrary, this finding disagrees with Okigbo and Ayegbusi (2024), whose study revealed high scores among NCE mathematics trainees on standard problem-solving tests. This finding also contradicts Jaja and Victor-Ishikaku (2023), who revealed that science teacher trainees achieved high problem-solving outcomes after exposure to a constructionist teaching approach.

It was reported in this study that there was a significant relationship between gender and problem-solving skills of pre-service teachers in tertiary institutions in Kwara State. An explanation for this finding is that, beyond individual traits, both men and women in teacher education programmes follow the same curriculum, take part in the same classroom activities, and are evaluated by the same criteria, which helps even out any gaps in skill development. This finding supports Obunge (2021), who reported a significant gender gap in mathematics

problem-solving abilities among senior secondary students in Port Harcourt, with boys outperforming girls on quadratic equation tasks. However, another Nigerian research tells a different story. For instance, the findings of this study oppose Mefoh*et. al.,* (2017) study in the University of Nigeria, where it was found that gender did not have a simple independent effect on heuristic problem-solving ability when students worked through tasks like the Tower of Hanoi

This study also revealed that there was a significant relationship between self-regulation and problem-solving skills of pre-service teachers in tertiary institutions in Kwara State. This suggests that there is a link between how well trainees plan, monitor, and reflect on their own learning and their ability to work through teaching-related challenges. This finding agrees with Atoyebi and Babalola (2022), who reported, in their study, that there was a significant positive correlation between self-regulation and problem-solving skills among 1,426 undergraduates in Southwestern Nigeria. This finding, however, disagrees with Abdullah et al. (2022), who reported that emotional-intelligence factors, including self-regulation, did not significantly predict problem-solving skill on an algebraic task in Sokoto State.

Conclusion

The study examined the relationship between self-regulation and problem-solving skills of pre-service teachers in tertiary institutions in Kwara State. It was found that the self-regulation and problem-solving skills of pre-service teachers are moderate, and there was a significant difference in problem-solving skills of pre-service teachers based on gender. The study concluded that there was a significant relationship between self-regulation and problem-solving skills of pre-service teachers in tertiary institutions in Kwara State.

Recommendations

The following recommendations were made based on the findings:

1. Teacher training institutions should include self-regulation training courses to help pre-service teachers develop stronger self- emotional control and learning skills.
2. School management should lay emphasis on active problem-solving instructions, such as project-based learning, case-based learning and simulations in order to move students from moderate to high competency.
3. Policy makers should organise gender-sensitive training programmes to address potential differences.
4. Pre-service teachers should attend training and workshops on self-regulation and problem-solving skills in order to enhance their teaching readiness.

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EFFECT OF MONTESSORI-BASED METHOD ON LITERACY SKILLS ACQUISITION OF YOUNG CHILDREN IN PUBLIC PRIMARY SCHOOLS IN OBAFEMI OWODE LOCAL GOVERNMENT

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Abstract
Literacy skills are built in the early years. For young children, acquiring these skills may be affected by challenges such as individual, environmental, or systemic challenges. To achieve the expected literacy skills, a method that considers their uniqueness and uses multisensory learning is required. This study examined the effect of the Montessori-based method on the literacy skill acquisition of young children. This study adopted a pre-test and post-test non-equivalent quasi-experimental research design. The study was conducted in two Public Schools in Obafemi-Owode Local Government Area of Ogun State, Nigeria. It comprised 40 children in a lower basic primary school. Data were collected using the Literacy Skill Test. The data collected were analyzed using descriptive statistics, while inferential statistics of analysis of covariance were used to answer the research hypothesis. The results indicated that pupils recorded an improvement in phonological awareness and reading with the use of the Montessori-based method. This study recommends that educators embrace the Montessori-based method and receive appropriate Montessori training to help young children develop appropriate literacy skills.
Keywords: Literacy Skills, Montessori-based method, Young Children, Phonological Awareness

Introduction

The importance of early literacy skills in shaping a child's educational trajectory and lifelong success is well established. Literacy skills, which encompass reading, writing, listening, and speaking, are not only vital for effective communication but also for cognitive, emotional, and social development. Children with strong early literacy skills are better positioned to engage in critical thinking, effective communication, and lifelong learning later in life. Reading and writing skills often develop concurrently during the early literacy stages and are foundational to academic success (Quinn &Philippakos, 2023). Conversely, children who lack rich early language experiences are often at a disadvantage upon entering school, with slower language development and executive functioning, which hampers their academic progress (Brown, 2014; Paratore *et. al*., 2011; Reutzel, 2015).

Global statistics underscore the urgency of early intervention. Nearly 40% of children under the age of five are at risk of not achieving their developmental potential (Jeong *et. al*., 2022). In Nigeria, the literacy crisis is particularly severe among vulnerable populations. According to the UNICEF report (2023), there is a significant literacy crisis among vulnerable children in Nigeria, with over 70% lacking foundational literacy and numeracy skills. The orphaned and vulnerable children (OVC) in Nigeria include orphans, children in child-headed households, internally displaced children, child laborers, and those affected by HIV/AIDS, abuse, or armed conflict (FMWASD, 2014; Charles &Osah, 2019). These children often face social and economic exclusion, trauma, and inadequate access to quality early education, all of which impair their language development and hinder literacy acquisition.

Vulnerability is defined as exposure to harm, physically or emotionally, and often correlates with poverty, displacement, trauma, neglect, and socioeconomic marginalization, which impede language development and literacy acquisition. In such contexts, children are deprived of critical early literacy experiences, such as shared reading, phonemic awareness, and exposure to print. Without these foundational exposures, young children are less prepared to succeed academically and are more likely to fall behind their peers.

In response to these challenges, the Montessori-based method has emerged as a promising approach to support early literacy development, particularly in young children. Grounded in child-centered and multisensory learning principles, the Montessori-based method fosters independent learning, self-regulation, and critical thinking through structured environments and tactile materials that engage multiple senses. Its individualized approach encourages children to progress at their own pace, making it particularly suitable for struggling learners and learners with diverse needs. It encourages self-directed learning that promotes self-confidence, independent thought, and action while fostering social-emotional and intellectual growth. It nurtures order and concentration and creates a structured environment, stimulating learning resources and daily routines that support children's emerging self-regulation. "The Montessori environment allows children to take responsibility for their education, giving them opportunities to function independently" (Omotuyole, 2016).
The literacy crisis in Nigeria is a pressing concern. The situation is dire: UNICEF (2024) reports that only 26% of Nigerian children aged 7–14 years have basic reading and mathematical skills, with 70% of 10-year-olds unable to read a simple sentence. These alarming statistics reflect deep systemic issues and emphasize the urgent need for inclusive and effective educational interventions. In line with the United Nations' 2030 Agenda for Sustainable Development, which calls for equitable and quality education for all, addressing the literacy gap is not only an educational priority but also a matter of social justice.

Therefore, this study investigates the effect of the Montessori-based method on literacy skills acquisition among young children in public primary schools in the Obafemi Owode Local Government Area of Ogun State, Nigeria. Through a quasi-experimental research design, this study investigated whether Montessori-based strategies can improve phonological awareness and reading outcomes, providing insights into their potential for wider implementation in similar contexts.

Statement of the Problem

Young children who live in chaotic environments or environments marked by instability, trauma, and limited educational resources, or who come from low-income families and have limited access to high-quality early education, are at a significant disadvantage in terms of literacy achievement. Without timely and appropriate interventions, these early disadvantages can persist, widening the academic achievement gap and limiting long-term educational and social outcomes.

While the importance of early, child-centered, and inclusive teaching strategies is widely acknowledged, there remains a lack of empirical evidence assessing the effectiveness of such methods, particularly the Montessori-based approach, in addressing the impact on the literacy skills of young children in low-resource public school settings in Nigeria. The Montessori-based method, with its emphasis on multisensory, individualized, and self-directed learning, holds promise for supporting literacy development in this population group. However, its potential impact remains underexplored in local educational contexts, where systemic barriers and resource constraints persist.

This gap in research highlights the urgent need to evaluate whether Montessori-based interventions can meaningfully improve literacy skills, particularly phonological awareness and reading ability, of vulnerable children in public primary schools. Addressing this need is critical for informing more effective, equitable, and responsive educational strategies that support the development and success of marginalized learners.

Purpose of the Study

This study investigates the effectiveness of the Montessori-based method, a child-centered, multisensory, and hands-on educational approach, in improving the literacy skills of young primary school pupils in Obafemi Owode Local Government Area, Ogun State, Nigeria. The objectives are to:

1. Examine whether the method of intervention (Montessori-based or Traditional) affects the literacy skills of vulnerable primary school pupils.
2. Ascertain whether gender affects the literacy skills of vulnerable primary school pupils.
3. Determine if treatment and gender have an effect on the literacy skills of vulnerable primary school pupils.

Research Hypotheses

H01. There is no significant differenceof treatment effect (Montessori-based method) on the Literacy skills of young primary school pupils.

H02.There is no significant difference in gender on the literacy skills of young primary school students pupils.

H03.There is no significant interaction effect between treatment and gender on the literacy skills of young primary school pupils.

Theoretical Framework

This study is grounded in developmental psychology, drawing on theories such as Jean Piaget's cognitivetheory and Erik Erikson'spsychosocialtheory of development. These frameworks emphasize the role of both individual maturation and social interactions in shaping the development and enhancement of young children's literacy skills. They help provide an in-depth understanding of behaviors, developmental milestones, and the biological and environmental influences that impact literacy development in children.

Jean Piaget's Cognitive theory explains how children's thinking develops through a series of structured, sequential stages. He proposed that cognitive development is not merely the accumulation of knowledge but rather the construction of mental models that help children understand the world. He identified four stages of this cognitive development. The sensorimotor stage (0–2 years) focuses on learning through sensory experiences and motor actions, with the major achievement being the permanence of objects. The preoperational stage (2–7 years) is characterized by the development of symbolic thought and language, although children at this stage still struggle with logical reasoning and conservation. In the concrete operational stage (7–11 years), children develop logical thinking related to concrete objects, showing improved problem-solving skills and understanding of conservation, classification, and numerical reasoning. The formal operational stage (from approximately 11 years onward) involves abstract, hypothetical, and scientific reasoning, enabling individuals to think systematically about possibilities beyond immediate experience.

Key cognitive processes are central to Piaget's theory. Schemas are mental structures used to organize knowledge. Equilibrium refers to a balanced state in which existing schemas adequately explain experiences. Adaptation involves adjusting mental models through assimilation (fitting new information into existing schemas) and accommodation (modifying schemas when new information cannot be easily integrated). Together, these processes explain how cognitive development progresses as children interact with and understand their environment. This theory emphasizes and has educational implications for children, such as respect for individual differences, respect for developmental stages, constructive learning, developmentally appropriate education, use of concrete materials, individualized instruction, and respect for autonomy, all of which align with the Montessori-based method.

Erik Erikson's psychosocial theory of development proposes that human development occurs across eight sequential stages, each defined by a psychosocial crisis that must be resolved for healthy personality development. Successful resolution of each crisis fosters positive psychological qualities, whereas failure may result in emotional and social difficulties.

The stages begin with trust versus mistrust in infancy, where consistent and responsive caregiving leads to a sense of security, whereas neglect results in fear and mistrust. In autonomy versus shame and doubt during toddlerhood, children seek independence; encouragement builds confidence, whereas excessive control leads to shame and low self-esteem. The initiative versus guilt stage in early childhood focuses on curiosity and self-assertion, with supportive guidance promoting purpose and discouragement leading to feelings of guilt. During the industry versus inferiority stage in middle childhood, academic and social competence are developed; success fosters pride, whereas repeated failure leads to feelings of inferiority. Adolescence is marked by identity versus role confusion, wherein individuals explore values, beliefs, and future roles to form a stable identity. In young adulthood, intimacy versusisolation focuses on forming close relationships, with success resulting in love and connection. Adulthood involves generativity versus stagnation, reflecting the desire to contribute meaningfully to society and future generations. Finally, in late adulthood, integrity versus despair involves reflecting on life achievements, leading to wisdom and fulfillment or regret and despair. The Montessori method

aligns with Erikson's psychosocial theory in several ways. Just as Erikson's stages emphasizes on the importance of independence, sense of initiative, sense of competence, etc., Montessori classrooms allow children to make choices and work independently to develop autonomy, allow children to explore interests to develop initiative, allow children to be involved in hands-on activities in order to develop a sense of competence etc.

Methodology

This study employed a pre-test post-test non-equivalent quasi-experimental research design with a 2 × 2 factorial structure. The independent variable was the method of instruction at two levels: the Montessori-based method (Experimental Group) and the traditional method (Control Group). Gender (Male and Female) was also examined as a moderating variable. The dependent variable was literacy skills. A quasi-experimental design was deemed appropriate becauseof the impracticality of random assignment in natural educational settings involving human participants. The population captured in this study is primary one pupilsin Obafemi Owode Local Government Area, Ogun State, Nigeria. This location was purposefully selected because of the high population of low-level income earners in the area due to economic and social factors. A simple random sampling technique was employed to select the two schools in the area. One intact class of primary 1 pupils was selected from each school for the study. Each intact class contained 20 pupils,making a sample of 40 pupils for the study. This sampling ensured homogeneity in the class structure and minimized external variations.

Data was collected using a Literacy Skill Test (LST), which was developed by the researcher with a focus on phonological awareness and reading comprehension. It was developed using a 2-way table of specifications to align test items with cognitive objectives in the curriculum. It assessed three domains of cognitive development: knowledge, comprehension, and application. Knowledge assessed pupils' ability to recall previously learned material, comprehension measured the pupils' ability to understand the meaning of what has been taught,and application tested the ability of the pupils to utilize their knowledge of the learned content in a new situation. Both the experimental and control groups were administered a pre-test using the Literacy Skill Test to establish their baseline literacy abilities. Subsequently, the experimental group received intervention through the Montessori-based method for 5-weeks. The content validity of the instruments was determined by consulting with the experts in the field and lecturers in the Department of Early Childhood Education. It was done to ensure relevance to the subject matter, coverage of the content areas, appropriateness of language usage, and clarity of purpose.

According to the analysis of the findings of this study, the reliability statistics for the pretest (Cronbach's Alpha) are 0.766, and (Cronbach's Alpha) based on standardized items is 0.83. while reliability statistics for post-test (Cronbach's Alpha) are 0.934, and (Cronbach's Alpha based on standardized items) is 0.935. This implies that the research instruments are reliable.

Results

Data was analyzed using inferential statistics and analysis of covariance to answer research hypotheses. ANCOVA confirmed a significant difference in the effect of treatment ($F(1,39) = 31.444$, $p < 0.001$, $\eta^2 = 0.473$), indicating that the Montessori-based method significantly enhanced the children's literacy skills. Gender had no significant difference ($p = 0.171$), and no significant interaction effect between treatment and gender was observed ($p = 0.152$).

Test of Hypotheses

Hypothesis 1

There is no significant difference in treatment effect (Montessori-based Vs Traditional method) on literacy skills of young primary school pupils.

Hypothesis 2

There is no significant difference in the gender effect on literacy skills of young primary school pupils.

Hypothesis 3

There is no significant interaction effect of treatment and gender on the literacy skills of young primary school pupils.

Table 1: Summary of Analysis of Covariance of Literacy Test Scores by Treatment and Gender

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	1388.919[a]	4347.230	61.478	.000	.875	
Intercept	1 73.250	1	173.250	30.674	.000	.467
Prelitotal 999.339	1	999.339	176.936	.000	.835	
Treatment	177.598	1	177.598	31.444	.0 00	.473
Gender	11.018	1	11.018	1.951	.171	.053
Treatment *gender	12.091	1	12.091	2.141	.152	.058
Error	197.681	35	5.648			
Total	5667.000	40				
Corrected Total	1586.600	39				

a. R Squared = .875 (Adjusted R Squared = .861)

Hypothesis 1

There is no significant difference in treatment effect (Montessori-based Vs Traditional method) on literacy skills of young primary school pupils

The results in the table shows that there is a significant effect of treatment on literacy skills of young primary school pupils. ($F_{(1, 39)}$ = 31.444, p=0.000, = .473). Since p<0.05, it follows that the main effect of treatment on literacy skills of pupils is statistically significant. In conclusion, the null hypothesis is rejected.

Hypothesis 2

There is no significant difference in gender effect on literacy skills of young primary school pupils.

The results of the table reveals that after controlling the effect of pretest scores of pupils, there is no significant effect of gender in the literacy skills of young primary school pupils. $F_{(1,39)}$ = 1.951, p=1.71, = 0.53.Clearly p>0.05, hence the null hypothesis is accepted.

Hypothesis 3

There is no significant interaction effect of treatment and gender on the literacy skills of young primary school pupils.

The interaction effect of treatment and gender on posttest of pupil's literacy test according to the statistics on table ($F_{(1, 39)}$ = 2.141, p= 0.152, = 0.58) shows no statistically significant interaction effect of treatment and gender on the literacy skills of young primary school pupils. Hence, the hypothesis is accepted.***Table 2 : Pair Wise Comparisons of Literacy Skills of Young Primary Pupils (Post Hoc)***

Dependent Variable: POSTTOTAL

(I) Treatment	(J) Treatment	Mean Difference (I – J)	Std. Error	Siq	95% Confidence Interval for Difference Lower bound	Upper Bound
Non - Montessori	Montessori	-4.304*	.768	.000	-5.862	-2.746
Montessori	Non -Montessori	4.304	768	.000	2.746	5.862

Based on estimated marginal means: *The mean difference is significant at 0.05level
Adjustments for multiple comparisons: Bonferroni

The post-hoc analysis results (Table 2) indicate that the mean post-test scores of pupils were significantly higher in the treatment group (Montessori-based) than in the non-Montessori-based treatment group.

The mean difference between the treatment and non-treatment groups was quantified as -8.608 ($p<0.05$), which was statistically significant. The direction of the decreasing effect of the Montessori-based method on the literacy skills of young primary school pupils is as follows: traditional method < Montessori method. In conclusion, the null hypothesis is rejected, acknowledging the significant difference found.

Discussion of Findings

The Montessori-based method led to a 70.7% improvement in literacy skills among young children, which was significantly higher than the 21.4% gain from the traditional method. This may be attributed to Montessori's emphasis on phonological awareness in their curriculum. These findings align with those of Lillard (2012), Van der Henst (2019), and Pickering (2019), who found that students taught using the Montessori approach achieved higher positive scores than those taught using the traditional approach.

Although girls showed a slightly higher mean gain than boys, the difference was not statistically significant, indicating that gender did not significantly impact literacy outcomes. This supports the findings of Lillard (2019) and Marshall (2011), suggesting that treatment methods, rather than gender, played a larger role. There was no significant interaction between treatment and gender on literacy outcomes. This implies that both boy sand girls benefited similarly from the Montessori-based method. These results are supported by studies from Lillard (2013) and Quest (2013).

Montessori classrooms encourage children to explore materials and activities at their own pace, fostering independence and a sense of ownership over their learning. This can be particularly beneficial for children who might not have had consistent exposure to literacy experiences at home. Montessori materials often incorporate various senses, like touch, sight and sound, in learning activities. This multisensory approach caters to diverse learning styles and can be particularly helpful for vulnerable children who might struggle with traditional, text-based methods. Montessori classrooms introduce children to the sounds and patterns of language early on, laying the foundation for future reading success. This is crucial for vulnerable children who might not have been exposed to such concepts in their environment. Montessori teachers provide individualised support and guidance to each child, catering to their specific needs and learning pace. This personalised approach can be particularly beneficial for vulnerable children who might require additional support to develop their literacy skills.

Conclusion

The results of this research imply that the traditional methods could be substituted with the Montessori method to achieve more positive outcomes in literacy skills. This study reveals that the Montessori method had a significant effect on the literacy skills of vulnerable primary school pupils; the gender variable did not have any significant effect on the literacy skills of vulnerable pupils, nor did the interaction effect of treatment and gender have a statistically significant effect on the literacy skills of vulnerable pupils. Other considerations for positive

implications include early intervention and individualised instruction. If pupils are introduced to the Montessori method from the early years of life and instruction is based on the individual child's interest, strengths and pace, there will be changes of higher positive results.

Recommendations

The findings from this study showed that the Montessori approach was more effective and had a positive impact on the literacy skills of vulnerable pupils. Therefore, the following are recommended:

1. Educators should embrace the Montessori method in developing the literacy skills of young children.
2. Educators should be provided with specialised training by certified personnel on Montessori principles and methods to equip them with the required competencies.
3. Curriculum planners should incorporate the Montessori systematic approach of teaching literacy skills and ensure explicit instruction in phonemic awareness, which may not be emphasised in the traditional approach.
4. Educators should implement vocabulary-rich activities that are tailored to pupils' interests and age.
5. Educators should develop individualised learning plans that cater to the specific needs and learning styles of each pupil.
6. Collaboration with other professionals, such as speech therapists and special education teachers, is encouraged to provide comprehensive support for the children.
7. Teacher training institutions should incorporate child-centred approaches like the Montessori methods into their training programme.
8. The government should channel more investments into literacy skills acquisition of young children through special intervention agendas

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PERCEIVED IMPACT OF MONTESSORI LANGUAGE MATERIALS ON LANGUAGE ACHIEVEMENT OF CHILDREN WITH SPEECH DIFFICULTIES IN SOME SELECTED SPECIAL SCHOOLS IN LAGOS STATE

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Abstract

This research assessed the perceived impact of Montessori Language Materials on the Language Achievement of Children with Speech Difficulties in Lagos State. Two research questions guided the study. A ***descriptive survey research design*** *was employed for this study. The sample comprised two hundred teachers who were selected using a purposive sampling technique. A self-designed instrument titled "Questionnaire on the Impact of Montessori Language Materials on the Language Achievement of Children with Speech Difficulties (QMLMLACSD)" was used to collect data for the study. Thereafter, they were analysed using descriptive and inferential statistics. The result showed that the teachers' perception of the impact of using Montessori Language Materials in improving the language achievement of children with speech difficulties in selected special needs schools in Lagos State is positive, and the extent to which teachers use Montessori Language Materials in teaching children with speech difficulties in selected special needs schools in Lagos State is low. It was concluded that the teachers in selected special needs schools in Lagos State had an appreciable perception of the impact of Montessori Language Materials on improving the language achievement of children with speech difficulties, with a low level of implementation of the materials due to challenges such as limited resources, inadequate training, and insufficient administrative support. Hence, it was recommended that school administrators should encourage continuous professional development programs focused on the Montessori method for language instruction. Regular workshops and training sessions on using Montessori Language Materials effectively should be organised to ensure teachers are equipped with the skills and confidence needed to implement these tools. Such training sessions should be facilitated by Montessori experts in leading Nigerian Universities that have Montessori courses.*

Keywords: Achievement; Children with Speech Difficulties; Impact of Montessori Language Materials

Introduction

The importance of special education in Nigeria cannot be overemphasised, especially when it comes to meeting the various disabilities of children who have impairments and learning challenges. In line with the National Policy on Education (NPE) (Federal Republic of Nigeria, 2013), the government recognises the value of offering inclusive education to all students, including young children, irrespective of their intellectual or

physical capacities. In order to maximise the academic potential of children with speech issues, cognitive impairments, and other learning obstacles, special education is essential in providing them with individualised support (Adekunle, 2021). If there are no targeted interventions, these children might find it difficult to learn as much as their counterparts. Due to the need to address each child's specific requirements, tailored instruction and focused interventions are important in enhancing the academic performance of pupils with a range of learning problems (Shuqing&Yuetong, 2022). It is crucial to make investments in evidence-based approaches that improve the learning experiences of children with speech challenges and other impairments in the Nigerian environment, where resources for special education may be scarce (Sharon & Sylvia, 2003).

Children who have speech difficulties frequently experience difficulties with articulation, fluency, or comprehension. This can have a substantial negative influence on their capacity to function socially and academically, as well as communicate effectively. According to Obaka (2017), these categories of children are those with stuttering, dysarthria, and language delays. Adeyinka (2020) identifies children with speech difficulties as those who struggle with language development, articulation, or fluency and find it challenging to communicate and engage with others. While Olayinka (2019) posited that speech issues are those who have problems with their ability to produce speech, grasp language, or communicate effectively, which makes it difficult for them to understand or express themselves clearly to others, early detection and assistance are needed to help children with speech impairments reach their full potential in terms of language development and academic performance. The acquisition of language by children who struggle with speaking is critical to their entire development since it affects their prospects, social relationships, and academic performance. Introducing Montessori language materials is one practical way to assist these children in achieving language competency. These resources offer multi-learning experiences that accommodate a range of learning styles and skill levels since they are founded on the ideas of hands-on learning and customised education. Through interactive activities that emphasise vocabulary growth, phonological awareness, and language expression, Montessori Language Materials help children with speech issues acquire communication skills and create a supportive learning environment that is ideal for language acquisition. Furthermore, as Montessori education is self-paced, kids can advance at their own pace and develop confidence and independence when they eventually grasp language concepts.

According to Maria Montessori (1912), Montessori Language Materials are meticulously planned teaching aids created especially to support young children's language development. In her explanation, Angeline (2017) goes into detail about Montessori Language Materials, which are an essential part of the educational methodology that promotes children's language development on all fronts. These carefully designed resources support the sequential acquisition and investigation of language concepts such as phonics, vocabulary, grammar, and comprehension through practical application and hands-on learning. The Montessori Method places a strong emphasis on the value of sensory-rich items that pique children's natural interest and provide them the freedom to autonomously learn language at their own speed. With the help of the Montessori Language Materials, children may actively explore and express themselves via language, building the groundwork for reading and communication skills that last a lifetime. Some of the major Montessori language materials are large movable alphabets, small movable alphabets, sandpaper letters, and phonetic letter boxes. Using these materials with children with speech disorders helps to fine-tune their problems.

Evidence has shown that there is research-based evidence that Montessori language materials contribute significantly to the vocabulary development and expressive language abilities of learners with speech difficulty. Moving forward, Kolawole (2018) discovered that using Montessori language materials greatly increased the language achievement of kids who had trouble speaking, especially regarding vocabulary development and expressive language abilities. Positive results were reported by Ogunyemi and Kolawole (2020), suggesting that therapies using Montessori language materials helped children with speech challenges improve their receptive and expressive language skills, which in turn improved their total language competency. The use of Montessori language materials significantly improved phonological awareness and speech intelligibility in children with speech difficulties, according to a study by Adeniji (2019). This suggests that the approach effectively meets these children's unique language needs. The use of Montessori language materials in speech therapy sessions led

to significant improvements in language comprehension and verbal expression for children with speech difficulties, as reported by Salami and Adekola (2021), highlighting the success of this intervention in fostering language development. According to research by Adegoke and Adebayo (2017), children with speech difficulties who received Montessori Language Materials interventions showed notable improvements in their language fluency and communication skills. This suggests that using this approach could improve the children's overall language achievement outcomes.

At this point, it is imperative to reiterate that having empirical evidence of teachers' perception of the impact of using Montessori Language Materials and the extent to which they use Montessori Language Materials to improve the language achievement of children with speech difficulties becomes imperative. This is because much has not been reported in the literature regarding this. Their perceptions play a huge role in whether they would implement the materials or otherwise. Moving forward, it was observed that other past scholars have also conducted several studies related to this one. For instance, Ojo (2020) observed that Montessori materials significantly fostered engagement and enhanced language skills, emphasising their potential for supporting language acquisition in children with unique speech needs. Adeyemi (2021) reported that teachers widely regarded these materials as crucial in aiding speech development. Montessori Language Materials, as noted by teachers, offered multisensory experiences, catering to various learning styles, which contributed to a more inclusive and effective learning environment for children with diverse language needs.

Amadi and Okechukwu (2020) further highlighted that teachers perceived Montessori language materials as vital tools that support phonetic awareness and vocabulary acquisition, both essential for language development in children with speech challenges. Ibrahim (2022) reported that a positive correlation exists between the use of Montessori language materials and improved speech outcomes. Olowu (2021) observed that while a significant majority of teachers recognised the value of Montessori language materials for supporting language development, only about 60% reported regularly integrating them into their teaching practices. Nwankwo (2021) found that although teachers widely appreciated the effectiveness of these materials, only about half (50%) actively used them in daily lessons. Again, Adediran and Kolawole (2020) found that approximately 65% of teachers used Montessori language materials consistently, though their usage frequency varied based on teachers' levels of training and experience.

The above studies did not mainly focus on the intention of this study. Hence, this study is important because it tackles the urgent need to improve the language proficiency of kids who struggle with speech in Lagos State's special needs schools. Children who struggle with speech have particular difficulties learning languages and communicating, which can have a big influence on their social and intellectual development.

Statement of the Problem

Children who have speech difficulties frequently experience difficulties with articulation, fluency, or comprehension. This can have a substantial negative influence on their capacity to function socially and academically, as well as communicate effectively. The acquisition of language by children who struggle with speaking is critical to their entire development since it affects their prospects, social relationships, and academic performance. Introducing Montessori language materials such as large moveable alphabets, small moveable alphabets, sandpaper letters, phonetic letter boxes, etc. Evidence has shown that the above materials have a positive impact on children with language disorders. Yet, literature reports that Montessori language materials are not adequately used to improve these categories of children's speech problems (Kolawole, 2018; Ogunyemi & Kolawole, 2020). The consequences are that children with speech problems will continue to experience negative achievements (Adeniji, 2019). Further research shows that there are deficiencies, especially in the use of Montessori language materials in teaching children with speech disorders, within the region of this study. It is against this background that this study tends to assess teachers' perception and use of Montessori Language Materials in Improving Language Achievement of Children with Speech Difficulties in Some Selected Schools in Lagos State.

The objectives of the study are to:

1. Examine teachers' perception of the impact of using Montessori Language Materials in improving the language achievement of children with speech difficulties in selected special needs schools in Lagos State.
2. Examine the extent to which teachers use Montessori Language Materials in teaching children with speech difficulties in selected special needs schools in Lagos State.

Research Questions

1. What is the teachers' perception of the impact of using Montessori Language Materials in improving the language achievement of children with speech difficulties in selected special needs schools in Lagos State?
2. To what extent do teachers use Montessori Language Materials in teaching children with speech difficulties in selected special needs schools in Lagos State?

Methodology

A descriptive survey research design was utilised in this study. The target population for this study consisted of all the children with speech difficulties in Lagos State. However, because the researcher could not reach all, it became important to sample those that were covered in this study. Specifically, the forty schools, which include both regular and special schools, constituted the study's sample. In the regular and special schools, the researcher sampled five teachers from each school, which aggregates the sample size to two hundred (200). A purposive sampling technique was used to select all the schools. The research instrument used in this study is a questionnaire. It is titled "Questionnaire on the Impact of Montessori Language Materials on the Language Achievement of Children with Speech Difficulties (QMLMLACSD). The questionnaire had three sections: A, B and C. Section A contained the bio data of the teachers, which included: gender, educational qualification, professional qualification, and years of teaching experience. Section B contained ten (10) items drawn from the research questions of the study relating to teachers' perception of the impact of using Montessori Language Materials in improving the language achievement of children with speech difficulties. Section C contained ten (10) items drawn from the research questions relating to the extent to which teachers use Montessori Language Materials in teaching children with speech difficulties. The instrument was validated by the research experts. Thereafter, twenty copies of the questionnaires were administered for the purpose of testing their reliability, and they yielded a reliability value of 0.73, indicating a high level of reliability. The researcher sought approval from the head of the school, and after approval was granted, the researcher proceeded to the classes that were used for the study to meet the teachers and explain the purpose of the visitation. Thereafter, an appointment was fixed for the following week to administer the questionnaires. The data collection duration was six weeks. The data was analysed and provided answers to the research questions using frequency counts, percentages, mean, and standard deviation. The software used was the Statistical Package for Social Sciences (SPSS) version 27.

Results

Research Question 1

What is the teachers' perception of the impact of using Montessori Language Materials in improving the language achievement of children with speech difficulties in selected special needs schools in Lagos State?

Table 1: **Teachers' Perception of the Impact of Using Montessori Language Materials in Improving the Language Achievement of Children with Speech Difficulties in Selected Special Needs Schools in Lagos State**

Items	SD	D	A	SA	Mean ($\bar{x}$)	Std. D.
The use of Montessori Language Materials enhances phonetic awareness in children with speech difficulties.	13 (6.5)	4 (2.0)	43 (21.5)	140 (70.0)	3.55	.83
Montessori Language Materials effectively support children with speech difficulties in improving their vocabulary.	117 (58.5)	48 (24.0)	12 (6.0)	23 (11.5)	1.71	1.01
Children with speech difficulties show greater engagement with language activities when using Montessori materials.	21 (10.5)	31 (15.5)	81 (40.5)	67 (33.3)	2.97	.96
Montessori Language Materials help in improving the pronunciation skills of children with speech difficulties.	92 (46.0)	84 (42.0)	7 (3.5)	17 (8.5)	1.75	.88
Montessori Language Materials promote independent learning among children with speech difficulties.	18 (9.0)	23 (11.5)	72 (36.0)	87 (43.5)	3.14	.95
Children with speech difficulties exhibit improved sentence formation skills through the use of Montessori Language Materials.	45 (22.5)	23 (11.5)	64 (32.0)	68 (34.0)	2.78	1.14
Montessori Language Materials are eff ective in reducing the frustration levels of children with speech difficulties during language learning.	61 (30.5)	42 (21.0)	67 (33.5)	30 (15.0)	2.33	1.07
The structured approach of Montessori Language Materials benefits children with speech difficulties in grasping grammatical concepts.	36 (18.0)	34 (17.0)	49 (24.6)	81 (40.5)	2.88	1.13
A noticeable improvement in the reading skills of children with speech difficulties was observed using Montessori Language Materials.	15 (7.5)	11 (5.5)	69 (34.5)	105 (52.5)	3.32	.88
Montessori Language Materials provide a conducive environment for children with speech difficulties to practice language skills.	10 (5.0)	11 (5.5)	49 (24.5)	130 (65.0)	3.50	.81
Weighted Average					**2.80**	

N = 200; Key: 1 = Strongly Disagree, **2** = Disagree, **3** = Agree, **4** = Strongly Agree
N = 200; Key: 1 = Strongly Disagree, **2** = Disagree, **3** = Agree, **4** = Strongly Agree
Decision Value: ***NegativePerception*** = 0.00-2.44, ***PositivePerception*** = 2.45-4.00

Table 1 shows teachers' perception of the impact of using Montessori Language Materials in improving the language achievement of children with speech difficulties in selected special needs schools in Lagos State. The table shows that the respondents strongly agreed with the following items: The use of Montessori Language Materials enhances phonetic awareness in children with speech difficulties (= 3.55), and Montessori Language Materials provide a conducive environment for children with speech difficulties to practice language skills (= 3.50). Again, it shows that the respondents agreed as follows: children with speech difficulties show greater engagement with language activities when using Montessori materials (= 2.97) Montessori Language Materials promote independent learning among children with speech difficulties (= 3.14), children with speech difficulties exhibit improved sentence formation skills through the use of Montessori Language Materials (= 2.78), the structured approach of Montessori Language Materials benefits children with speech difficulties in grasping grammatical concepts (= 2.88), and a noticeable improvement in the reading skills of children with speech difficulties was observed using Montessori Language Materials (= 3.32). However, the respondents disagreed to the following items: Montessori Language Materials effectively support children with speech difficulties in improving their vocabulary (= 1.71), Montessori Language Materials help in improving the pronunciation skills of children with speech difficulties (= 1.75), and Montessori Language Materials are effective in reducing the frustration levels of children with speech difficulties during language learning (= 2.33). In the light of the value of the weighted average (2.80 out of 4.00 maximum value that can be obtained), which falls within the decision value for positive perception, it can be concluded that teachers' perception of the impact of using Montessori Language Materials in improving the language achievement of children with speech difficulties in selected special needs schools in Lagos State is positive.

Research Question 2

To what extent do teachers use Montessori Language Materials in teaching children with speech difficulties in selected special needs schools in Lagos State?

Table 2:The Extent to which Teachers use Montessori Language Materials in Teaching Children with Speech Difficulties in Selected Special Needs Schools in Lagos State

Items	SD	D	A	SA	Mean (□)	Std. D.
The teacher uses Montessori language materials to support children with speech difficulties.	38 (19.0)	31 (15.5)	38 (19.0)	93 (46.5)	2.93	1.18
Montessori language materials are integrated into daily lessons for children with speech difficulties.	27 (13.5)	103 (51.5)	29 (14.5)	41 (20.5)	2.42	.96
The teacher adapts Montessori language materials to meet the specific needs of children with speech difficulties.	88 (44.0)	47 (23.5)	40 (20.0)	25 (12.5)	2.01	1.07
Montessori language materials help improve speech articulation in children with speech difficulties.	78 (39.0)	46 (23.0)	32 (16.0)	44 (22.0)	2.21	1.18
Montessori language materials are effective in engaging children with speech difficulties.	88 (44.0)	41 (20.5)	26 (13.0)	45 (22.5)	2.14	1.21

The teacher frequently uses Montessori phonetic materials to assist children with speech difficulties.	105 (52.5)	52 (26.0)	17 (8.5)	26 (13.0)	1.82	1.05
Montessori sandpaper letters are beneficial for children with speech difficulties in learning letter sounds.	86 (43.0)	59 (29.5)	32 (16.0)	23 (11.5)	1.96	1.03
The teacher incorporates Montessori language cards in activities for children with speech difficulties.	107 (53.5)	72 (36.0)	5 (2.5)	16 (8.0)	1.65	.87
Montessori movable alphabet is used to enhance speech development in children with speech difficulties.	97 (48.5)	72 (36.0)	14 (7.0)	17 (8.5)	1.76	.92
The teacher uses Montessori storytelling materials to encourage verbal expression in children with speech difficulties.	124 (62.0)	57 (28.5)	10 (5.0)	9 (4.5)	1.52	.79
Weighted Average					**2.04**	

Decision Value: ***Low*** = 0.00-2.44, ***High*** = 2.45-4.00

Table 2 shows the extent to which teachers use Montessori Language Materials in teaching children with speech difficulties in selected special needs schools in Lagos State. The table shows that the respondents strongly agreed that the use of Montessori Language Materials enhances phonetic awareness in children with speech difficulties ($\bar{x}$ = 2.93).It shows further that the respondents agreed as follows: Montessori language materials are integrated into daily lessons for children with speech difficulties ($\bar{x}$ = 2.42), the teacher adapts Montessori language materials to meet the specific needs of children with speech difficulties ($\bar{x}$ = 2.01), Montessori language materials help improve speech articulation in children with speech difficulties ($\bar{x}$ = 2.21), Montessori language materials are effective in engaging children with speech difficulties ($\bar{x}$ = 2.14), the teacher frequently uses Montessori phonetic materials to assist children with speech difficulties ($\bar{x}$ = 1.82), Montessori sandpaper letters are beneficial for children with speech difficulties in learning letter sounds ($\bar{x}$ = 1.96), the teacher incorporates Montessori language cards in activities for children with speech difficulties ($\bar{x}$ = 1.65), Montessori movable alphabet is used to enhance speech development in children with speech difficulties ($\bar{x}$ = 1.76), and the teacher uses Montessori storytelling materials to encourage verbal expression in children with speech difficulties ($\bar{x}$ = 1.52).In the light of the value of the weighted average (2.04 out of 4.00 maximum value that can be obtained), which falls within the decision value for low extent, it can be concluded that the extent to which teachers use Montessori Language Materials in teaching children with speech difficulties in selected special needs schools in Lagos State is low.

Discussion of Findings

The first finding of this study has shown that teachers' perception of the impact of using Montessori Language Materials in improving the language achievement of children with speech difficulties in selected special needs schools in Lagos State is positive. The probable reason for this finding could be attributed to the fact that the teachers have been using the aforementioned materials in the schools sampled. According to Ojo (2020), teachers observed that Montessori materials significantly fostered engagement and enhanced language skills, emphasising their potential for supporting language acquisition in children with unique speech needs. This perspective was further validated by Adeyemi (2021), whose study revealed that teachers widely regarded these materials as crucial in aiding speech development. Montessori Language Materials, as noted by teachers, offered multisensory experiences, catering to various learning styles, which contributed to a more inclusive and

effective learning environment for children with diverse language needs. Amadi and Okechukwu (2020) further highlighted that teachers perceived Montessori language materials as vital tools that support phonetic awareness and vocabulary acquisition, both essential for language development in children with speech challenges. Ibrahim (2022) supported these findings, noting a positive correlation between the use of Montessori language materials and improved speech outcomes.

The second finding from the study showed that **t**heextent to which teachers use Montessori Language Materials in teaching children with speech difficulties in selected special needs schools in Lagos State is low. There is no doubt about this finding that if the Montessori Language Materials are not being used, the extent of their usage would definitely be low. This result is in disagreement with that of Olowu (2021), who observed that while a significant majority of teachers recognised the value of Montessori language materials for supporting language development, only about 60% reported regularly integrating them into their teaching practices. Similarly, Nwankwo (2021) found that although teachers widely appreciated the effectiveness of these materials, only about half (50%) actively used them in daily lessons. This suggests that while awareness of the benefits is strong, other factors may be limiting consistent implementation. This negates Adediran and Kolawole's (2020) finding, which found that approximately 65% of teachers used Montessori language materials consistently, though their usage frequency varied based on teachers' levels of training and experience. This finding indicates that the low level of utilisation overall could be a result of practical constraints like training gaps and resource availability, which impact teachers' ability to incorporate Montessori materials as fully as desired. This points to a need for greater support, such as professional development and resource allocation, to enable more consistent use of Montessori language materials across classrooms.

Conclusion

In conclusion, the study has revealed that teachers in selected special needs schools in Lagos State hold a positive perception of the impact of Montessori Language Materials on improving the language achievement of children with speech difficulties. However, despite this positive outlook, the extent to which these materials are used was low due to challenges such as limited resources, inadequate training, and insufficient administrative support.

Recommendations -

Based on the findings from the study, the following practical recommendations were made:

1. In light of the first finding, school administrators should encourage continuous professional development programs focused on the Montessori method for language instruction. Regular workshops and training sessions on using Montessori Language Materials effectively should be organised to ensure teachers are equipped with the skills and confidence needed to implement these tools. Such training sessions should be facilitated by Montessori experts in leading Nigerian Universities that have Montesorri courses.
2. In light of the second finding, teachers should aim to utilise a variety of Montessori materials, including but not limited to phonetic letter boxes and sandpaper letters, to provide multisensory language experiences that support different learning styles. In addition, teachers should strive to adapt Montessori materials to meet the unique needs of each child with speech difficulties, creating an inclusive classroom atmosphere that promotes active engagement and positive language development.

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SUPPORTING VULNERABLE CHILDREN THROUGH JOLLY PHONICS AND READING DEVELOPMENT IN EARLY YEARS

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Abstract

Vulnerable children, particularly those from disadvantaged backgrounds, often face significant barriers in accessing quality education, leading to poor academic outcomes and perpetuating cycles of poverty. This study explores the impact of Jolly Phonics, a multisensory phonics approach, on reading development in early years (ages 3-5) among vulnerable children in Nigeria. A pre-test post-test experimental research design was adopted for the study. The sample consisted of 268 nursery pupils from five schools selected from the three senatorial districts of Akwa Ibom State. Two intact classes in each school were selected to form the experimental and control groups, with the Jolly Phonics as the treatment for the experimental groups. Two research questions were formulated to cover reading development (cognitive and linguistic) and to guide the study, and two null hypotheses were tested at 0.05 alpha level of 0.05. The data collected were analysed using means, independent t-test, analysis of covariance (ANCOVA) and the Burt test. The result reveals that Jolly Phonics was effective in enhancing the pupils' reading skills and phonetic awareness among vulnerable children. The experimental group gained from 3-29months reading age (3.3 – 4.5) in the Burst test. The t-test analysis shows a significant difference of 9.42 (df 266) between the post-test mean score of the experimental and control groups. There was also a significant difference of 3.40 (df 82) between the post-mean scores of the experimental groups in the urban and rural schools. Based on the findings of the study, recommendations were made, among which is the need to provide training for more educators and community workers to reach more vulnerable children.

Keywords*:* Jolly Phonics, Development, Reading Ability, Vulnerable Children, Linguistic

Introduction

The ability to make sense of written material is called reading. We read for various reasons and to acquire information. One of the most important responsibilities of pre-primary and primary schools has always been teaching children to read. To succeed in school and fulfil his or her responsibilities as a member of society in the future, every child must fully develop his or her reading skills. Reading is important for career success because it is the foundation of much of a person's enjoyment in life. If you have the necessary skills and are willing to put them to use, it opens up a world of amazing possibilities. Reading with skill opens the door to concepts and

information that can make one's life and the world better. It is impossible to overstate the significance of reading. Without the ability to read, it is much harder to fully participate in modern society and function competently. For some, this gateway is narrow, obstructed, or completely closed off.

Omojuwa (2015) summarises this by stating that functional literacy extends beyond learning and ensures a child's ability to read for survival even after primary school.

To ensure that they receive a solid foundation in literacy, vulnerable children, such as those from disadvantaged backgrounds, those with special needs, and those who are at risk of falling behind their peers, require specialised assistance. Jolly Phonics and reading readiness programmes can be extremely helpful in meeting these children's early needs.

The reading ability level of children is a significant milestone in their educational journey. Typically, children develop reading ability at different paces, but here are some general guidelines on what to expect at various levels:

- **Infancy (0-12 months):** Babies start recognising books and understanding that gestures and sounds convey meaning. They respond to stories and pictures, vocalising and patting the pictures.

-**Toddlers and Preschoolers (2-3 years):** At this stage, children start recognising letters and sounds. They engage in interactive learning, such as tracing letters, playing with playdough, and singing songs that emphasise letter sounds.

- **Early School Age (4-6 years):** Children begin to develop phonics and decoding skills. They learn sight words, match words with pictures, and predict story outcomes.

- **School Age (7-8 years):** Children build reading fluency and comprehension. They recognise sight words, read familiar stories aloud, and develop critical thinking skills.

- **Older Children (8-12 years): At this** stage, children become independent readers, exploring chapter books and developing comprehension skills.

This means that children who began pre-school at age four to six should be able to develop phonics and decoding awareness. However, every child develops at their own pace, and some may need more support than others (Etuk 2015). The revised Burt reading test (1974) has set a standard of children's reading age and the number of words a child can read at each given age.

Reading methods refer to the approaches and techniques used to teach reading skills to children. Looking at the Nigerian educational scene, where English, being the second language, is not frequently used in most homes, reading and speaking in English becomes a serious handicap.UdosenandUkpak (2005) stress the need for teachers to adopt effective approaches to teaching reading, as most pupils come to school without the slightest reading readiness for the school environment. Ekpo (1999) indicates that where English is used extensively, and reading materials and objects abound, children will likely display reading readiness, but where the opposite is the case, children will not show any form of reading readiness. According to her report, Ingham (1992), in support of this fact, stressed that without doubt, the economic status of a family correlates highly with the degree of a child's reading readiness.

Teachers may inadvertently worsen children's reading readiness due to a lack of phonics instruction. Insufficient or inadequate phonics teaching can hinder decoding skills (National Reading Panel, 2000). Relying too heavily on context and meaning can neglect phonetic skills (Ehri*et. al*., 2001). Also, failing to identify reading difficulties can lead to delayed support (Snow *et. al*., 1998) and using unproven methods can confuse children and hinder progress (Moats, 2007).

Thus, teachers need to adopt effective strategies to enable the learners to acquire learning skills. Research has shown that effective instruction can significantly impact reading achievement (Snow *et. al*., 1998; National Reading Panel, 2000;). By adopting evidence-based approaches, teachers can:

- Improve reading outcomes for diverse learners
- close the reading gap for struggling learners

- enhance learner engagement and motivation
- support long-term academic success
- Foxcroft and Chapple (2017) have listed some essential techniques to include:

Phonics-based approach: The phonics-based approach is an effective approach to teaching reading, particularly for early learners. Research has shown that systematic phonics instruction significantly improves reading accuracy, fluency, and comprehension (National Reading Panel, 2000). his approach emphasises the relationship between sounds and letters, enabling children to decode words effectively.

Multisensory Approach: The multisensory approach combines visual, auditory, and kinesthetic techniques to engage children and enhance learning. Studies have demonstrated that multisensory phonics programs improve reading skills, including phonemic awareness, decoding, and comprehension (Joshi *et. al*., 2002; Wernick &Caidarella, 2016). This approach is particularly effective for struggling readers and those with learning disabilities.

Whole Language approach: The whole language approach prioritises comprehension and meaning, encouraging children to read continuous texts to build vocabulary and fluency. While this approach has its advocates, research suggests that phonics-based instruction is more effective for early literacy development (Ehri*et. al*., 2001)

Reading problems in children are a significant concerns, affecting their academic and personal development. Ekpo (1999) indicates that in the children's reading process, their reading environment should be attractively decorated with visuals to stimulate them to read. Modern audio-visual media should no longer be held as supplementary enrichment aspects of teaching/learning events, but should form part of a school curriculum. In the absence of audio-visual media, well-illustrated, colourful storybooks could do the work of audio and visual if such materials are presented by an instructor who has adequate knowledge of processes.

1. Some impediments to children's ability to reach their reading age are as follows:

(i) Dyslexia: a learning disorder characterised by difficulties with phonological processing, decoding, and reading fluency (Lyon, 1995)

(ii) Reading comprehension difficulties

(iii) Phonemic awareness deficits

(iv) Fluency disorders

(v) Overcrowded classrooms make it difficult for teachers to provide individual support

(vi) Inadequate reading materials and resources

(vii) Language barriers, particularly in rural and northern areas

(viii) Socioeconomic factors, such as poverty and lack of access to books

(ix) Inadequate teacher training and support

(x) Insufficient funding for education

(xi) Poor infrastructure, including inadequate libraries and reading facilities

(xii) Corruption and mismanagement of education resources

(xiii) lock-stepping pupils through their class readers

(xiv) Adopting poor teaching methods

(xv) Lack of appropriate variation in the teaching approaches to reading. For example, the use of activities such as picture recognition, storytelling, card games, news reading, cartoon collection, posters, flash cards, role play, story club, reading competition, leisure reading, etc., can be incorporated into reading lessons for variety to generate interest (Edem, 2015).

(xvi) Lack of commitment on the part of the teachers due to poor job satisfaction.

2. Generally, researchers have clearly shown that the average Nigerian learner, whether at the primary, secondary or tertiary levels, cannot read or write fluently in English or in the Nigerian languages (Tinuoye, 1991 and Omojuwa, 2015). Most children who fail to read do so not because they are incapable of reading, but largely because of poor teaching approaches utilised. Primary school teachers in Nigeria depend mostly on the prescribed course materials to suit the learners' reading needs. Consequently, the learners are not provided with the right kinds of learning experiences to enable their acquisition of literacy skills that are compatible with the children's reading age. Therefore, this study seeks to investigate whether pupils reading age will improve significantly if they are taught with the synthetic phonics method. The specific objectives are to:

1. the effect of the post-test scores on pupils' reading ability, specifically to assess the degree to which post-TRST scores indicate improvement in reading ability in the experimental groups show variation in the study area; and
2. investigate the mean scores of pupils' reading ability in the experimental group vary across different school locations?

Research Questions

1. To what degree do the post-test mean scores of pupils' reading ability in the experimental groups show variation?
2. How do the mean scores of pupils' reading ability in the experimental group vary across different school locations?

Hypotheses

H01 There is no significant difference in the post-test mean scores of pupils' reading ability in the experimental and control groups.

H0 There is no significant difference in the post-test mean scores of pupils' reading ability In the experimental group across different school locations.

Methodology

Two government primary schools were deliberately chosen from each of the 3 senatorial districts in Akwa Ibom State for the Jolly Phonics pilot study in September, 2024, using a purposive sampling technique. The selection was based on the population of the pupils (i.e. if the school had enough pupils for both the experimental and control groups).

The Jolly Phonics research team conducted an initial 2-day training workshop for nursery school teachers from the experimental groups.

Additionally, the research team visited the schools to identify and designate the experimental and control groups. The population comprised all government Nursery Schools in Akwa Ibom State. The study initially had 108 participants in the experimental group and 116 in the control group. However, by the time of the final testing, the numbers had reduced to 84 participants in each group.

In September 2024, the research team administered a pre-test, using Burt's reading test, to the study participants. The Burt Reading Test is a standardised, individually administered reading assessment tool designed to measure a child's word recognition skills. The test consists of 110 words, arranged in increasing order of difficulty. A child reads the words aloud until they incorrectly read 10 consecutive words. The child's score is converted to a

reading age based on established norms. The test aims to provide teachers with valuable information to inform instructional decisions, identify reading difficulties, and monitor progress. Hence, a child who can read two words from the list is adjudged to be at the reading age of 5 years, 3 months. As the subjects read, the correct options were circled with blue and red ballpoints at the pre-test and post-test, respectively, to enhance easy identification of the subject's performance.

There was a one-day refresher workshop where areas of difficulty, like blending the magic-e, among other things were re-taught to the teachers. The exercise lasted for 36 weeks. At the end of the 36 weeks, there was a post-test still on Burt's Reading Test.

The Jolly Phonics Finger Big Books introduce the 42 main letter sounds in English stories, actions, pictures and sounds to introduce children to phonics. Each book focuses on a specific set of sounds, and the finger action helps children remember the sounds and blend them to form words. The books provide several options to teach early literacy skills for language, reading and writing. The Finger Phonics Big Book 1-7 are large, colourful books. The books are typically used in conjunction with the Jolly Phonics scheme, which is as follows:

Book 1	has the sounds	s at ip n
Book 2	has the sounds	ck eh rm d
Book 3	"	g o u l g b
4	"	ai j ooie ee or
5	"	z w ng v oo or
6	"	y x ch sh thth
7	"	quou oi ur er ar

2. Jolly Phonics Word Freeze: The Jolly Phonics Word Freeze is a fun activity designed to help children practice reading and spelling skills. The book helps build pupils' confidence in reading and spelling words using Polly Phonics. The teacher says a word, and pupils have to read it, say it, and then hold their position until the teacher says 'thaw' or gives the next word. This activity encourages active participation, improves reading fluency, and reinforces phonics skills in a fun, engaging way.

3. **Jolly Phonics Tricky Word Wall Flowers:** Jolly Phonics Tricky Word Flowers are a good resource for teaching children to read and spell tricky words. These colourful flowers feature 72 tricky words, divided into six sets of 12 words each, and are designed to be displayed on a wall or board. Each set comes in a different colour, making it easy for children to identify the words they want to learn. The flowers are 13.5cm across and are made of sturdy cardboard, perfect for withstanding little hands. They can be displayed on the walls of the classroom and used to practice reading and spelling.

4. Jolly Phonics Alternative Spelling Poster: The colourful poster shows different spellings of nine vowels, along with sample words and illustrations. For example, the 'ai' sound is represented by 'ai' in 'rain' in 'day' and 'a-e' in snake.

5. **The Alphabet Poster:** This poster displays the 26 letters of the alphabet in order, with arrows indicating correct formation. The letters are arranged in four colour groups, matching the Jolly Dictionary, to help children learn dictionary skills.

6. **The Phonics Handbook:** The Phonics Handbook is a comprehensive guide to teaching phonics, specifically designed for educators and parents using the Jolly Phonics programme, with over 100 large, clear photocopies of worksheets for the children. The handbook is designed to enhance teaching in the following five basic skills:

- Learning the letter words
- Learning letter formation
- Blending for reading

- Identifying the sounds in words for writing
- Tricky words, irregular words

The handbook provides a structured multi-sensory, synthetic phonics and lesson planning experience for young children. Each process of pronouncing and reading sounds is prescribed along with pictures, flash cards, action games and stories to illustrate the sounds. This is further supported by additional phonics information on the sound.

Data Analysis: The data collected were analysed using means, standard deviation, Burt's Reading Test, Independent t-test and analysis of covariance (ANCOVA). The results are shown below, starting with the research question 1.

Research Question 1

To what extent do post-test mean scores of pupils' reading ability in the experimental and control groups differ?

To answer this question, the Burt Reading was applied in tables 1a-e.

Table 1a: Burt's Reading Test Analysis of Pupils' Reading Ability in School 1

School	Experimental Group				Control Groups			
	Pre-Test		Post-Test		Pre-Test		Post-Test	
	NO	RA	NO	RA	NO	RA	NO	RA
School 1	15	5 or 5	1	5.4	15	5 or 5.8	13	4 or 5.8
			1	5.4				
			3	5.6				
			2	5.5				
			2	5.6				
			1	5.8				
			1	5.7				
			3	5.4				
			1	5.6				

NO= Number of Pupils
RA = Reading Age

Table 1a above shows that all the pupils, both in experimental and control groups in school 1 were below or at the reading age of 5 years before the treatment. After the treatment, there was no improvement in the control group, whereas the experimental group had enhanced the reading ability of 13 pupils at the range of 5 years 4 months to 5 years 8 months. Only 2 could not make any appreciable improvement in the experimental group.

Table 1b: Burt's Reading Test Analysis of Pupils' Reading Ability in School 2

SCHOOL	EXPERIMENTAL GROUP				**CONTROL GROUPS**			
	Pre-Test		**Post-Test**		**Pre-Test**		**Post-Test**	
SCHOOL 1	NO	RA	NO	RA	NO	RA	NO	RA
	18	Below 5 or 5	6	Below 5 or 5	18	Below 5 or 5	18	Below 5 or 5
			2					
			2					
			1					
			2					
			1					
			1					
			2					
			1					

For school 2, all the pupils in the two groups were reading below or about the age of 5. After the study, there was no improvement for the control group whereas the treatment had favoured 12 pupils out of 18 pupils in the experimental group at the range of 4 years 3 months to 5 years 1 month.

Table 1c: Burt's Reading Test Analysis of Pupils' Reading Ability in School 3

School	Experimental Groups				**Control Groups**			
	Pre-Test		Post-Test		Pre-Test		Post-Test	
School 1	N	RA	NO	RA	NO	RA	NO	RA
	13	Below 5 or 5	13	Below 5 or 5	13	Below 5 or 5	13	Below 5 or 5
			4					
			3					
			1					
			1					
			1					
			2					
			1					

In school 3, all the pupils were reading at below 5 or 5 reading age before the treatment, after the treatment, 8 pupils out of 13 in the experimental group were reading at the age of 4 years and 3 months to 5 years. The gain was between 3 and 14 months whereas, the control group, only 2 pupils out of the 13 gained 13 months reading age (RA).

Table 1d: Burt's Reading Test Analysis of Pupils' Reading Ability in School 4

SCHOOL	EXPERIMENTAL GROUP				CONTROL GROUPS			
	Pre-Test		Post-Test		Pre-Test		Post-Test	
SCHOOL 1	NO	RA	NO	RA	NO	RA	NO	RA
	18	Below 5 or 5	2	Below 5 or 5	18	Below 5 or 5	9	Below 5 or 5
			1	4.5				
			2	4.4				
			4	4.4				
			5	4.9				
			1	5.1				
			1	5.4				
			2	5.4				

At the beginning of the study all the pupils in school 4 were below or at the reading age of 5 years. After the study, all the experimental groups had read at between 4 years and 4 months and 5 years 4 months, a gain of between 3 months and 17 months range while 4 pupils out of 18 in the control group could read up to 5 years and the other had no improvement.

Table 1e: Burt's Reading Test Analysis of Pupils' Reading Ability in School 5

School	Experimental Group				Control Group			
	Pr—Test		Post-Test		Pre-Test		Post-Test	
School 1	No	RA	No	RA	No	RA	NO	RA
	20	Below 5 or 5		Below 5 or 5	22	Below 5 or 5		Below 5 or 5
			1	3.3				
			1	3.5				
			1	3.6				
			2	3.7				
			2	3.8				
			2	3.9				
			2	3.10				
			3	3.11				
			2	4.1				
			2	4.2				
			1	4.3				
			1	4.8				

The above table shows that before treatment, 20 pupils in the experimental group were below 5 or were at 5 years reading age and 2 could read at 5 years, 3 months. After the study, all the pupils had made improvement at the range of 4 months to to 5 years 5 months.
To further illustrate the level of pupils at the initial stage and the extent of improvement made, descriptive statistics were used to make the picture apt.

Table 2: Mean and Standard Deviation (SD) Analysis Showing Pupils' Reading Level Before and After the Treatment.

S/N	Schools	Treatment	N	Pre-Test mean	SD	Post-Test mean	SD
1	1	Exp. control	15 15	0.13 0.06	4.91 0.26	4.91 .31	2.85 .35
2	2	Exp. control	20 20	0.10 0.00	0.31 0.00	5.10 0.05	4.38 .22
3	3	Exp. control	14 14	0.00 007	0.00 0.27	4.64 .50	5.60 .76
4	4	Exp. control	13 13	0.00 0.08	0.00 0.28	10.00 77	7.54 1.09
5	5	Exp. control	22 22	0.32 0.00	0.65 0.00	15.18 1.36	8.26 1.87
			168	.13 0.04	.40 .19	8.39 .60	2.49 1.20

The post mean scores of the experimental groups far outweigh those of their counterparts in the control groups. The pre-test mean score reveals that both groups could not at the initial stage and did not differ much.
To determine whether the difference in the post mean scores were significant, an independent t-test analysis was employed to test the two hypotheses.
H**o1:** There is no significant difference in the post test means score of pupil's reading ability in the experimental and control groups.

Table 3: Independent t-test Analysis of the Difference in Post-test Mean Scores of Pupils Exposed to Jolly Phonics and Those in the Traditional Method.

Variables	N X	X	SD	t	Sig
Jolly Phonics Y	84	8.39	.49.99	9.42	
Traditional Method	84	.60	1.20		

[x]p<.05, df = 166; critical t = 1.98

The table reveals that the calculated is 9.42, which is greater than critical t-test of 1.98 with degree of freedom 19=66 at 0.95 alpha level. On the basis of this result, the null hypothesis 1 was rejected. We therefore conclude that there was no significant post-test mean difference between the two groups.

Ho2: There is no significant difference in the post-test mean score of the pupils reading ability of the experimental groups by school location.

Table 4: Independent t-test Analysis of the Difference in the Post-test Mean Scores of theEffects of Treatment in Urban and Rural Schools.

Variables	Location of Schools	N	X	SD
Experimental	Urban	55	10.20	8.11
	Rural	29	4.78	4.31
Control	Urban	556	.75	1.40
	Rural	29	.31	.60
Total	Urban	110	5.52	7.52
	Rural	58	2.55	3.80

[x]p< 0.05; df = 166; crit. T = 1.98

The result in table 4 reveals that the t-cal (3.40; df = 82) was greater than cri.t of 1.99. The null hypothesis 2 was therefore rejected. It was concluded that there was a significant difference in the post-test mean scores of the experimental groups in the urban and rural schools. A further analysis was done to remove the effect of entry level on the respondents as shown in Table 5:

Table 5: Analysis of Co-Variance (ANCOVA) on the Effects of Treatment on Pupils' Reading Ability

Source	Type lll Sum of Squares	Df	Mean Square	F	Sig.
Corrected Model	2561.5467	2	1280.773	44.377	000
Intercept	3074.166	1	3074.166	106.504	000
Re-test	10.165	1	10.165	.352	.554
Treatment	2445.970	1	2554.970	84.740	000
Error	4762.633	165	28.864		
Total	107.4.400	168			
Corrected Total	7324.180	167			

R squared = 3.50 (adjusted R Squared = 342)
The table shows an F –ration of 84.740. This indicates that treatment effect was significant and that the experimental group's performance was as a result of the potentialities of Jolly Phonics.

Discussion of Findings
Tables 1a, b, c, d, and e indicate that the children in both experimental and control groups lacked any form of reading readiness, as there is no indication of any reading ability before treatment. The only reading ability was indicated by two children from school five who were at the reading age of 5 years before treatment. This agrees with Udosen and Ukpak (2015) who confirm that most pupils come to school without any slight reading readiness, and as such, the teacher needs to adopt the appropriate strategies to enable the learners acquire reading skills.
Furthermore, looking at the experimental and control groups after treatment, there is a marked improvement in children's reading ability in the experimental group, while the control group still lacks a significant improvement in reading ability. For instance, out of 15 children that participated in the experimental study from school 1 (Table 1a), all of them gained between four and nine months on their reading age. None of the children in the control group gained anything. The highest performance from the experimental groups can be seen in school 5 (Table 1e). Out of 20 children, 8 gained between 1 year, 1 month and 2 years, 5 months on their reading age. For the control groups, 17 children gained nothing on their reading age, while 5 out of them gained 3 months. This study corroborates Ekpo's (2000), who asserted that children exposed to favourable conditions where reading materials abound will display reading readiness and subsequently improve reading ability, while the reverse is the case where no materials exist.
As shown in Table 2, there was no marked difference in the pre-test mean scores for both experimental and control groups. A closer look at the table reveals that the post-test means scores for the experimental groups outweigh those of their counterpart in the control groups. The significant difference in performance of the experimental group over the control group, as indicated by the significant t-calculated (9.42) in Table 3, can be explained by the fact that the children in the experimental group were exposed to Jolly phonics, a stimulating and exciting strategy that enhanced reading ability. Foxcroft & Chappel (2017) observed that the synthetic phonics-based approach has the potential to impact children's reading ability as it provides a variety of reading experiences to them. Edem (2015) further agrees that the lack of variation, as in the case of the traditional

classroom situation, does not generate interest in the children's desire to read.
Table 4 reveals that the t-cal is greater than the t-cri, which further confirms that there is a significant difference in the performance of children in the urban and rural locations. The children in the urban locations with a standard deviation of 7.52 for the urban and 3.80 for the rural location confirm the assertion by Ekpo (2000) and Ingham (2008) that the socio-economic status of a family correlates highly with the degree of the child's reading success. The attrition rate experienced in the study is further proof that children from rural areas are greatly hampered in their reading ability by poverty. Most pupils dropped out of the study because their parents could not provide adequate encouragement and material sustenance for the children's interest to be sustained in school. Foxcroft & Chapple (2017) list parents' involvement in supporting children's reading ability as an effective strategy for improved reading performance.

Conclusion

The study concluded that the environment plays a vital role in learning. Thus, pupils from rural areas not only faced the challenge of not being able to access quality reading instruction and resources, but they also looked wretched and sickly and could not achieve as much as those in the urban areas.

Recommendations

Based on the findings of the study, the following were recommended:

1. Provide training for more educators and community workers to reach more vulnerable children.
2. Incorporate Jolly Phonics into the Nigerian early years education curriculum.
3. Regularly assess children's progress and adjust the intervention as needed.
4. Engage parents and communities in supporting early years education.
5. Address underlying issues, such as poverty and lack of resources, to ensure sustainability.
6. Conduct longitudinal studies to assess long-term impact and explore adaptations for different contexts.

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TEACHERS PERCEIVED INFLUENCE OF COLLABORATIVE LEARNING STRATEGIES ONPRESCHOOLERS' COGNITIVE SKILLS IN MUSHINLOCALGOVERNMENT, LAGOS STATE

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Abstract
Collaborative learning, characterised by peer interaction and group-based activities, is increasingly recognised as an effective pedagogical approach for fostering multiple aspects of child development. This study investigated the perceived influence of collaborative learning strategies on the cognitive skills of early childhood learners in the Mushin Local Government Area, Lagos State. A descriptive research design was employed, and data were collected from 100 teachers (50 public, 50 private) using a researcher-developed instrument, the Teachers' Perception of Collaborative Learning Strategy Questionnaire (TPCLSQ). Data were analysed using descriptive statistics (frequency counts, percentages, mean, and standard deviation) and inferential statistics (independent t-test). Findings revealed a significant difference in the implementation of collaborative learning strategies based on school type. Public school teachers recorded a higher mean score (M = 3.48, SD = 0.50) than private school teachers (M = 3.08, SD = 0.60), with a t-value of 4.56 and p-value of 0.000, significant at the 0.05 level. The study concludes that public school teachers implement collaborative learning strategies more consistently, highlighting disparities in instructional practices across school types. The study recommended that collaborative learning be promoted in schools through training programs and supportive environments. This would encourage teachers to consistently apply these strategies in the classroom. In addition, parents should actively support collaborative activities both at home and in school.
Keywords*:* Collaborative learning, Cognitive skills, Preschoolers, Teachers' Perceived Influence.

Introduction

Early childhood is universally recognised as a critical period in a child's development. During these formative years, children undergo significant cognitive, social, emotional, and physical growth, laying the foundation for lifelong learning and wellbeing. The rapid brain development at this crucial stage has increasingly become the point of reference for global educational discourse, particularly regarding the role of collaborative learning in promoting critical thinking, memory, and language development among young learners. Across the globe, organisations like UNICEF (2024), UNESCO (2024), and the OECD (2023) emphasise the role of social interaction in shaping early learning outcomes.

Collaborative learning involves children working in groups to solve problems, communicate ideas, and complete tasks. It is recognised for stimulating intellectual growth and enhancing executive function (Dong *et al.,*2024). This method contrasts with traditional teacher-centred approaches that often emphasise rote memorisation and individual performance. This innovative learning strategy leverages social engagement to facilitate higher-order thinking even among young children. It further enhances critical cognitive domains such as attention, reasoning, and verbal expression among preschoolers (Purpura & Schmitt, 2018). The unique benefit of collaborative learning was discovered in research from East and West Africa. This research supports

the notion that when children engage in group-based activities, they perform better in tasks requiring verbal reasoning, memory, and social problem-solving (Garaigordobil *et al.,* 2022). Teachers' perception refers to the way educators interpret, understand, and form beliefs about teaching practices based on professional experiences, training, and classroom involvement. In this context, it reflects the view of teachers on the effectiveness of collaborative learning strategies on children's cognitive development. These perceptions guide teachers' decisions and ultimately determine whether it should be implemented in the classroom.

Oftentimes, despite the knowledge and support of theories in existence, teachers may adopt or reject them depending on how useful or manageable they are within their specific school environment. (UNICEF, 2024). Perception is divided into three: the positive, conditional or mixed, critical or sceptical. Teachers with positive perception believe that collaborative learning foster creative thinking, problem-solving and retention if properly implemented, while teachers with conditional or mixed perception believe that the success of collaborative learning depends on teacher training, planning, class size and resource availability. The critical or sceptical teachers perceive collaborative learning as chaotic or unproductive in an under-resourced and overcrowded classroom environment (Vakili *et al.,* 2024).

The study is grounded in the constructivist theory by Lev Vygotsky. His view is that cognitive development is fostered through social interaction and guided support within a learner's Zone of Proximal Development (ZPD). This theory validates the use of peer-based collaboration as a cognitive scaffold in early childhood. Recent studies validate Vygotsky's model, demonstrating how structured peer interaction fosters memory, language, and problem-solving skills in preschoolers, particularly when facilitated by a knowledgeable teacher (Dong *et al.,*2024; Lee *et al.,* 2023). This positions collaborative learning not just as a technique, but as a theoretically sound cognitive strategy.

This study focuses on Mushin local government area, a densely populated, resource-constrained part of Lagos, to investigate teachers' perceived influence of collaborative learning strategies on preschoolers' cognitive skills. Despite the growing support for collaborative learning at policy and research levels, its effectiveness in Nigerian preschools largely depends on the teacher's role in facilitating it. Its implementation has remained inconsistent, especially in urban regions like Lagos, where the integration of collaborative learning into preschool classrooms is both an opportunity and a challenge. (Edeh & Nwachukwu, 2024). While policies such as the revised National Policy on Education (2024) support play-based and interactive approaches, practical classroom implementation depends heavily on teachers' perceptions, beliefs, and levels of training (Duguryil*et al.,* 2025).

This study focuses on Mushin local government area, a densely populated, resource-constrained part of Lagos, to investigate teachers' perceived influence of collaborative learning strategies on preschoolers' cognitive skills. Despite the growing support for collaborative learning at policy and research levels, its effectiveness in Nigerian preschools largely depends on the teacher's role in facilitating it. Its implementation has remained inconsistent especially in urban regions like Lagos where the integration of collaborative learning into preschool classrooms is both an opportunity and a challenge. (Edeh & Nwachukwu, 2024). While policies such as the revised National Policy on Education (2024) support play-based and interactive approaches, practical classroom implementation depends heavily on teachers' perceptions, beliefs, and levels of training (Duguryil *et. al.,* 2025).

Moreover, the quality of teacher training in Nigeria has been a persistent concern. Many early childhood educators lack the necessary training in contemporary teaching methodologies, including collaborative learning (Eze & Adekola, 2022). This gap in professional development is compounded by low levels of motivation among teachers, who often work in challenging conditions with limited support. Consequently, the potential benefits of collaborative learning are not fully realized in many Nigerian classrooms, particularly in under-resourced areas like Mushin. Given the challenges facing early childhood education in Mushin, collaborative learning offers a promising approach to improving educational outcomes. By fostering a sense of community and shared responsibility among students, collaborative learning can help mitigate some of the negative effects of overcrowded classrooms and limited resources. For example, when students work together in small groups, they can support each other's learning, share resources, and provide peer feedback, reducing the burden on teachers and enhancing the overall learning experience (Edeh & Nwachukwu, 2024).

While global studies have explored collaborative learning's benefits, few have specifically examined teachers'

perceptions in urban Nigerian preschool contexts. The perspectives of teachers who facilitate teaching and learning remain underexplored (Yusuf & Adekunle, 2023). This study, therefore, aims to fill this gap by investigating teachers' perceived influence of collaborative learning strategies on cognitive skills of preschoolers in Mushin Local Government, Lagos State.

Purpose of the Study

Themain purpose of this study is to investigate how preschool teachers in Mushin Local Government Area perceive the influence of collaborative learning strategies on the cognitive skills of pupils in their classrooms. The following objectives are set:

1. Examine the level of teachers' perception of collaborative learning strategies on the cognitive skills of preschoolers in Mushin Local Government Area.
2. Assess the extent to which pre-school teachers implement collaborative learning strategies in their classrooms in the Mushin Local Government Area.
3. Determine the difference in teachers' perception of collaborative learning on cognitive skills of preschoolers in Mushin Local Government Area based on school type.
4. ascertainthe difference in pre-school teachers' implementation of collaborative learning strategy in Mushin Local Government area based on school type.

Research Questions

The following questions are raised for the study;

1. What is the level of teachers' perception of collaborative learning strategies on the cognitive skills of preschoolers in the Mushin Local Government Area?
2. To what extent do pre-school teachers implement collaborative learning strategies on the cognitive skills of preschoolers in the Mushin Local Government Area?

Research Hypotheses

The following hypotheses are formulated and tested in this study;

1. There is no significant difference in teachers' perception of collaborative learning on cognitive skills of preschoolers in the Mushin Local Government Area based on school type
2. There is no significant difference in pre-school teachers' implementation of collaborative learning strategies on the cognitive skills of preschoolers in Mushin Local Government Area based on school type

Methodology

This study adopted a descriptive research design method. This enabled the researcher to describe the characteristics of the respondents. The population of this study comprised all primary school teachers in both public and private schools in the Mushin Local Government Area. 100 respondents were selected using a simple random sampling technique. 50 respondents were selected from public school and 50 respondents were selected from private schools. An instrument tagged Teacher Perception of Collaborative Learning Strategy Questionnaire (TPCLSQ), developed by the researcher, was used for data collection. The instrument consists of three sections A, B and C. Section A comprised demographic variable of the respondents while section B consisted 10 items on teachers' perception of collaborative learning strategy on a four (4) point Likert type scale using Strongly Agree (SA) 4, Agree (A) 3, Strongly Disagree (SD) 2, and Disagree (SD) 1 and Section C consisted 5 items on teachers' implementation of collaborative learning strategies on a 4-point Likert scale of Always, Often, Sometimes and Never. The instrument was validated by expert in early childhood education studies. The data were analysed using descriptive statistics and inferential statistical tools.

Results

This chapter presentsthe analysis of data collected in this research. Data were obtained from self-administered questionnaires to a sample of 100 primary school teachers in both public and private schools in Mushin l Local Government Area, Lagos State. Percentage and frequency count were used to analyse the bio-data, while the independent t-test statistical tool was adopted to test the null hypotheses formulated in this study. All the hypotheses were tested at the 0.05 level of significance.

Section A

Demographic Variable	Category	Frequency (n)	Percentage (%)
Type of School	Public	50	50.0%
	Private	50	50.0%
Total		100	**100**

A total of 100 primary school teachers were surveyed in Mushin Local Government Area, with equal representation from public and private schools. This balance ensures unbiased data collection and provides a foundation for comparing teachers' perceptions and use of collaborative learning strategies across both settings.

Research Questions:

In this section, the two research questions asked were answered

Question One: What is the level of teachers' perception of collaborative learning strategies on cognitive skills of preschoolers in Mushin Local Government area?

Table 2

Frequency and Percentage Distribution of Teachers' Perceptions of Collaborative Learning on Preschoolers' Cognitive Skills in Mushin LGA

S/N	Item	SA	A	SD	D	%A	%D	Remark
1.	Collaborative learning improves pupils' critical thinking skills.	71 71%	26 26%	1 1%	2 2%	97	3	Agree
2.	Group discussions help pupils develop better problem-solving abilities.	65 65%	26 26%	8 8%	1 1%	91	9	Agree
3.	Collaborative activities enhance pupils' creativity and idea generation.	74 74%	21 21%	3 3%	2 2%	95	5	Agree

4	Working in groups helps pupils develop better communication skills.	80 80%	20 20%		– –	100	0	Agree
5	Collaborative learning encourages pupils to ask more questions.	77 77%	23 23%	– –	– –	100	0	Agree
6	Working in groups helps pupils apply knowledge to real-life situations.	70 70%	30 30%	– –	– –	100	0	Agree
7	Pupils develop better reasoning skills through group activities.	71 71%	29 29%	– –	– –	100	0	Agree
8	Pupils are more creative when working in groups compared to individual tasks.	85 85%	15 15%	– –	– –	100	0	Agree
9	Pupils improve their memory retention through peer explanations.	88 88%	12 12%	– –	– –	100	0	Agree
10	Collaborative learning supports pupils in developing metacognitive skills (thinking about their own	60 60%	18 18%	5 5%	5 5%	78	12	Agree

Table 2 presents the frequency and percentage distribution of teachers' perceptions regarding the impact of collaborative learning strategies on preschoolers' cognitive skills in Mushin LGA. Overall, teachers demonstrated strong agreement that collaborative learning enhances cognitive development. Items 1–3 indicate very high agreement (91–97%), while Items 4–9 show perfect or near-perfect consensus (100%). Item 10 had slightly more variation, with 78% agreement and 12% disagreement. All items were rated as "Agree," reflecting a positive perception of collaborative learning effectiveness.

Question Two: To what extent do pre-school teachers implement collaborative learning strategies in cognitive skills of preschoolers 'in Mushin Local Government area?

Table 3

Frequency and Percentage Distribution of Preschool Teachers' Implementation of Collaborative Learning Strategies on Cognitive Skills in Mushin LGA

S/N	Implementation Of Collaborative Learning Strategy	Always	Often	Sometimes	Never	%Always + Often	%Sometimes + Never	Remark
1.	I design group activities that encourage problem - solving among preschoolers.	59 59%	17 17%	12 12%	12 12%	76	24	Agree
2.	I facilitate peer discussions to help children explain their thinking.	64 64%	10 10%	20 20%	6 6%	74	26	Agree
3.	I use collaborative games/puzzles to enhance memory and reasoning skills.	57 57%	13 13%	19 19%	11 11%	70	30	Agree
4.	I assign group works that require creative thinking (e.g., storytelling, building block s).	59 59%	20 20%	15 15%	6 6%	79	21	Agree
5.	I encourage children to work together to compare ideas and find solutions.	60 60%	16 16%	24 24%	– –	76	24	Agree

Table 3 displays the frequency and percentage distribution of preschool teachers' implementation of collaborative learning strategies to enhance cognitive skills in Mushin LGA. Overall, teachers reported a high level of implementation, with 70–79% consistently applying strategies such as group activities, peer discussions, collaborative games, and creative group work. Although a smaller proportion occasionally or never used these strategies, all items were marked "Agree," indicating that collaborative learning is positively integrated into classroom practices in the study area.

Hypotheses Testing

The results are presented in tables. Table 4-5 shows the results of the statistical tests of hypotheses 1-2

Hypothesis One

H_o1: There is no significant difference in teachers' perception of collaborative learning on cognitive skills of preschoolers in Mushin Local Government area based on school type

Table 4

T-test Analysison Teachers' Perception of Collaborative Learning on Cognitive Skills of Preschoolers in Mushin LGAon School Type

Group	N	Mean Perception	SD	Df	t-value	p-value	Decision
Public School	100	3.42	0.50	98	3.75	0.0003	Reject H
Private School		3.02	0.60				

Table 4 presents the independent t-test analysis on the significant difference in teachers' perception of collaborative learning on the cognitive skills of preschoolers based on school type in Mushin Local Government Area. The result shows that public school teachers had a mean perception score of 3.42 with a standard deviation of 0.50, while private school teachers had a lower mean score of 3.02 with a standard deviation of 0.60. The calculated t-value of 3.75 with a p-value of 0.0003 is less than the significance level of 0.05. This leads to the rejection of the null hypothesis (H_{01}), indicating a statistically significant difference in the perception of collaborative learning between public and private school teachers. The result suggests that public school teachers have a more positive perception of the impact of collaborative learning on preschoolers' cognitive skills than their private school counterparts.

Hypothesis Two

H_o2: There is no significant difference in pre-school teachers' implementation of collaborative learning strategies on cognitive skills of preschoolers in Mushin LGA based on school type

Table 5

T-test Analysis on Pre-School Teachers' Implementation of Collaborative Learning Strategies on Cognitive Skills of Preschoolers in Mushin LGA

Group	N	Mean Implementation	SD	Df	t-value	p-value	Decision
Public School	100	3.48	0.50	98	4.56	0.0000	Reject H
Private School		3.08	0.60				

Table 5 presents the independent t-test analysis on the significant difference in the implementation of collaborative learning strategies among pre-school teachers based on school type in Mushin Local Government Area. Public school teachers recorded a higher mean implementation score of 3.48 with a standard deviation of 0.50, while private school teachers had a lower mean score of 3.08 and a standard deviation of 0.60. The t-value of 4.56 and p-value of 0.0000 indicate a statistically significant difference at the 0.05 level. Consequently, the null hypothesis (H_{02}) is rejected. This suggests that public school teachers implement collaborative learning strategies more frequently and consistently than private school teachers. The finding highlights a disparity in instructional practices between the two school types, indicating that public schools may be more committed or better equipped to adopt collaborative learning methods to enhance cognitive skill development among preschoolers.

Discussion of Findings

The study revealed a significant difference in teachers' perceptions of collaborative learning on preschoolers' cognitive skills, based on school type, with public school teachers showing more positive perceptions. This finding aligns with recent research by Oyekanmi and Adedoyin (2023), who reported that public school teachers tend to embrace learner-centred approaches more actively due to targeted government training and curriculum reforms. Similarly, Eze and Adekola (2022) observed that public school systems in urban areas are increasingly adopting collaborative instructional models to improve critical thinking and problem-solving skills in early learners. Moreover, studies by Nwankwo and Hassan (2021) suggest that teacher perception is strongly influenced by school policies, exposure to training, and peer collaboration factors, which are more emphasised in public institutions. The result supports Vygotsky's Social Constructivist Theory, which promotes social interaction and shared learning experiences as foundations for cognitive development. Therefore, school type significantly shapes how collaborative learning is valued by teachers. Contrary to the finding, Okoro and Fatoba (2021) found no significant difference in teacher perceptions across school types, noting that both public and private educators hold similar beliefs about collaborative learning due to widespread digital access and training resources. In their view, professional development programs and educational standards have unified instructional expectations, especially in urban centres like Lagos, thus minimising perceptual differences between public and private school teachers.

The study found a significant difference in the implementation of collaborative learning strategies between public and private school teachers, with public school educators demonstrating higher levels of implementation. This aligns with the findings of Afolabi and Yusuf (2023), who emphasised that public school teachers are increasingly monitored and evaluated on curriculum delivery, including group-based strategies that foster higher-order thinking. Government programs through organisations such as UBEC and SUBEB provide public schools with the resources and training needed to implement collaborative teaching. Furthermore, Edeh and Nwachukwu (2024) reported that public school environments often support structured group work, encouraging consistent use of collaborative methods. The finding also reflects the Institutional Support Theory, which holds that access to professional development, peer collaboration, and instructional resources influences implementation quality. Hence, school type, particularly in relation to structural support and training opportunities, significantly impacts how collaborative learning strategies are applied in classrooms. In contrast, some studies argue that implementation is not significantly affected by school type. According to Ubah and Salami (2022), both public and private preschool teachers in Lagos implement collaborative strategies at similar levels, driven by shared access to digital tools, standardised curriculum goals, and increased awareness of 21st-century skills. They contend that teacher motivation and personal initiative outweigh institutional affiliation in determining instructional methods, reducing the gap between both school types.

Conclusion

This study examined the level of teachers' perception and the extent of implementation of collaborative learning strategies on the cognitive skills of preschoolers in Mushin Local Government Area, Lagos State. The findings revealed a high level of positive perception among teachers. Most respondents agreed that collaborative learning enhances critical thinking, creativity, problem-solving, and communication skills among preschool

children. These results affirm the effectiveness of collaborative methods as a pedagogical approach in early childhood education, highlighting its potential to boost essential cognitive competencies in learners.
Furthermore, the study assessed how often these strategies are implemented in classrooms. The findings showed that while a significant number of teachers reported regular use of collaborative learning techniques such as group activities, discussions, and games, there is still variation in practice, which may be influenced by factors like school structure, access to resources, and institutional support. However, the majority of teachers showed commitment to engaging learners through collaborative approaches. Finally, significant differences were found between public and private school teachers in both perception and implementation of collaborative learning. Public school teachers showed a higher mean in both perception and practice. This may be attributed to access to government training programs and collaborative policy structures. The findings emphasize the need for a unified approach to training and resource provision to ensure equitable use of collaborative learning strategies across all school types.

Recommendations

1. Government and education authorities should design and implement inclusive training programs that promote collaborative learning strategies across both public and private schools. Special attention should be given to integrating these strategies into the early childhood education curriculum to standardise best practices.
2. School heads should foster a supportive teaching environment that encourages group work and interactive learning. They should also ensure regular professional development workshops to build teachers' competence and confidence in using collaborative strategies.
3. Teachers should take the initiative to improve their classroom practices by consistently applying collaborative learning methods. They should also seek peer collaboration and reflective practices to adapt strategies that best suit their learners' cognitive development needs.
4. Parents should be sensitised to the importance of collaborative learning and encouraged to support it through home-based group activities, peer learning, and cooperation in school projects. Their involvement will reinforce the cognitive benefits of collaboration both in and outside the classroom.

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PRE-SERVICE PRIMARY SCHOOL TEACHERS' PERCEIVED NEED FOR RESOURCE PERSON PARTNERSHIP IN ACTIVITY-BASED INSTRUCTIONAL MATERIALS PRODUCTION IN UNIVERSITY OF ILORIN, NIGERIA

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Abstract
Although instructional materials are vital to effective classroom instruction, many pre-service primary school teachers face significant challenges in producing and utilising activity-based instructional materials, thereby limiting instructional effectiveness. It is against this background that the study investigated pre-service primary school teachers' perceived need for resource person partnerships in activity-based instructional materials production in the University of Ilorin. The study employed a descriptive survey research design and sampled 275 pre-service primary school student teachers from a population of approximately 510 using a stratified convenience sampling technique. Data were collected using the researcher-designed 'Pre-Service Primary Teachers' Resource Partnership Questionnaire (PSPTRPQ).' The instrument's validity was established, and it yielded a reliability coefficient of 0.72 using Cronbach's Alpha. The collected data were analysed using descriptive statistics, specifically mean and standard deviation, to answer the research questions. Additionally, inferential statistics, including t-tests and Analysis of Variance (ANOVA), were employed to test the formulated hypotheses. The findings revealed that pre-service primary school teachers perceived the need for inclusion of resource persons in activity-based instructional material production as necessary. Furthermore, the findings indicated no statistically significant difference based on gender; however, a significant difference was observed regarding the academic level of pre-service primary student teachers and their perception of the need for resource person partnerships. Based on the findings, it is recommended that teacher education institutions and relevant stakeholders formally integrate resource person partnerships into the teacher education curriculum. Specifically, these experts should collaborate on activity-based instructional material production to bridge the gap between theory and practice, thereby enhancing the professional skills and pedagogical knowledge of pre-service teachers.
Keywords: Resource person partnerships, Instructional material production, Activity-based instruction, Pre-service primary school teachers' perception.

Introduction

Within the global landscape of higher education, teacher preparation acts as a fundamental catalyst for both personal advancement and socio-economic growth. The overarching mission of teacher education programs is

to cultivate highly proficient educators characterised by intellectual depth, innovative pedagogical insights, and the creative adaptability required for diverse educational tiers. Central to the professional development of prospective primary school teachers is the integration of activity-based methodologies, which place a significant emphasis on the design and utilisation of instructional resources (Federal Government of Nigeria, 2013; Federal Ministry of Education, 2014).

In their study, Yekekpolor and Uveruveh (2022) found that teaching and learning materials (TLMs), encompassing both print and non-print resources, are essential for developing innovative and competent educators. These instructional tools are intentionally designed to facilitate communication and engagement within the classroom, serving to clarify complex information and spark student interest. Most significantly, the authors emphasise that the strategic use of these materials is crucial for cognitive development, as they directly enhance students' retention and memory of learned concepts, ensuring that educational content is not only understood but also effectively stored for future use. By encouraging hands-on experiences and sensory interaction, these materials help students develop their imagination and creative thinking. TLMs exist in various forms, such as audio, visual, and manipulative resources and are designed to support national curriculum standards (Listiani *et. al.*, 2023). According to Iroh and Onyinyichi (2024), these tools are instrumental in driving student interest and boosting academic achievement. Research specifically highlights their effectiveness in improving outcomes in English and Mathematics (Awoyale *et. al.*, 2024; Iroh & Onyinyichi, 2024). Furthermore, the strategic use of instructional materials enhances lesson recall, minimises absenteeism during teaching practice, and fosters a more meaningful educational experience (Buba *et. al.*, 2019).

Contemporary academic shifts have placed significant weight on the creation of activity-based instructional resources, reflecting a commitment to student-centric methods and the demands of modern education. Noreen and Rana (2019) contend that active learning strategies encourage both cognitive and physical participation, allowing learners to build understanding by developing their own teaching tools. Furthermore, Ikbal (2023) maintains that these techniques foster essential skills such as critical inquiry, teamwork, and the practical implementation of theoretical ideas. Within this paradigm, educators act as guides while learners take the lead in crafting educational aids. Research indicates that this strategy is particularly successful in boosting information retention, participation, and drive among student teachers (Zafra-Gómez *et. al.*, 2015; Mallick *et. al.*, 2021)

Within the Nigerian landscape, where issues of unemployment and underemployment remain prevalent, Activity-Based Learning (ABL) emerges as a strategic framework for fostering self-sufficiency, technical proficiency, and an entrepreneurial mindset. Geneva Global (n.d.) maintains that ABL allows students to concurrently develop within the cognitive, emotional, and social spheres. As a result, student teachers do more than just encounter academic theories; they are actively encouraged to implement their pedagogical understanding through authentic, hands-on assignments. At the University of Ilorin, particularly within the Primary Education Unit of the Department of Adult and Primary Education, pre-service teachers actively participate in the production of activity-based instructional materials as a core component of their training. These practical exercises extend beyond traditional classroom lectures by requiring students to collaboratively plan, design, and produce teaching aids aligned with the Lower and Middle Basic curriculum (Primary 1–6).

The projects also form part of the students' continuous assessment. Throughout the semester, pre-service teachers are organised into smaller groups of ten to fifteen members. Each group is assigned a specific task, and individual roles are distributed based on members' talents and the group leader's discretion. Roles may include project coordinator, record keeper, materials manager, or presenter. Dedicated discussion sessions are held for each role to promote idea sharing, clarify responsibilities, and ensure effective group collaboration. Additionally, each group is given opportunities to present their experiences and instructional products to the entire class. Ultimately, the completed materials are submitted and displayed in the department's Arts and Resource Room, serving as both an exhibition and a platform for peer learning.

Some examples of these instructional materials include:

1. Handmade abacuses and bead frames are used for teaching number sense and early arithmetic concepts.
2. Locally crafted items such as Nylon hand fans, bridal hand fans, pillows, cushions, and teddy bears, which are useful for parties, Home Economics, role-playing, and arts integration.

3. Bottle-cap flower vase, and DIY clocks, designed to support geography and time-telling skills through hands-on learning.
4. Mural trees and cultural symbols, including items like *Irukere*, *Nza*, *Chumbe*, and traditional drums used to promote values, ethics, and cultural education in Civic, Social and Religious Studies.
5. Recycled tyre stools and cardboard houses are often employed in Environmental Science and vocational training to teach sustainability and practical construction skills.
6. Beaded vases, wall décor, and eco-friendly crafts blend creativity with environmental consciousness to support lessons in art and sustainability.
7. Locally made bags crafted from fabric, Ankara clothes, leather, and other accessible materials are useful for entrepreneurship education and vocational skills development.
8. Paper-based instructional materials, such as alphabet charts, number lines, and story visuals, are ideal for teaching foundational literacy and numeracy at the primary school level.
9. Additionally, decorative and educational murals, such as value-laden moral trees and thematic posters, are strategically displayed on departmental walls to reinforce classroom instruction and stimulate learners' interest.

By participating in these practical assignments, prospective educators develop the capacity to instruct diverse concepts across Mathematics (such as temporal awareness and arithmetic operations), Science (focusing on material properties), Social Studies (exploring leadership and cultural heritage), and Creative Arts (emphasising design and craftsmanship). Such activities further introduce them to the principles of entrepreneurship, ecological consciousness, and the integration of local indigenous perspectives into modern pedagogy. Moreover, the institutional resource room provides student teachers with access to five sewing machines, facilitating the creation of apparel, bags, and other functional materials. Through these immersive encounters, pre-service teachers internalise enduring competencies that empower them to establish Small and Medium Enterprises (SMEs) upon graduation.

Empirical evidence indicates that poor use of instructional materials continues to undermine instructional effectiveness in public primary schools in Southwestern Nigeria (Okeke & Ajadi, 2023). The process of producing quality instructional materials is often complex and requires technical expertise and specialised competencies that may exceed the capacity of lecturers working alone. According to Olumorin *et al.* (2010), the development of instructional materials—especially those made from locally available resources demands that teachers acquire fundamental practical skills, including pen lettering, calligraphy, freehand illustration, graphic colour application, modelling, painting, weaving, and other related craft techniques. These skills are best acquired through consistent practice and the direct observation of experts. Without such expert influence, it becomes challenging for students to internalise and master these production techniques. The involvement of resource persons such as artisans, subject-matter experts, and community educators, therefore, becomes essential. These individuals provide real-world insights and hands-on guidance, complementing the theoretical knowledge delivered by lecturers. Styer (n.d.) emphasised that resource persons enhance teacher preparation by offering expert knowledge, modelling best practices, and enriching instructional delivery.

Similarly, Foerste *et al* (2017) and Eje *et al*.(2021) highlighted how institutional partnerships with practitioners promote improved pedagogical training and foster innovation in teaching. Importantly, research also shows that factors such as gender and academic level may influence how pre-service teachers perceive and engage with instructional materials, further underscoring the need for inclusive, supportive, and skill-oriented training environments. By way of illustration, Ohaegbulam and Anakwe (2019) observed that female learners subjected to activity-centred teaching methods achieved notably better results and knowledge retention than their male peers in Agricultural Science at the senior secondary level in Imo State. Conversely, Adu and Duku (2021) identified no substantial disparity in Mathematics achievement between male and female Grade 6 students in Buffalo City, noting only a minor variation in average scores. Likewise, Garba and Dungurawa (2017) pointed out that the educational level of student teachers is a major factor in determining the quality of their practical training experiences. Their research indicated that those in their final year often necessitate more systematic guidance to connect theoretical concepts with classroom application.

This highlights the vital role of expert partnerships in improving professional competency. Supporting this, Solibaet *et al.* (2024) discovered that advanced student teachers derived greater benefits from cooperative

learning and instructional assistance, particularly when involved in resource-heavy tasks like producing activity-based materials. Maden *et al.* (2023) also emphasised that as future educators advance through their academic journey, their reliance on specialist mentorship grows, especially regarding the development and utilisation of hands-on teaching resources. Although existing research validates the significance of pedagogical tools and underscores the advantages of involving external experts, a significant research vacuum persists regarding the specific viewpoints of prospective primary school educators on collaborating with specialists for activity-oriented material design. Furthermore, there is a scarcity of empirical data analysing how demographic variables, specifically gender and academic standing, shape these perspectives within the landscape of Nigerian teacher training. Consequently, the present investigation aims to address this oversight by evaluating the perceived necessity for resource person partnerships among student teachers at the University of Ilorin, while simultaneously examining the impact of gender and level of study on their professional outlooks.

Objectives of the study

The objectives of the study are;

1. To determine pre-service primary education teachers' perceptions of the integration of resource persons in activity-based instructional material production.
2. to examine gender differences in the perceived need for resource person partnerships among pre-service primary education teachers.
3. To investigate the influence of the level of study on pre-service primary education teachers' perceived need for resource person partnerships in activity-based instructional material production

Research Question

What is the extent to which prospective primary school educators recognise the need to involve resource specialists in the creation of activity-based instructional materials?

Research Hypotheses

H01: No significant disparity exists between male and female pre-service primary school teachers regarding their perceived necessity for resource person partnerships in material production.

H02: There is no significant difference in the perceived need for resource person partnerships based on the level of study among pre-service primary education teachers.

Methodology

This study adopted a descriptive survey research design, which enabled the collection of data from a defined group of respondents to describe their views, attitudes, and perceptions. The design was particularly suitable for examining pre-service teachers' perceived need for specialist partnerships in the production of activity-based instructional materials. The population of the study comprised approximately 510 pre-service primary school teachers at the University of Ilorin, Nigeria. From this group, a sample size of 275 respondents was recruited through application of a stratified convenience sampling technique. The sample size was determined using the Raosoft (2024) sample size determination table.

The instrument for data collection was a researcher-developed questionnaire titled Pre-Service Primary Teachers' Resource Partnership Questionnaire (PSPTRPQ). The questionnaire consisted of two sections. Section A focused on respondents' demographic information, including gender (male or female) and level of study (100, 200, 300, and 400 levels). Section B contained 10 items designed to measure respondents' perceived need for resource-person partnerships in instructional material production. Responses to the questionnaire items were rated on a four-point Likert scale of Strongly Agree (4), Agree (3), Disagree (2), and Strongly Disagree (1). Items 3, 5, 7, and 9 were negatively worded and were reverse-scored to reduce response bias and ensure consistency in measurement.

The face and content validity of the PSTRPQ were established through rigorous review by a panel of three specialists in Measurement and Evaluation. Their feedback was instrumental in refining the clarity and pedagogical relevance of the items. For reliability testing, a pre-test was conducted with 20 student teachers

from a comparable institution who were not included in the main study. The resulting data were analysed using Cronbach's Alpha, yielding a reliability coefficient of 0.72, which confirms the instrument's internal consistency for academic research. The researcher personally distributed the questionnaires on a first-come, first-served basis immediately following the conclusion of the 2024/2025 Rain Semester examinations. To ensure ethical compliance and student cooperation, participants were sensitised to the study's objectives before the exam period. Administrative approval was secured from the Head of Department and examination invigilators to facilitate a smooth data-gathering process. The administration took place over four distinct days during scheduled Primary Education courses to specifically target relevant participants without interfering with other academic routines.

The research question was addressed through descriptive analysis, including means and frequency distributions, while independent samples t-tests and one-way ANOVA were inferentially employed to assess the hypotheses at a 0.05 significance level.

Results

Research Question

What is the extent to which prospective primary school educators recognise the need to involve resource specialists in the creation of activity-based instructional materials?

Table 1: Mean Scores on Prospective Primary School Educators' Recognition of the Need to Involve Resource Specialists in Activity-Based Instructional Materials

S/N	Statement	Mean	Std. D
1	I believe experienced resource persons can improve the qual instructional material production	3.19	.94
2	Collaborations with external experts facilitate the conn between academic theories and hands-on instructional practices	2.95	.99
3*	Support from resource persons would not make any real diffe in developing my self-reliance skills	2.32	1.08
4*	There is no need to collaboration with experts for sourcing materials in childhood education	2.31	1.05
5*	I feel that lecturers alone are enough for teaching instructi materials production without outside help	2.42	1.07
6	Mentorship by skilled professionals would greatly enhanc ability to produce instructional materials	3.25	.98
7*	Involving resources persons in instructional materials producti is unnecessary and adds little value	2.43	1.05
8	Instructional material production becomes more practica relevant when resource persons are involved	3.06	.97
9*	Working with external experts would not influence the overall quality of materials I creates	2.38	1.00
10	I believe resource person partnerships should be a permanen of the teacher training curriculum	3.07	1.06

Source: Field Survey, 2025 **WM 2.74**

The table above reveals that pre-service primary teachers generally agreed with the following statements: they believe that experienced resource persons can improve the quality of instructional material production ($X^- = 3.19$); that collaborations with external experts facilitate the connection between academic theories and hands-on instructional practices ($X^- = 2.95$); and that mentorship by skilled professionals would greatly enhance their ability to produce instructional materials ($X^- = 3.25$). They further indicated that instructional material production becomes more practical and relevant when resource persons are involved ($X^- = 3.06$), and that resource person partnerships should be a permanent part of the teacher training curriculum ($X^- = 3.07$).

However, the respondents generally disagreed with the following statements: that support from resource persons would not make any real difference in developing their self-reliance skills ($X^- = 2.32$); that there is no need for collaboration with experts when sourcing local materials in primary education ($X^- = 2.31$); and that lecturers alone are sufficient for teaching instructional material production without external help ($X^- = 2.42$). They also disagreed that involving resource persons in instructional material production is unnecessary and adds little value ($X^- = 2.43$), and that working with external experts would not influence the variety or quality of materials they create ($X^- = 2.38$). The findings therefore show that pre-service primary school teachers recognize the need to involve resource persons in the production of activity-based instructional materials, as evidenced by the calculated mean score ($X = 2.74$), which is above the criterion mean of 2.50

Null Hypotheses Testing

Ho1: No significant disparity exists between male and female pre-service primary school teachers regarding their perceived necessity for resource person partnerships in material production.

Table 2: Independent Samples T-test Showing Gender Differences in Pre-Service Primary Teachers' Perceived Need for Resource Person Partnerships in Activity-Based Instructional Material Production

Gender	N	Mean	St. D	T	St. Error	df	P	Remark
Male	106	26.576	4.94					
				-2.212	0.47996	273	.559	Not Significant
Female	169	27.852	4.47					

Source: *Field Survey 2025*

The results presented in table 2 indicate that male participants recorded a mean score of 26.58 (SD = 4.94), while female participants recorded a slightly higher mean of 27.85 (SD = 4.47). The inferential analysis yielded a p-value of -2.212 with 273 degrees of freedom. The calculated p-value was .559, which greater than the established 0.05 alpha level of significance ($p > 0.05$). Consequently, the null hypothesis which posited that no significant difference exists between male and female pre-service primary student teachers regarding their perceptions on expert partnerships is accepted. This finding suggests that gender does not exert a substantial influence on how prospective educators perceive the necessity of collaborating with resource persons for teaching-learning materials development at the University of Ilorin.

Ho2: There is no significant difference in the perceived need for resource person partnerships based on the level of study among pre-service primary education teachers.

Table 3: Analysis of Variance (ANOVA) Summarizing the Influence of Student Teachers' Academic Level on Resource Partnership Perceptions

Variance source	Sum of Squares	Df	Mean Square	F	Sig	Remark
Between Groups	308.271	3	102.757	4.867	.003	Significant
Within Groups	5721.089	271	21.111			
Total	6029.360	274				

Source: *Field Survey 2025*

The data displayed in Table 3 reveals the outcome of the variance analysis conducted to determine if academic level affects the views of student teachers regarding resource person involvement. The test yielded an F (3, 271) = 4.867$ with an associated p- =.003. Since the observed significance value ($p < 0.05$) is lower than the fixed alpha of 0.05$, the null hypothesis is rejected. This result implies that the perceived necessity for resource partnerships is not uniform across all levels of study (100L, 200L, 300L, and 400L); instead, the academic progression of students at the University of Ilorin significantly shapes their outlook on specialist collaboration

Table4: Post-Hoc LSD Summary Table for Perceived Need by Level of Study

Comparison	Mean Difference	Sig. (p)	Interpretation
100 Level vs. 200 Level	1.07	.249	Not Significant
100 Level vs. 300 Level	0.30	.735	Not Significant
100 Level vs. 400 Level	2.51	.002	Significant
200 Level vs. 300 Level	-0.77	.373	Not Signi ficant
200 Level vs. 400 Level	1.44	.061	Not Significant (marginal)
300 Level vs. 400 Level	2.20	.003	Significant

Source: *Field Survey 2025*

The post-hoc LSD test from the above table revealed that 400 Level students has a significantly higher perceived need for resource person partnerships compared to both 100 Level (p= .002) and 300 Level (p= .003 students. No other significant difference was found between any other pairs of study levels.

Discussion of Findings

The results of this investigation demonstrate that primary pre-service student teachers consider the involvement of resource persons in activity-based instructional material production to be both necessary and valuable. They strongly support collaborative teaching approaches, recognising the role of skilled professionals in enhancing instructional quality, offering mentorship, and linking theoretical concepts with practical application. These observations are consistent with the work of Styer (n.d.), Foerste *et al*. (2017), and Eje *et al.* (2021), who emphasised the importance of involving external experts in teacher education to foster better preparation and innovation. Additionally, the teachers advocated for making resource person partnerships a permanent part of teacher training, which reflects global trends toward practical, real-world learning and interdisciplinary collaboration in 21st-century education (Ikbal, 2023; Mallick *et. al.,* 2021). This model is already practised at the University of Ilorin, where pre-service teachers engage in hands-on instructional material projects that support creativity, retention, entrepreneurship, and culturally responsive teaching (Yekekpolor & Uveruveh,

2022). These findings also reinforce Noreen and Rana's (2019) position that activity-based learning boosts both physical and mental engagement, especially when supported through collaborative efforts.

The results indicated that the views of male and female pre-service elementary teachers did not differ significantly regarding the need for resource person collaboration. This suggests that gender does not play a decisive role in shaping attitudes toward collaborative instructional support. This outcome aligns with some prior studies, while contrasting with others, highlighting the complexity of gender-related educational dynamics. For instance, Adu and Duku (2021) similarly found that Math's scores among sixth- grade students in Buffalo City showed no major disparities between boys and girls, indicating that gender may not substantially influence learning outcomes or educational perceptions in certain contexts. Their study reported only a negligible mean difference between the two groups, supporting the idea that both male and female learners may respond similarly to educational interventions when given equal opportunities and support. However, contrasting evidence is presented by Ohaegbulam and Anakwe (2019), whose study revealed that female students exposed to activity-based instructional strategies outperformed girls in Imo state senior secondary schools, outperforming boys in Agricultural Science, showing superior retention and average scores when taught through activity-centred methods. This suggests that, in some cases, gender differences may emerge, particularly in subject-specific contexts or when instructional strategies are closely tied to learner engagement styles (Okwuoza & Ale, 2022)

Conclusion

This study concludes that the involvement of experts in training prospective foundational-level teachers is a necessity that should be formally integrated into the teacher education curriculum. The academic level and exposure of these student teachers play a significant role in their professional development; as they interact with diverse instructional materials, they increasingly recognise the value of resource persons. Ultimately, the participation of experts serves to complement the efforts of lecturers and enrich the learning experience for student teachers, ensuring they are better prepared for the complexities of the classroom.

Recommendations

The following recommendations were made, among others, that:

1. Teacher education institutions should formally integrate partnerships with artisans and professionals into the curriculum to provide pre-service teachers with practical experience in instructional material production.
2. Colleges of Education, Faculties of Education in universities**,** and other teacher training institutions should establish partnerships with local industries, vocational centres, and cultural institutions to provide students with access to materials, techniques, and mentorship opportunities.
3. Teacher training institutions, in collaboration with cognate departments and course lecturers, should organise hands-on workshops tailored to each level of study to ensure that all students, regardless of academic standing, acquire the necessary skills and confidence in instructional material development. These workshops can also be extended to course lecturers for continuous professional development.
4. Departments of Childhood Education should create dedicated resource rooms equipped with tools, materials, and expert support, where pre-service teachers can collaborate, experiment, and display their instructional materials throughout the academic year, and, where possible, for exhibition purposes.
5. There is a need to refine and update teacher education curricula to incorporate formal collaborations with external experts.

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PRIORITISING PLAY-BASED LEARNING OF EARLY CHILDHOOD EDUCATION IN OKE OGUN RURAL AREA, OYO STATE

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Abstract
This position paper advocates for the central role of play-based learning in early childhood education, especially within rural areas of Nigeria. Using Oke-Ogun in Oyo State as a focal point, the paper examines how limited resources, infrastructural challenges, and socio-cultural factors impact learning outcomes. Drawing on the developmental theories of Jean Piaget and Lev Vygotsky, alongside successful global practices in resource-poor settings, this paper presents play not as a frivolous activity, but as a critical strategy for fostering cognitive, emotional, social, and language development in young children. The rural education context is explored in depth, highlighting challenges such as inadequate teacher training, scarcity of learning materials, and rigid, exam-focused curricula that often leave no room for creative and play-based approaches. Despite these barriers, this paper presents compelling evidence from teacher-led innovations and community-driven efforts that demonstrate how play-based learning can succeed even in resource-poor environments. Recommendations include integrating play into the curriculum, investing in teacher training, and launching community sensitisation campaigns. This paper calls for a shift in mindset, urging policymakers, educators, and stakeholders to recognise play as the foundation for early childhood education. This approach is essential for reducing educational disparities and ensuring that every child receives a strong start, regardless of location.

Keywords: Play-based learning, rural education, early childhood development, cognitive development

Introduction

Early childhood education (ECE) plays a vital groundwork for lifelong learning. It plays a key role in shaping children's cognitive, emotional, and social development. In many places, especially in rural communities, access to quality early childhood education is limited due to a lack of resources, trained teachers, and suitable teaching methods. Yet, in these environments, where formal learning structures are often weak or absent, particularly in rural regions like Oke Ogun, children need engaging, flexible, and developmentally suitable learning experiences the most. Education theorists and psychologists have long recognised play-based learning as one of the most effective ways for young children to learn (Marfo, 2011). *Influenced by the ideas of pioneers like Jean Piaget, Lev Vygotsky, and Maria Montessori*, play is more than just fun; it is a powerful tool through which children understand their world. It sparks curiosity, nurtures creativity, improves communication, and builds critical thinking skills. These qualities are essential for success both in and out of the classroom.

Definition of Play-Based Learning

Play-based learning is an educational approach that uses play as the primary way of teaching in early childhood, particularly in environments with limited resources. Unlike traditional methods that depend on direct instruction

and memorisation, play-based learning focuses on hands-on experiences, active involvement, and exploration. It centres on the belief that young children learn best when they can interact freely with their environment, express themselves creatively, and take part in meaningful activities that match their interests and developmental needs (Whitlock, 2023).

In Oke Ogun, Oyo State, children learn best when play reflects what they see and experience in their everyday lives. Using local materials and cultural practices makes play more meaningful, enjoyable, and easier for children to understand. It also helps schools work within their resources while still providing quality learning experiences.

Free play can happen when children are given common materials from their environment and allowed to decide what to do with them on their own. Items such as sand, stones, leaves, sticks, calabashes, empty tins, and corn cobs can be used to create houses, roads, farms, or cooking areas. During outdoor play, children often imitate real-life activities like farming, selling goods in the market, fetching water, or cooking with firewood.

Guided play takes place when teachers gently support children's play to achieve certain learning goals. For example, a teacher may bring clay or soft soil and encourage children to mould familiar objects such as pots, farm tools, or animals they see around them. This helps improve hand skills and introduces new words in a natural way. Another good example is storytelling play, where a teacher tells a local folktale or proverb and asks the children to act it out using old wrappers, beads, or raffia as costumes. Through this, children develop language skills, learn moral lessons, and gain a deeper understanding of their culture, while still enjoying the freedom of play.

Structured play involves organised activities with clear rules and learning objectives. Traditional counting games using stones, seeds, or cowries can be used to teach numbers, turn-taking, and patience. Yoruba songs and clapping games that are commonly sung at home or during community events can be introduced to help children learn rhythm, listening, and memory skills. Simple games like relay races using sticks or other local objects can also be organised to teach cooperation, fairness, and physical coordination.

When free play, guided play, and structured play are combined with local materials and cultural traditions in Oke Ogun, learning becomes more meaningful and enjoyable for young children. This approach supports their overall development while helping them grow with a strong sense of identity and connection to their community.

According to Bramble Network (2024), play-based learning can adjust to different cultural contexts and resource levels. In rural areas, it can use locally available materials, stories, songs, and games that connect with children's experiences.

Purpose of the Position Paper

The purpose of this position paper is to support using play-based learning as a main approach in early childhood education in rural areas. Instead, this paper makes a strong case for why play should not be viewed as a distraction or luxury but as a crucial part of holistic child development and basic learning.

This paper aims to:

i. Highlight the educational benefits of play as a valuable tool for cognitive, emotional, social, and physical development in young children.
ii. Contextualise the rural learning environment, pointing out the unique challenges and opportunities in these settings, especially regarding early education.
iii. Dispel common myths about play-based learning, particularly the idea that it lacks structure or academic depth.
iv. Show how play-based learning can be adapted to rural contexts, using local materials, cultural practices, and teacher creativity.
v. Offer practical recommendations for educators, policymakers, and community members to support play-based methods in rural schools.
vi. Inspire a change in mindset and policy, encouraging rural education systems to adopt a more flexible, child-centred, and developmentally appropriate teaching style.

Scope and Structure

This position paper specifically focuses on the role of play-based learning in early childhood education within rural communities, especially in low-resource settings where traditional teaching methods often fail to meet the developmental needs of young children. The scope of this paper is limited to:

i. Early childhood education, specifically for children aged 0 to 6.
ii. Rural and underserved communities with limited access to quality education.
iii. The use of play-based learning as a main educational method, rather than a supplementary or recreational activity.
iv. Policy, teacher training, and community involvement in adopting play-based methods.

This paper does not intend to provide statistical analysis or comparative data but instead relies on educational theory, field experience, and practical examples to make its case. The focus is on understanding concepts, advocating for changes, and providing actionable recommendations.

Understanding Play-Based Learning

2.1 Key Principles of Play-Based Learning

Play-based learning is based on core principles that show how young children learn best through hands-on experiences, exploration, social interaction, and self-expression. These principles serve as the foundation for effective early childhood education, especially in rural settings where formal resources may be lacking but creativity and cultural richness are present (Bramble Network. (2024).

i. **Child-Centred Learning:** At the heart of play-based learning is the idea that children actively participate in their education, which is especially crucial in rural areas like Oke Ogun, where resources and formal systems are limited. They are not just passive recipients of information but curious learners who want to understand their world. This principle encourages educators to observe children's interests, needs, and stages of development and to create learning experiences that connect with them.

ii. **Learning Through Active Engagement:** Play works best when children are physically, mentally, and emotionally involved. Through activities like building, role-playing, drawing, and manipulating objects, children engage their senses and develop a deeper understanding of concepts. Active learning helps children remember information longer and apply it better in real-life situations, which is especially important in rural areas where practical knowledge is highly valued.

iii. **Developmentally Appropriate Practice:** Play-based learning respects the natural stages of child development. It aligns with what children can understand and do at each age, making sure learning activities are not too easy or too hard. This principle prevents imposing formal academic expectations too early and allows children to build foundational skills at a pace that supports healthy growth.

iv. **Integration of Cognitive, Social, Emotional, and Physical Development:** Real learning in early childhood involves the whole child. Play-based activities support this integration: group games build teamwork and empathy, storytelling improves language and literacy, and construction tasks enhance motor skills and spatial awareness. This holistic approach is especially crucial in rural areas where formal child services may be limited, making schools key places for comprehensive development.

v. **Guided by Educators, Not Controlled by Them:** In a play-based environment, educators act as facilitators rather than directors of learning. They create settings that spark curiosity, provide open-ended materials, ask thought-provoking questions, and offer gentle guidance when needed. The goal is to support children's learning without taking over, helping them build confidence, independence, and decision-making skills.

vi. **Meaningful Contexts and Real-Life Relevance:** Play-based learning works best when it connects to children's real-world experiences. For rural kids, this might mean pretending to run a market stall, caring for animals, or reenacting community events. When learning takes place in meaningful contexts, children make stronger connections between what they know and what they are learning, improving both understanding and retention.

vii. **Choice, Exploration, and Creativity:** A key aspect of play-based learning is the freedom it gives children to make choices, try new things, and express themselves creatively.

In rural classrooms, the practical application of play-based learning principles depends largely on how well teachers adapt learning activities to the local environment and the everyday realities of children. One of the most effective ways to do this is through the use of locally available materials, which are familiar, affordable, and culturally meaningful. In many rural communities, including areas such as Oke Ogun, classrooms may lack commercially produced toys and learning aids, yet the natural and social environment provides abundant resources that can support rich learning experiences.

Teachers can apply the principle of child-centred learning by allowing children to interact freely with materials they already recognise from home and community life. Objects such as stones, seeds, sticks, leaves, shells, empty containers, calabashes, and fabric remnants can be transformed into learning tools for counting, sorting, building, and imaginative play. Because these materials are familiar, children feel confident using them, which encourages active participation, creativity, and exploration.

The principle of inclusiveness can also be practically applied through the use of local materials. Since these resources are readily available, all children can participate equally regardless of their family's economic background. For example, using bottle tops or seeds for counting ensures that no child is excluded due to a lack of access to learning materials. Children with different abilities can engage at their own pace, as activities can be easily adapted by increasing or reducing complexity.

Flexibility is another key principle that can be strengthened through local resources. Rural teachers often work in environments where schedules, class sizes, or facilities may change unexpectedly. Locally sourced materials allow teachers to adjust activities quickly without relying on expensive or scarce equipment. For instance, a planned numeracy lesson can easily turn into an outdoor counting game using stones or leaves, while a language lesson can involve role-play based on market scenes or farming activities familiar to the children. This flexibility helps teachers respond to children's interests and environmental conditions while keeping learning purposeful.

Play-based learning also supports cultural relevance by embedding learning within local traditions and practices. Traditional songs, folktales, riddles, and games can be incorporated into daily classroom activities to teach language, moral values, memory, and social skills. Using local languages during play helps children understand concepts more easily and strengthens their cultural identity. When children see their culture reflected in their learning, they are more motivated and emotionally connected to school.

Key Principles of Play-Based Learning

According to Roche *et al*. (2024), play-based learning is built on the idea that play is not a distraction from learning; it is an essential part of it. This approach focuses on active, child-led, and age-appropriate experiences that encourage meaningful growth. The main principles are:

i. Child-Centred Learning: Activities are based on children's interests, abilities, and developmental stages. Educators act as observers and helpers instead of directing the learning process.
ii. Active Engagement: Children learn best when they are engaged both physically and mentally. Play incorporates movement, exploration, decision-making, and problem-solving, all vital for deep learning.
iii. Holistic Development: Play nurtures cognitive, emotional, social, and physical growth at the same time. It fosters language, empathy, fine motor skills, and critical thinking.
iv. Teacher as Facilitator: Teachers create environments that spark curiosity, stimulate questions, and offer chances for discovery rather than just delivering strict instructions.

These principles are foundational for quality early childhood education and are particularly important in resource-limited rural areas where adaptability and local importance are essential.

Types of Play in Early Childhood Education

Play is a varied and lively activity. It can take many forms, each providing different learning opportunities. Recognising these types helps educators craft richer learning experiences:

i. Free Play (Unstructured Play): Initiated by children and directed without specific learning goals. It promotes independence, creativity, and social negotiation skills.

ii. Guided Play: Structured by adults with learning goals while still allowing children some independence. For instance, providing materials for kids to build homes while learning about community roles.
iii. Structured Play: Activities led by adults that have rules or educational goals—such as puzzles, counting games, or singing educational songs.
iv. Dramatic or Pretend Play: Children use their imagination to create stories and roles. This enhances language skills, emotional expression, and cultural understanding.
v. Physical or Active Play: Activities like running, climbing, and dancing improve motor skills and physical health, both crucial for staying focused and participating in class.
vi. Constructive Play: Activities involving building with blocks, drawing, or crafting support planning, coordination, and spatial awareness (Kaluba, C. et al., 2024).

Theories Supporting Play in Learning

Many educational theorists have laid a strong intellectual foundation for incorporating play into early childhood education. Their theories support the idea of play as an effective learning strategy:

i. Jean Piaget (Cognitive Development Theory): Piaget suggested that children move through developmental stages and learn best by actively exploring and having hands-on experiences. For him, play—especially symbolic play—was a way for children to absorb and process new knowledge (Piaget, J. 1952).
ii. Lev Vygotsky (Sociocultural Theory): Vygotsky highlighted social interaction's role in learning. He introduced the Zone of Proximal Development (ZPD), explaining what a child can do with help but not yet on their own (Vygotsky, L. S. 1978).
iii. Maria Montessori: Montessori believed children have a natural desire to learn through purposeful activity. Her approach supports structured yet child-driven play that fosters independence, focus, and self-discipline (Montessori, M. 1964).
iv. Friedrich Froebel (Father of Kindergarten): Froebel introduced the concept of educational play through "gifts" and "occupations" and designed early learning settings that prioritised creativity and exploration (Tovey, H. 2017).

The Rural Early Childhood Education Context

Characteristics of Rural Learning Environments

Rural learning environments stand out due to their unique structure, setting, and social dynamics. Unlike urban classrooms, which often follow formal systems, rural early childhood education tends to involve improvisation, limited infrastructure, and strong connections to local traditions. Learning can occur in open-air spaces or shared buildings, where one teacher works with children of various ages and skills (Wang *et al*., 2024).

Cultural and Community Influences on Early Learning in Rural Areas

Culture plays an important role in how children learn in rural communities. They grow up in environments rich in oral storytelling, music, dance, rituals, and everyday experiences that can easily integrate into early learning. These cultural practices provide valuable ways to promote language development, creativity, and social skills. Involvement in family activities like farming, caregiving, and trading helps children develop practical skills from an early age (Ndlovu, 2023).

Why Play-Based Learning is Essential in Rural Settings

Supporting Cognitive and Social Development

Play-based learning is an effective way to support cognitive and social development in early childhood, especially in rural areas where formal educational resources might be scarce (Bramble Network. (2024). Through imaginative and structured play, children explore, discover, and experiment with activities that promote brain growth, memory, and logical thinking, particularly in settings where formal educational infrastructure is lacking

Encouraging Creativity and Problem-Solving Skills

Children in rural areas often face real-world challenges early on, and play can effectively nurture the creativity and critical thinking skills they need to navigate their surroundings. When children are encouraged to use common items like sticks or fabric scraps as play materials, they learn to innovate, repurpose, and adapt. This type of unstructured play allows them to solve problems independently, test ideas, and persist through trial and error.

Enhancing Language and Communication Through Play

Language develops best in environments where children feel free to express themselves in meaningful ways. Play provides that space. Whether through storytelling, singing, or conversations during games, children practice their language skills naturally. In rural communities, where oral traditions are strong, these interactions create a bridge between home and school language (Su, 2024).

Addressing Misconceptions About Play-Based Learning

"Play is Not Learning" – Debunking the Myth

One enduring myth in early childhood education, especially in rural areas, is that play distracts from serious learning. This belief often comes from traditional education models that equate structured, quiet activities with productivity and prioritise reading and writing achievements above all else. As a result, play is sometimes seen as mere entertainment or a waste of time (Kaluba *et al*. 2024). However, research and global best practices show that play is a vital part of early learning and the best method for young children.

Balancing Structure and Freedom in Learning

Another challenge for educators is finding the right balance between structure and freedom in play-based learning. While free play is essential for encouraging creativity and independence, guided play, where teachers provide a supportive environment with clear learning goals, can greatly improve educational outcomes. In rural classrooms, where resources and time are often limited, educators may feel pressured to focus only on structured lessons to meet curriculum targets (Lindeman, 2022). However, play-based learning does not mean giving up on educational goals. Instead, it involves reaching those goals through engaging, age-appropriate, and child-focused activities. For example, a literacy lesson can include storytelling with puppets, while a numeracy lesson can involve sorting and counting local items.

Challenges to Implementing Play-Based Learning in Rural Areas

Limited Access to Materials and Learning Tools

Many rural communities face a significant lack of basic learning materials, which poses a major barrier to implementing effective play-based learning. However, local, low-cost alternatives such as using everyday materials can overcome this challenge. Classrooms often lack resources, with few toys, books, or visual aids to promote hands-on engagement. Even basic items like crayons or storybooks can be hard to come by in some rural areas.

Lack of Teacher Training and Awareness

Another significant issue is the widespread lack of training for rural early childhood educators on facilitating play-based learning. Many teachers in these areas may not have formal qualifications in early education and may be unfamiliar with the teaching theories that support learning through play.

Solutions for Teacher Training or Community Involvement

To make play-based learning a real priority in Early Childhood Education in Oke Ogun, Oyo State, attention must be given to how teachers are trained and how communities are involved. Many of the challenges facing play-based learning in rural areas come from limited training opportunities for teachers, a lack of materials, and a poor understanding of the value of play among parents. These challenges can be reduced through practical teacher support and active community participation.

One useful step is to organise regular training workshops for early childhood teachers that focus on play-based learning using materials found within the local environment. During these workshops, teachers can be shown simple ways to turn everyday items such as stones, bottle tops, leaves, calabashes, clay, and old fabrics into learning materials. Rather than long lectures, the training should involve hands-on activities where teachers practice designing play-based lessons and classroom games. This helps teachers gain confidence and realise that effective play-based learning does not require expensive toys.

Another important approach is peer support among teachers. Teachers who already use play-based methods successfully can support others by sharing ideas, demonstrating activities in class, and working together to plan lessons. School heads and supervisors can encourage this by creating time for teachers to meet, observe one another, and discuss what works best in their classrooms. This kind of support helps teachers feel less overwhelmed and more willing to try new teaching methods.

Community involvement is also very important. Schools can hold meetings with parents and caregivers to explain why play is important for children's learning and development. When parents understand that play helps children learn to count, talk, cooperate, and think, they are more likely to support play-based activities. These discussions can take place during PTA meetings or community gatherings and should be done in the local language so everyone can understand clearly.

Parents and community members can also support play-based learning by providing local materials and sharing cultural knowledge. Items like wood pieces, clay, seeds, baskets, old clothes, and locally made toys can be donated to schools. Elders in the community can teach traditional games, songs, and stories that teachers can use in the classroom. This not only reduces costs but also helps children learn about their culture while playing.
Overall, when teachers are properly supported and communities are actively involved, play-based learning becomes easier to implement in rural areas like Oke Ogun. With simple training, local materials, and shared responsibility, children can enjoy learning in a way that is meaningful, joyful, and suited to their everyday lives.

Strategies for Promoting Play-Based Learning in Rural Areas

Integrate Play-Based Learning into National Early Childhood Education Policies

To make play-based learning recognised and widely accepted in rural areas, it must be included in national early childhood education policies. Policymakers should ensure that the national curriculum focuses on appropriate learning through play, instead of overwhelming young learners with academic content. Schools and teachers need guidelines to incorporate both structured and unstructured play into daily routines.

Invest in Teacher Training and Professional Development

Ongoing teacher training is vital for effective play-based education, especially in rural areas with limited access to specialised instruction. Governments and education stakeholders should create training programs that provide teachers with the skills and resources to establish play-rich environments. Training should offer practical workshops on designing play activities with local materials, managing diverse age groups with playful methods, and assessing learning outcomes through observation.

Mobilise Communities to Support Play in Learning

Community involvement is essential for improving education in rural areas. Campaigns and workshops should be organized to clarify play-based learning and show its benefits for children's cognitive, emotional, and social growth. Educators can use storytelling, local examples, and parent-child play sessions to build community support.

Encourage the Use of Local and Recycled Materials for Play

Instead of relying on expensive imported teaching aids, rural schools should use materials available in their communities. Training teachers and staff to make use of local, safe, and recycled materials like bottle caps, fabric scraps, clay, or wood can lead to sustainable and context-appropriate play-based learning.

Case Study 1: A Village School's Play-Led Transformation

In Oke-Ogun, a rural area in northern Oyo State, the primary school in Ilero village faced challenges common to many rural schools crowded classrooms, limited resources, and low student engagement. Teachers had difficulty keeping students interested, and many young children dropped out because they found school dull and disconnected from their lives.

This changed when a new headteacher, trained in child-centered teaching, introduced play-based learning in the early childhood classrooms. Using materials like gourds, pebbles, clay, and woven baskets, the school created an interactive and lively classroom. Teachers added Yoruba songs, traditional stories, role-play of market scenes, and counting games with corn kernels. After six months, attendance rates improved, especially for younger students. Parents reported that their children were teaching them songs at home and showing off their counting skills during play.

Case Study 2: Teacher-Led Innovation in a Resource-Poor Setting

In a small settlement near Kishi, also in the Oke-Ogun area, Mrs. Ajoke, a dedicated early childhood teacher, faced a tough challenge teaching 35 pre-primary children in a one-room block with minimal supplies. With no textbooks, no standard toys, and few desks, she relied on her creativity and her knowledge of the community. She started by watching how children played at home sweeping compounds, pretending to farm with sticks, and organizing mock community meetings. Inspired by these activities, she developed a weekly play plan. Lessons on numbers became yam-counting games, and phonics were taught through call-and-response chants. She set up a storytelling corner with mats for children to sit and listen to folktales rich in morals, local words, and life lessons. Despite lacking conventional materials, the children thrived. Mrs Ajoke also engaged parents by inviting them to share play materials like calabash fragments, old clothes for dress-up, and empty cans for sorting games. Eventually, her efforts were recognised by the school management committee, which allocated part of their community development funds to build a small open-air play area.

Summary

The paper started by defining play-based learning and its main principles, referencing the theories of Piaget and Vygotsky, and highlighting its global recognition. It examined the realities of rural learning environments marked by limited resources, cultural diversity, and systemic obstacles and demonstrated how play can help close educational gaps.

Conclusion

This paper argues that play-based learning should be central to early childhood education, especially in rural areas like Oke-Ogun, Oyo State. Play is not a luxury; it is an effective educational approach that fosters cognitive growth, social interactions, creativity, emotional well-being, and foundational literacy and numeracy skills in young children, especially in resource-poor settings like Oke Ogun. For rural communities with limited access to costly learning resources, play-based methods provide a practical, culturally relevant, and inclusive solution for meaningful early learning.

Suggestions

Integrating Play-Based Methods in National and Local Curricula: To sustainably implement play-based learning in early childhood education, it needs to be included in Nigeria's national and local curricula. The Federal Ministry of Education, with curriculum development agencies like NERDC (Nigerian Educational Research and Development Council), should update early childhood education frameworks to specifically include play-based methods and guidance for implementation, especially in rural areas like Oke-Ogun.

Funding and Support for Rural Teacher Development: Successful implementation of play-based learning relies heavily on prepared and capable teachers. Governments at all levels must prioritise the training, support, and motivation of rural educators. This requires dedicated funding for pre-service and in-service teacher training programs focused on play-based methods.

Community Involvement and Awareness Campaigns: Community understanding and support are crucial for the success of play-based programs. Public awareness campaigns delivered in local languages via radio, religious centres, market meetings, and community events should aim to challenge misconceptions that equate play with laziness.

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BARRIERS TO ACCESSING EARLY CHILDHOOD EDUCATION IN RURAL COMMUNITIES: A THEORETICAL PERSPECTIVE

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Abstract

Early childhood education (ECE) is globally recognised as the foundation of lifelong learning and human development, yet children in rural communities continue to face significant barriers to access. This position paper examines the paradox between rural parents' strong motivation to enrol their children in school and the systemic challenges that undermine these aspirations. Drawing on human capital theory, ecological systems theory, the capability approach, social reproduction theory, and feminist theory, the paper analyses both the motivating factors, such as economic aspirations, social prestige, cultural expectations, and gender empowerment and the barriers, including poverty, inadequate infrastructure, limited teacher availability, cultural constraints, and weak governance. The discussion highlights that overcoming these challenges requires more than parental motivation; it calls for systemic reforms and equity-focused interventions. The implications emphasize the need for multidimensional strategies that combine financial incentives, strengthened home–school–community linkages, culturally relevant pedagogy, inclusive environments, and gender-responsive policies. By aligning parental aspirations with supportive policies and removing structural barriers, rural children can be provided with equitable opportunities to access quality ECE. Ultimately, investing in rural early childhood education is not only a moral imperative but also a developmental strategy with far-reaching social and economic benefits.

Keywords: Early childhood education, rural communities, parental motivation, Human Capital Theory, Capability Approach, Social Reproduction, Feminist Theory

Introduction

Early childhood education (ECE) is widely acknowledged as a foundational stage in human development, with far-reaching implications for cognitive growth, social integration, and long-term economic productivity. Global education agendas, including the United Nations Sustainable Development Goals (SDGs), particularly Goal 4, underscore the importance of ensuring inclusive and equitable access to quality education from the earliest years of life (UNESCO, 2021). Despite this global consensus, access to ECE remains profoundly unequal, with children in rural communities disproportionately excluded from early learning opportunities.

In developing countries such as Nigeria, rural contexts reveal a persistent contradiction. Many parents value education and demonstrate strong aspirations for their children's schooling. Structural realities significantly constrain their ability to translate these aspirations into sustained educational participation. Endemic poverty, poor physical infrastructure, shortages of qualified early childhood educators, socio cultural norms, and weak policy implementation collectively undermine access to quality ECE in rural areas (Okpala, 2020; Ede & Igwe, 2022). These barriers extend beyond individual household limitations and reflect deeper systemic inequities embedded within educational and governance structures.

The continued marginalisation of rural children from early childhood education has serious implications. Early educational exclusion not only widens achievement gaps before formal schooling begins but also reinforces intergenerational cycles of disadvantage, limiting social mobility and perpetuating structural inequality. From a social justice perspective, unequal access to ECE constitutes a denial of children's fundamental rights and undermines national commitments to inclusive development.

Against this backdrop, there is a compelling need for a theoretically grounded analysis that moves beyond descriptive accounts of access challenges to interrogate the structural forces shaping educational exclusion in rural communities. This study responds to that need by adopting an integrated theoretical framework drawing on Human Capital Theory, the Capability Approach, and Social Reproduction Theory. By doing so, it seeks to explain why parental motivation and demand for education persist despite adversity, while simultaneously illuminating how institutional and systemic barriers constrain educational opportunities.

The rationale for this study lies in its potential to bridge theory and policy by offering a nuanced understanding of ECE access in rural settings. By foregrounding structural inequality alongside parental agency, the study provides an analytical foundation for equity-oriented policies and collaborative interventions aimed at expanding access to quality early childhood education in rural communities. Such insights are essential for designing inclusive educational strategies capable of breaking cycles of disadvantage and advancing sustainable human development.

Method

This paper adopts a theoretical and analytical approach in examining the barriers to accessing early childhood education (ECE) in rural communities. Rather than relying on primary data collection, the paper synthesises insights from existing literature, policy documents, and theoretical frameworks to provide a critical perspective on the issue.

Relevant theories such as Human Capital Theory, Ecological Systems Theory, Social Reproduction Theory, Capability Approach, and Feminist Theory are employed as interpretive lenses for understanding the systemic, cultural, and socioeconomic obstacles affecting rural ECE access. These theories are used to structure the analysis and highlight the multi-dimensional nature of the problem.

The method involves a comparative review of global and Nigerian contexts, identifying both universal and context-specific barriers. Scholarly articles, reports from international organizations (for example, UNESCO, UNICEF, World Bank), and government policy documents are consulted to ground the arguments in credible evidence.

Through this conceptual and argumentative strategy, the paper seeks not only to highlight barriers but also to provoke dialogue on how theoretical insights can inform practical interventions for expanding access to ECE in rural communities.

Analytical Procedure Flow Diagram

Selection of Theoretical Lenses
→ Human Capital, Ecological Systems, Capability,
Social Reproduction, Feminist Theories
↓
Review of Literature & Policy Documents
→ UNESCO, UNICEF, World Bank reports; Nigerian ECE policies;
scholarly works on rural education challenges
↓

Thematic Categorization of Barriers
→ Socioeconomic (poverty, cost of schooling)
→ Infrastructural (inadequate facilities, poor transport)
→ Cultural (gender norms, indigenous practices)
→ Policy-related (funding gaps, lack of trained teachers)
↓
Application of Theoretical Frameworks
→ Human Capital → economic impacts of poor ECE
→ Ecological Systems → family, community, institutional interactions
→ Capability Approach → real opportunities for children's learning
→ Social Reproduction → cycles of inequality
→ Feminist Theory → gender disparities in ECE access
↓

Critical Synthesis and Positioning
→ Barriers are interlinked, structural, and cultural
→ ECE access in rural areas requires holistic interventions
↓

Implications for Policy and Practice
→ Invest in rural infrastructure & teacher training
→ Address cultural and gender-based barriers
→ Promote parental/community engagement
→ Design policies responsive to local realities

Theoretical Framework

Human Capital Theory: Human Capital Theory views education as an investment that enhances individual productivity and national economic performance (Becker, 1964). However, in rural settings, families facing poverty and immediate survival needs often deprioritise ECE, leading to underinvestment in early childhood learning (Psacharopoulos & Patrinos, 2023; World Bank, 2022). Human Capital Theory, popularised by economists such as Gary Becker (1964) and Theodore Shultz (1961), posits that investments in education, health, and skills development increase an individual's productivity and economic value. In this framework, education, particularly early childhood education (ECE), is viewed as a fundamental investment in the development of human capabilities, which in turn contributes to economic growth and social well-being.

Application to Early Childhood Education (ECE)

From the perspective of Human Capital Theory, early childhood education is one of the most cost-effective forms of educational investment. Research demonstrates that quality ECE yields high returns in the form of improved cognitive and social development, better health outcomes, higher school achievement, and increased lifetime earnings (Heckman & Masterov, 2007). Consequently, barriers to accessing ECE in rural communities

represent not just educational or social deficits but also lost opportunities for human capital formation and national development.

Barriers Identified through Human Capital Lens.

***Inadequate Investment in Rural Education Infrastructure*;** Rural areas often suffer from underinvestment in basic educational facilities, trained teachers, and learning materials. This limits the availability and quality of ECE services, thus impeding the early development of human capital among rural children (UNESCO, 2021). Human Capital Theory underscores the long-term economic consequences of this underinvestment, including intergenerational poverty and regional disparities in development.

Economic Constraints on Families: Low household income levels in rural communities often result in families being unable to afford ECE fees, uniforms, transport, or learning materials. In Human Capital Theory, such financial barriers represent a failure to allocate resources toward optimal investments in child development. Children from poor households consequently miss out on foundational skills critical for future productivity (World Bank, 2022).

Perceived Low Return on Education: In rural communities where employment opportunities are limited or where subsistence agriculture dominates, parents may perceive limited returns from investing in early education. Human Capital Theory suggests that individuals calculate the potential returns from educational investment. If parents do not foresee tangible benefits from ECE, they are less likely to prioritise it, leading to lower enrolment and retention rates in rural areas (Psacharopoulos & Patrinos, 2018).

Gender and Cultural Norms: Cultural beliefs and gender norms may also serve as barriers. For instance, in some rural settings, early learning is not seen as necessary for girls or young children generally. Human Capital Theory highlights that such biases prevent the full development of a population's productive capacity, weakening a country's overall economic potential. Empirical evidence indicates that gender and cultural norms can significantly hinder early education participation for girls in rural contexts. In Nigeria, for example, girls account for approximately 60 per cent of the estimated 10 million out-of-school children, with cultural expectations and early marriage cited as major barriers to their sustained participation in education (UNGEI, 2022). Within this context, roughly 30 per cent of girls aged 9–12 have never attended school at all, reflecting deeply rooted norms that deprioritise formal learning for female children compared with boys (UNGEI, 2022). Nationally, literacy disparities further illustrate this gap: rural female literacy among young women aged 15–24 stands at only 42 per cent, compared with 68 pe rcent in urban areas, signalling cumulative disadvantages beginning in the earliest educational stages (IJRTI, 2025). Broader global data on early childhood care and education also reveal stark geographic and socioeconomic inequities, with rural–urban gaps in pre-school participation exceeding 40 percentage points in some countries, underscoring how location-linked norms and resource constraints intersect to limit early learning access (PMCID, 2020–2018).

From the perspective of Human Capital Theory, these gendered exclusions in early education represent not only an immediate inequity in learning opportunities but also a long-term barrier to developing the full productive potential of the population. When girls, especially in rural communities, are systematically less likely to enter organised learning environments or to transition into higher levels of schooling, their future labour force participation, earnings potential, and contributions to economic growth are diminished, reinforcing cycles of poverty and underdevelopment.

Lack of Parental Education and Awareness: Parents with limited formal education may not understand the long-term benefits of ECE. From a human capital viewpoint, this lack of awareness leads to underinvestment in early education, as parents fail to recognise it as a critical phase for skill formation and future economic productivity (Becker, 1993). Applying Human Capital Theory to the issue of early childhood education in rural communities helps to frame these barriers not merely as logistical or policy failures, but as critical missed opportunities for national development. Investments in rural ECE are essential not only for promoting equity and inclusion but also for fostering long-term economic growth through the development of a well-equipped, productive citizenry. Addressing these barriers requires deliberate policy strategies to reduce economic inequalities, promote awareness of ECE's value, and ensure equitable resource distribution across urban and rural areas.

Ecological Systems Theory: Bronfenbrenner's (1979) model explains child development as shaped by multiple environmental systems. In rural areas, the **microsystem** lacks supportive family and school environments. The **mesosystem** is weakened by poor home-school linkages. The **ecosystem** offers limited community support. The **macrosystem** reinforces cultural norms that may deprioritise education, especially for girls (Bigrigg & O'Connor, 2021).

Ecological Systems Theory, developed by Urie Bronfenbrenner (1979), emphasises that a child's development is influenced by multiple layers of environmental systems that interact dynamically. These systems range from the immediate settings in which a child lives (microsystem) to the broader socio-cultural and policy environments (macrosystem). Applying this theory to Early Childhood Education (ECE) in rural communities allows for a holistic understanding of the complex, interrelated barriers that hinder access to quality early learning opportunities.

Application of Ecological Systems Theory to ECE Access Barriers

This system includes the child's family, caregivers, peers, and early education centres. In many rural settings, parents may have limited formal education and may not recognise the value of early childhood education (ECE). Their beliefs and behaviours directly affect children's enrolment and participation in early learning (Bronfenbrenner, 1979; Tudge et al., 2009). Poverty and Household Responsibilities: Children may be kept at home to assist with farming or household chores due to economic necessity, reducing their chance to attend school (UNESCO, 2021; World Bank, 2022). This level includes the interactions between key microsystems such as the home, school, and community. In rural communities, poor communication between caregivers and educational providers can result in misunderstandings, low enrolment, or dropout. Traditional norms and minimal awareness about the benefits of early education may result in a lack of community-driven demand or support for ECE services (Woodhead, 2006; Tadesse *et. al*., 2020).

An ecosystem level is a setting that influences the child indirectly, such as local government bodies, media, or the parents' workplaces. Government policies may exist on paper but are poorly implemented in rural areas, resulting in inadequate infrastructure, teacher shortages, and a lack of learning materials (Akinwale, 2020; UNESCO, 2021). Parents working long hours or engaging in subsistence farming may not have the time or flexibility to take children to ECE centers (World Bank, 2022). The macrosystem level also represents a larger socio-cultural and political context that shapes all other systems. In some rural societies, early education for girls or young children is not prioritised due to prevailing gender roles or cultural undervaluing of formal education at early ages. Structural inequalities and neglect of rural regions in national planning perpetuate the underdevelopment of education systems in these areas (Bronfenbrenner, 1979; Penn, 2008).

The chronosystem level, being a temporal dimension, includes the dimension of time, encompassing life transitions and historical events. Long-standing socio-economic disadvantages and the persistent exclusion of rural communities from development initiatives have entrenched barriers to ECE. Rural-to-urban migration, family breakdowns, or changes in farming practices may impact children's access to consistent educational opportunities (Garcia *e. al*., 2008; Tudge *et al*., 2009). Using Ecological Systems Theory reveals that barriers to accessing early childhood education in rural communities are multifaceted and interconnected across multiple levels of influence. Addressing these challenges requires integrated interventions that span family support, community engagement, policy reform, cultural sensitivity, and long-term investment. Solutions must consider not only the child but the broader social systems that support or hinder their development and access to educational opportunities (Bronfenbrenner, 1979; UNESCO, 2021).

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Barriers to Accessing Early Childhood Education in Rural Communities

Despite strong parental motivation, children in rural areas face multiple obstacles to accessing early education.

Poverty remains the most significant challenge. Many rural families struggle with subsistence living, making it difficult to afford school fees, uniforms, and materials, even when education is officially "free" (UNICEF, 2022). Financial constraints often force parents to choose between sending children to school and engaging them in income-generating activities.

Infrastructure deficits further compound the problem. Rural areas frequently lack adequate school buildings, classrooms, and furniture. Where schools exist, they are often poorly maintained, overcrowded, and located far from children's homes, leading to issues of distance and safety (World Bank, 2020). Teacher shortages are another barrier, as qualified educators often prefer urban postings, leaving rural schools understaffed or staffed with untrained teachers. Empirical research and national education data indicate that qualified teachers in Nigeria are unevenly distributed between urban and rural schools, with a persistent preference among many teachers for urban postings where living conditions, infrastructure, and professional opportunities are comparatively better. According to the 2022–2023 Universal Basic Education Commission (UBEC) National Personnel Audit, Nigeria faced a shortage of approximately 194,876 teachers at the primary school level, and many states had not recruited new teachers for five years, compounding staffing gaps particularly in rural schools (UBEC, 2023). The Teachers Registration Council of Nigeria and education stakeholders have also noted that the shortage of qualified teachers is more pronounced in rural communities, where some schools are left with only one or two teachers to manage large student populations (TRCN; Dawn Herald News, 2025). A comparative study within the Federal Capital Territory found marked inequalities in teacher quality and deployment: while 86 percent of teachers in urban schools had at least the Nigeria Certificate in Education (NCE) or higher, only 58 percent of teachers in rural schools met that qualification level, and rural schools had a significantly worse teacher-student ratio (1:59) than urban schools (1:37) (Ijrs=i, 2025). These patterns reflect a broader deployment challenge where many qualified educators seek urban postings, leaving rural schools understaffed or staffed with less qualified teachers, contributing to uneven educational outcomes across geographic areas.

Cultural barriers also play a role. In some communities, traditional beliefs discourage formal education, especially for girls. Early marriages, gender stereotypes, and preference for boys' education contribute to inequality in access (Ede & Igwe, 2022). Governance and policy failures exacerbate these issues. Weak monitoring, corruption, and a lack of political will often result in poor implementation of rural education policies. Finally, environmental challenges such as floods, droughts, or conflicts in rural communities can disrupt schooling and make access unpredictable. Collectively, these barriers create a systemic web of exclusion that undermines children's right to early education.

Motivating Factors for Parental School Enrollment in Rural Areas

Despite facing economic difficulties and limited infrastructure, parents in rural areas often show a strong commitment to sending their children to school. A central driver of this motivation is the expectation that education can open up better economic opportunities. Education is widely regarded as an investment that enhances children's future employability and potential income. For families dependent on subsistence farming or low-income work, schooling represents a pathway out of poverty and a means for children to provide long-term financial support to their households (World Bank, 2022). Closely associated with this is the desire to break the cycle of intergenerational poverty. Parents recognise that acquiring literacy and numeracy skills through formal education can improve both their children's job prospects and the family's ability to engage with modern economic practices, such as enhanced farming methods and active participation in markets (Akinware, 2020).

Government policies and community advocacy also influence parental decisions. Initiatives promoting Universal Basic Education (UBE) in Nigeria, which guarantee free and compulsory schooling, encourage parents to perceive education as both a right and a necessity. Local leaders and non-governmental organisations often reinforce these messages, further motivating school enrollment (UBEC, 2021). Alongside government efforts, aspirations for social mobility remain important. In many rural communities, having children in school is a source of pride and social recognition. Parents often express satisfaction when their children acquire literacy skills and advance to higher levels of education, which enhances the family's standing within the community (Olatunji*et.al.,* 2024).

Cultural and religious considerations also shape school enrollment. In areas where faith-based institutions operate schools, parents are encouraged by the opportunity for their children to receive both moral and academic instruction. Furthermore, parents value the cultural capital provided by formal education, including improved communication, confidence, and leadership abilities (Le *et al.,* 2023). Gender equity has also become an important consideration. Although traditional norms have historically limited girls' participation in schooling, increasing awareness of the benefits of girls' education, such as lower rates of early marriage, better family health, and enhanced household income, has encouraged parents to educate both boys and girls (UNESCO, 2021).

Practical factors further contribute to parental motivation. Schools are often seen as secure environments that provide supervision, reducing the childcare burden for parents engaged in farming or petty trading. Programs such as school feeding initiatives attract parents by addressing children's nutritional needs while also alleviating household expenses (Garcia *et.al.,* 2008). The presence of successful role models from the community who have leveraged education to enter respected professions, such as teaching, healthcare, or public service, reinforces parents' belief in the transformative potential of schooling (Business Day NG, 2024).

Collectively, these factors demonstrate that parental motivation for school enrollment in rural areas extends beyond immediate financial concerns. It is intricately linked to long-term aspirations, including upward social mobility, community recognition, gender equality, and overall community well-being.

Theoretical Perspectives

To understand the factors influencing rural parents' decisions regarding education, three theoretical frameworks offer valuable insights. Human Capital Theory underscores education as an investment that enhances individual productivity, income potential, and broader national development (Schultz, 1961; Becker, 1993). In rural contexts, parents' economic motivation aligns with this perspective, as they view schooling as a pathway to future prosperity. The Capability Approach (Sen, 1999; Nussbaum, 2011) expands this focus by emphasising that education should not only generate economic returns but also broaden children's freedoms and life opportunities. This framework draws attention to structural inequalities that limit rural children's educational choices and constrain their capabilities.

Social Reproduction Theory (Bourdieu, 1977) highlights how education systems can perpetuate existing social inequalities. Children from low socioeconomic backgrounds in rural areas often encounter systemic barriers that reproduce cycles of poverty, even when parents are highly motivated. Together, these three frameworks offer a comprehensive lens: education as an economic investment, a process that expands human capabilities, and a system influenced by social inequality.

Early childhood education (ECE) is universally recognised as the foundation of lifelong learning and human development. In rural Nigerian communities, it embodies both hope and challenge. This study highlights the paradox whereby rural parents exhibit strong motivation to educate their children, driven by economic aspirations, social prestige, cultural expectations, gender empowerment, religious values, and developmental goals, yet systemic barriers often impede access and success.

The theoretical perspectives employed, Human Capital Theory, Social Reproduction Theory, and the Capability Approach, reveal that parental motivations are multifaceted. Education is valued not solely as a financial investment but also as a source of social recognition, cultural refinement, and human flourishing. Consequently, policies must move beyond narrow economic frameworks to embrace the broader human, social, and cultural dimensions of education.

However, parental motivation alone is insufficient to guarantee access. Even when parents recognise the value of schooling, systemic challenges such as inadequate infrastructure, teacher shortages, gender disparities, and limited financial resources can prevent children from attending or thriving. This underscores the urgent need for deliberate, equity-focused interventions. Strategies such as expanding financial support, improving school infrastructure, strengthening teacher recruitment and training, promoting gender-sensitive policies, fostering community engagement, and enhancing governance are essential to bridge the gap between parental aspirations and educational realities.

Investing in ECE in rural areas is not merely a social service; it is a strategic developmental initiative with far-reaching impacts. Research demonstrates that early education enhances cognitive and socio-emotional development, improves later academic performance, reduces poverty, and promotes gender equity (Heckman, 2011; UNESCO, 2021). For Nigeria, where a significant proportion of the population resides in rural areas, equitable access to ECE is critical for national development. Ignoring these gaps risks entrenching inequality and undermining both individual potential and collective progress.

In conclusion, the future of rural education depends on integrated, inclusive, and context-sensitive policies. Rural parents have shown their willingness to invest in their children's education; it is now the responsibility of governments, policymakers, civil society, and international partners to remove the barriers that impede these aspirations. Aligning policy with parental motivations while addressing systemic constraints can create an enabling environment in which every rural child has access to quality early childhood education.
Ultimately, ensuring universal access to ECE is not merely about schooling; it is about justice, dignity, and the right of every child to reach their full potential. Societies that prioritise rural education stand to gain stronger economies, healthier populations, and more cohesive communities.

Empirical Evidence on Barriers to Rural ECE

Numerous empirical studies have documented the multifaceted barriers that hinder access to early childhood education (ECE) in rural communities, especially in low- and middle-income countries. These barriers are linked to socioeconomic, geographic, institutional, and cultural factors that collectively undermine children's right to quality early learning. Empirical research reveals that rural areas often lack adequate ECE infrastructure. Facilities are frequently poorly equipped, with limited access to safe classrooms, sanitation, playgrounds, and age-appropriate learning materials. For instance, in Nigeria, Akinware (2020) found that over 60% of public ECE centres in rural areas lacked basic infrastructure, contributing to low enrollment and attendance rates. "Children in rural settings are often enrolled in makeshift classrooms with no toilets, unsafe environments, and little to no access to educational resources" (Akinware, 2020). Poor classroom conditions and lack of learning materials reduce engagement (Bigrigg & O'Connor, 2021).

Studies across Sub-Saharan Africa and South Asia show that rural ECE centres suffer from severe shortages of trained teachers. Even when present, many teachers lack formal early childhood training, which affects the quality of interaction and instruction. UNESCO (2021) reported that rural regions in over 30 low-income countries have a teacher-child ratio exceeding 1:50, far above the recommended standards. "A lack of qualified early childhood educators in rural zones compromises the developmental outcomes of young learners" (UNESCO, 2021). Research by Garcia *et al*. (2008) highlights how direct and indirect costs, including enrollment fees, transportation, uniforms, and feeding, serve as critical barriers to ECE access for low-income rural families. These costs are often prohibitive, particularly for households dependent on subsistence farming. "Despite policies on free ECE, families in rural communities still incur costs that deter enrollment, particularly for girls" (Garcia *et. al.,* 2008; Olanrewaju & Ajayi, 2022). Poverty, fees, transport costs, and lost child labour opportunities reduce enrollment (World Bank, 2022; UNICEF, 2023).

Empirical studies also point to the role of cultural norms in discouraging ECE participation, especially for girls. In parts of rural South Asia and Sub-Saharan Africa, early education is viewed as unnecessary, particularly when gender roles prioritise domestic work over schooling. Tadesse *et. al.* (2020) found that in rural Ethiopia, over 40% of parents believed girls were better off staying at home until primary school age. "Cultural beliefs remain strong determinants of educational choices, often marginalising girls' access to early learning" (Tadesse *et. al.,* 2020). Gender-based exclusions persist due to patriarchal values (Le Mat & Niyozov, 2023). Long distances between homes and ECE centres, coupled with poor transportation networks, significantly reduce access. A study in rural India by Muralidharan and Singh (2019) showed that ECE enrollment decreased by nearly 30% in villages located more than 2 kilometres from the nearest preschool. "Distance and poor roads make it difficult for caregivers to regularly bring children to school, particularly during rainy seasons" (Muralidharan & Singh, 2019).

Many countries have established policies promoting universal access to early childhood education (ECE), recognising its critical role in fostering cognitive, social, and emotional development. However, the implementation of these policies often lags behind in rural areas due to budgetary constraints, weak monitoring

systems, and urban-centred resource allocation. For example, in China, despite national plans to expand ECE, rural preschools continue to face shortages of qualified teachers and inadequate infrastructure compared with urban counterparts (Zhang & Hu, 2015). Similar patterns are observed in Brazil, Chile, and Poland, where decentralisation and uneven funding have resulted in rural–urban disparities in both enrollment and quality (OECD, 2025). In Africa, countries such as Ghana, Ethiopia, Kenya, Lesotho, Mozambique, Rwanda, and Zambia report that children in rural communities are significantly less likely to access formal ECE programs, and those programs often suffer from under qualified staff and limited facilities, despite formal national commitments to universal coverage (UNESCO, 2023; GPE/KIX, 2023). These findings indicate that while universal ECE policies exist in theory, rural populations remain disadvantaged in practice, highlighting persistent inequities in resource allocation, program quality, and workforce deployment.

Anyon (2005) argues that educational reforms tend to favour urban constituencies, leaving rural children behind. "The gap between policy and practice is widest in rural regions, where decentralisation has often resulted in neglect rather than empowerment" (Anyon, 2005). National policies often lack funding or local relevance, and parents may not understand ECE's value (Adefeso-Olateju*et. al.,* 2021; Robeyns & Walker, 2023). Empirical evidence underscores that barriers to ECE in rural communities are systemic, persistent, and deeply embedded in broader social and economic inequalities. Addressing these barriers requires not only increased investment and infrastructure development but also culturally responsive policies, gender-sensitive programming, and inclusive community participation.

Discussion and Implications

The challenges limiting access to early childhood education (ECE) in rural communities are multifaceted and deeply interconnected, necessitating reforms that are theoretically informed and practically grounded. Although many rural parents value education and are motivated to enrol their children in school, persistent obstacles, such as poverty, inadequate infrastructure, restrictive cultural practices, and weak governance structures, continue to impede access. Addressing these challenges requires a comprehensive and coordinated strategy that recognises the interaction of economic, social, cultural, and gender-related factors.

From the standpoint of Human Capital Theory, education represents a strategic investment that yields returns at both individual and societal levels. This perspective suggests that governments should reduce the financial pressures faced by rural households through targeted interventions such as conditional cash transfers, school feeding initiatives, and subsidies for learning materials. By alleviating the cost burden of schooling, such policies can enhance enrollment and sustained participation among children from low-income families. Investment in rural ECE should therefore be viewed not as social welfare spending, but as a long-term commitment to national economic growth and workforce development (Becker, 1993; Heckman, 2011).

Ecological Systems Theory emphasises that children's educational experiences are shaped by the dynamic relationships among their home, school, and community environments. In rural settings, strengthening these interconnections is essential. Community–school collaborations, for instance, can help mitigate distance-related challenges through shared transportation arrangements or the establishment of locally based learning centres. Increased parental involvement in school management and decision-making can also improve accountability and ensure that educational provision aligns with local needs. When families, communities, and schools work collaboratively, they create a supportive ecosystem that promotes access, participation, and retention.

The Capability Approach shifts attention beyond mere school enrollment to the actual opportunities children have to learn and thrive. In many rural areas, poor infrastructure, insufficient teacher supply, and unsafe learning conditions significantly constrain children's educational capabilities. Evidence from South Africa indicates that rural ECE practitioners often operate under substandard working conditions, with limited access to resources and professional development compared to their urban counterparts, thereby diminishing the quality of learning experiences available to children (Zulu*et. al.,* 2022). Improving classroom safety, providing gender-sensitive sanitation facilities, and ensuring the availability of well-trained teachers are critical to expanding children's real freedoms and educational opportunities.

Social Reproduction Theory draws attention to the ways education systems can reinforce existing social inequalities when curricula and teaching practices fail to reflect learners' social and cultural realities. Research suggests that many rural teachers lack training in inclusive and context-responsive pedagogy, while parental engagement in schooling remains limited, leading to learning environments that marginalise children and perpetuate exclusion (Mabasa-Manganyi, 2023). To disrupt these patterns, rural ECE programs must incorporate culturally relevant curricula, local languages, and indigenous knowledge systems, thereby fostering a sense of belonging and inclusion among learners.

Feminist Theory further highlights the gender-specific constraints that disproportionately affect girls' access to education in rural contexts. Practices such as early marriage, entrenched gender norms, and the scarcity of female educators often restrict girls' participation and persistence in school. Empirical evidence from Northern Nigeria shows that targeted interventions for marginalised girls in rural ECE settings can enhance school readiness and positively transform parental attitudes toward girls' education (Okeke, 2025). Implementing gender-responsive strategies, including teacher training on gender sensitivity and increasing the recruitment of female teachers, is therefore vital for achieving equity in educational access and outcomes (Rarieya *et. al.,* 2024).

Taken together, these theoretical perspectives indicate that overcoming barriers to rural early childhood education requires integrated and sustained action. Governments must prioritise infrastructure development, strengthen teacher training and deployment, and provide economic support to vulnerable families. At the same time, community-driven initiatives such as active parent–teacher associations and partnerships with non-governmental and faith-based organisations can enhance service delivery and local ownership. Effective monitoring and evaluation mechanisms are also essential to ensure accountability and equitable resource distribution. By drawing on the Capability Approach, Social Reproduction Theory, and Feminist Theory, policymakers can design interventions that not only address economic, cultural, and gender-based constraints but also empower rural communities as key stakeholders in the educational process.

Conclusion

Barriers to early childhood education in rural communities stem from economic hardship, institutional neglect, cultural norms, and gender inequalities, forming interconnected systems of exclusion. These challenges limit access, reduce quality, and disproportionately affect marginalised children, particularly girls. Addressing them requires integrated, equity-oriented strategies that combine investments in infrastructure and teacher deployment with community engagement, culturally responsive curricula, and gender-sensitive programming. Effective policy implementation and robust monitoring are essential to ensure that resources reach intended beneficiaries. By adopting a holistic approach that tackles structural, cultural, and social barriers simultaneously, stakeholders can create enabling environments where all children, regardless of location, can access quality early education, develop their capabilities, and contribute to broader social and economic development.

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TEACHERS' PERCEPTION OF BARRIERS TO INCLUSIVE EDUCATION IN EARLY CHILDHOOD EDUCATION IN OYO EAST LOCAL GOVERNMENT, OYO STATE

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Abstract
This study undertook a bold examination of the challenges educators encounter in adopting inclusive education practices within the Oyo East Local Government Area of Oyo State. Employing a descriptive research design, the research involved a varied sample of 200 teachers from nursery and primary schools throughout the region. The investigation utilised a specially developed tool, titled "Teachers' Perceived Barriers to Inclusive Education in Early Childhood Education," focusing on a key research question and formulating three hypotheses, all evaluated at a significance level of 0.05. Through this comprehensive approach, the research sheds light on the critical challenges that hinder the advancement of inclusive educational practices. The collected data were analysed through various statistical methods, including mean and standard deviation calculations, t-tests, and ANOVA. The results highlighted several key obstacles hindering the advancement of inclusive education: managing large class sizes, limited professional development opportunities available and teachers' ability to communicate effectively with children who have diverse learning needs. The research reveals noteworthy variations in how teachers perceive the obstacles to inclusive education, particularly influenced by gender. Additionally, it highlights a significant correlation between these perceived challenges and the number of years of teaching experience. However, it is interesting to note that no substantial link exists between teachers' qualifications and the barriers. The paper recommends fostering collaboration among teachers, parents, special educators, and other stakeholders to collectively address barriers to inclusive education. It emphasises the need for regular workshops and seminars to manage diverse learning needs effectively.
Keywords: *Barriers, Inclusive education, teachers' perceptions, collaboration*

Introduction

The experiences a child faces during their formative years are vital in influencing their overall growth and the direction of their future. These influences can be both beneficial and detrimental. It is the period where children receive things needed for physical, emotional, intellectual, and social development. In this crucial stage of development, children start to take initiative, mimic behaviours, and cultivate essential habits that will serve them well throughout their educational journey. This foundational period lays the groundwork for all subsequent levels of learning.

Pre-primary education serves as the crucial stepping stone for children before they embark on their primary school journey (NPE, 2013). This early stage is vital in a child's development and is often described as the bedrock for future educational endeavours. It compels us to pay close attention to the quality of learning that occurs during these formative years. As highlighted by Bush (2001), the experiences and education received from birth to age five lay the groundwork for a successful life. Recognising this importance, countries around the globe are diligently striving to ensure that every child has access to high-quality and equitable early childhood education and care. Despite the importance of this period, it is disheartening to see that some children are still being denied the opportunity to be welcomed into regular classrooms to learn and participate in classroom activities, regardless of their abilities or disabilities.

In the words of Adetoun (2003), inclusion is not just a concept; it embodies an enriching journey of embracing new challenges, engaging in additional work, staying updated with the latest information, and

collaborating seamlessly with fellow professionals. Omede (2016) emphasises that inclusion transcends outdated ideas of integration and mainstreaming, which were primarily focused on disability and special educational needs. These former notions often suggested that learners needed to adapt or prove themselves worthy of acceptance within mainstream settings. In stark contrast, inclusion champions a child's inherent right to participate and underscores the school's obligation to welcome every child without exception. Inclusion firmly rejects the separation of children with disabilities into special schools or classrooms. Instead, it prioritises the full participation of all students, honouring their social, civil, and educational rights. Omede (2016) further argues that inclusive education equips learners with disabilities with essential skills applicable both inside and outside the classroom. Rare though they may be, fully inclusive schools dissolve the barriers between "general education" and "special education." They transform their structures to ensure that all children learn harmoniously together.

At its core, inclusive education is rooted in the belief that every student deserves access to a top-notch education tailored to their individual needs, ultimately enhancing their lives. By focusing on the requirements of vulnerable and marginalised groups, this approach seeks to unlock the full potential of each child. The primary aim of inclusive quality education is to eradicate all forms of discrimination and promote social cohesion, as highlighted by UNESCO in 2012.

Inclusive education embodies the commitment to integrating learners with disabilities into mainstream classrooms. However, its scope extends beyond just these learners; it delves into the diverse ways in which all children differ from one another (UNESCO, 2008). Each child arrives at school with a rich tapestry of traits that shape their educational journeys and achievements. As Ouane (2008) notes, a truly inclusive school acknowledges and embraces the various differences each child brings, which include factors such as ethnicity, race, language, disability, ability, religion, and socioeconomic background. It is essential for educators to be attuned to the unique needs and interests of every learner.

In 2001, UNESCO underscored the vital importance of the Universal Declaration of Human Rights, introduced in 1948, which enshrines education as an essential right for every child. This right serves as a crucial gateway to achieving and maintaining meaningful learning experiences. It is imperative that educational programs are carefully crafted and implemented, taking into account the unique interests, talents, characteristics, and learning needs of each child. Additionally, the global community has increasingly recognised the importance of education for individuals with disabilities, fueled by United Nations initiatives and declarations aimed at realising Education for All (EFA) by 2015 (Smith, 2002). The EFA policy is committed to creating an inclusive educational landscape for learners with disabilities, ensuring they receive equitable access to high-quality, relevant education. Member states of the UN have reaffirmed their dedication to upholding human rights, advancing educational equity, and fostering community development for individuals with disabilities (Pottas, 2000). By embracing inclusion and integrating children with developmental disabilities into mainstream educational settings, we honour a fundamental right of every child: the right to equality.

While the concept of inclusion has made strides, it still falls short of fulfilling all the necessary criteria for success across various segments. There is a pressing need for greater support for children with developmental disabilities and their families. A parent's approach to their child's challenges significantly influences the relationships they cultivate within the inclusive educational framework. Inclusion extends beyond just the child facing developmental hurdles; it encompasses their parents and all individuals connected to the child, including parents of typically developing children and their educators. Involving all stakeholders in the inclusive process is vital for cultivating strong relationships, promoting effective collaboration, and establishing a supportive environment for the growth and education of children with developmental disabilities. The foundation of successful inclusive education lies in the experiences that children encounter during their early years. It's also important to recognise the unique needs of every child engaged in this process. Inclusive education aims to support not only those with developmental disabilities but also any child who requires additional help and guidance as they develop. (Mujkanovic, 2018)

Each day, teachers and parents of children with developmental disabilities face a host of challenges. Educators often cite their biggest hurdles as the difficulty in customising educational materials and the lack of professional support available for these students. Additionally, the limited access to teaching resources and tools, combined with inadequate training for staff to effectively assist learners with diverse needs, further complicates their efforts.

In the realm of early childhood education, researchers have diligently examined the obstacles to inclusivity, gaining insights into how various educational stakeholders perceive these challenges. A pivotal study by Paul (2012) shed light on the landscape of inclusive education in Nigeria, revealing the unique perspectives of special educators. The results were striking: female educators reported a notably higher level of confidence in their ability to teach children with special needs when compared to their male colleagues. In a similar vein, Kranjcee *et al*. (2016) explored the thoughts and experiences of teachers as they confronted the hurdles of creating inclusive environments for children with developmental disabilities. This body of research underscores the critical importance of understanding different viewpoints within the educational community, ultimately paving the way for more effective strategies in fostering inclusivity. The research findings indicate that teachers generally support the inclusion process and hold a favourable perspective towards it. However, Amr *et al*. (2016) highlighted that several challenges hinder effective implementation. These include insufficient resources and infrastructure, inadequate government funding, and a lack of teacher feedback about their experiences with inclusion in the classroom.

In their 2023 study, Adedayo and Olaniyi explored the obstacles teachers face in implementing inclusive education. They identified key barriers, such as teachers' attitudes, insufficient facilities, and a lack of acceptance among peers. Interestingly, their findings indicated that teachers' perceptions of these barriers did not significantly differ based on gender. Meanwhile, research by Mujkanovic in 2019 shed light on the perspectives of parents regarding their children's educational settings. Parents of children with developmental disabilities attending mainstream schools overwhelmingly believe that inclusive education is the best path forward, even if the necessary preparations are lacking. Conversely, parents of children in specialised institutions tend to hold negative views about the possibility of their child being educated in a regular school environment, advocating strongly against it.

In her study, Karande (2016) highlights several significant challenges to achieving inclusive education as noted by teachers. These obstacles include a lack of preparedness and training among educators, insufficient classroom support, and various physical barriers. For instance, many schools feature inaccessible pathways for students with mobility issues, with narrow doorways, steep staircases that hinder wheelchair access, and poorly maintained playgrounds that fail to accommodate children with physical disabilities. In their research, Dev and Kumar (2015) discovered that factors such as a teacher's gender, age, and level of education significantly influenced their views on the inclusion of children with learning disabilities (CWLDs) in mainstream classrooms. Interestingly, neither teaching experience nor the specific subject area taught showed any notable impact on these perceptions.

These previous studies have justified the fact that researchers have worked on barriers to inclusive education in early childhood education. However, such research efforts seem to be very scarce, especiallyregarding the perception of teachers in the Oyo East Local Government Area of Oyo State. Therefore, this study seeks to bridge this gap in research by examining the barriers to inclusive education in early childhood as observed by teachers in the Oyo East Local Government Area of Oyo State.

This study holds significant importance as early childhood education serves as the cornerstone for lifelong learning and social integration. Implementing effective inclusive education during this critical period fosters positive attitudes towards diversity and equality among young learners. Furthermore, by exploring the barriers that preschool teachers perceive, we can uncover the challenges they face in fostering inclusive education. This understanding will equip educators with the skills and knowledge needed to adopt effective inclusive practices, ultimately alleviating anxiety and hesitation while nurturing a more welcoming learning environment. Additionally, the insights gained from this research can guide policymakers in assessing the current landscape of inclusive education in preschools, paving the way for the development of more impactful policies and training initiatives for preschool educators.

Statement of the Problem

A significant proportion of children with disabilities in Nigeria continue to experience unequal treatment and limited social inclusion in educational settings. Social stigma and discriminatory attitudes from peers, educators, and the broader community often result in the isolation and bullying of children with disabilities, reducing their participation and engagement in school activities. The challenges faced by children with disabilities can seriously undermine their self-esteem, hinder their motivation to learn, stifle their social

development, and diminish their overall academic success, ultimately restricting their ability to realise their full potential. To foster an inclusive educational environment for these children, it is essential to have the intentional and effective engagement of teachers. They are pivotal in ensuring that every learner, regardless of their abilities, can fully participate in both learning and social activities.

A wealth of research has explored the insights of teachers regarding the hurdles of implementing inclusive education in Early Childhood Education within Oyo East Local Government, Oyo State. Some studies have specifically examined educators' attitudes toward inclusion and their preparedness to support children with special needs. Other investigations have aimed to identify effective strategies for rolling out inclusive education in Nigeria by gathering the viewpoints of special education teachers. Additionally, these findings have provided valuable perspectives from parents of children with developmental disabilities, alongside those of parents of typically developing children.

While previous research has provided important insights, it has missed a crucial element: the perspectives of teachers on the challenges they face in implementing inclusive education in Early Childhood Education within Oyo East Local Government, Oyo State. This study seeks to bridge that gap by delving into teachers' opinions on the barriers to inclusive education in this area. The results will deliver essential insights that can inform policy development, improve teacher training, and enhance classroom practices. Ultimately, this research aims to identify and address the obstacles that impede the effectiveness of inclusive education.

Purpose of the Study

This research delves into the perspectives of teachers regarding the obstacles they encounter while striving to implement inclusive education in early childhood education within the Oyo East Local Government Area of Oyo State. The study is guided by specific objectives that are outlined as follows:

1. To investigate the perceived barriers to inclusive education among teachers in early childhood education settings in Oyo East Local Government, Oyo State.
2. To establish the difference between teachers' perceptions of barriers to inclusive education based on their gender, years of experience, and educational qualifications.

Research Question

What are the perceived barriers to inclusive education among teachers in early childhood education settings in Oyo East Local Government, Oyo State?

Research Hypotheses

H01: There is no significant difference in teachers' perceptions of barriers to inclusive education based on gender.

H02: There is no significant difference in teachers' perceptions of barriers to inclusive education based on years of experience.

H03: There is no significant difference in teachers' perception of barriers to inclusive education based on their educational qualifications.

Methodology

This study adopted a descriptive survey research design. This will help gain an in-depth understanding directly from teachers about their knowledge of the barriers to inclusive education and present this information. Out of 394 teachers working in Oyo East Local Government in Oyo State, 200 nursery and primary school teachers working in Oyo East Local Government Area were selected using criterion sampling, which is a type of purposive sampling. For the purpose of this research, a researcher-designed instrument was used to gather information. The Teachers' Perception of Barriers to Inclusive Education Questionnaire (TPBIEQ). The TPBIEQ contains two sections: A and B. Section A consists of the participants' demographic data, which includes gender, years of experience, and educational qualification. This section enables the researcher to identify participants' gender (male and female), their years of experience (categorised into 1-5 years, 6-10 years, 11-15 years, and 16 years and above), and educationalqualifications (categorised into NCE, HND, B. Ed., and

M.Sc.). The TPBIEQ contains 20 questions addressing teachers' barriers to inclusive education in early childhood education.

To evaluate the effectiveness of the TPBIEQ instruments, copies were distributed to lecturers in the Department of Guidance and Counselling at Emmanuel Alayande University of Education, as well as to experts specialising in Testing, Measurement, and Evaluation from the same institution. These professionals confirmed that the instrument was content-valid, aligning well with the study's variables and demonstrating usability. Their insightful feedback and suggestions were instrumental in refining the final version of the instruments. To assess the reliability of the instrument, essentially its ability to deliver consistent and stable measurements over time, the internal consistency method was employed. The TPBIEQ, which gauges teachers' perceptions of barriers to inclusive education in Early Childhood Education, was administered to a group of 20 teachers from a different location, ensuring no overlap with the study participants. The reliability was quantified using Cronbach's alpha estimate, yielding a robust coefficient of 0.85, thereby affirming its reliability. The data collected were meticulously analysed using various statistical methods, including descriptive statistics, frequency counts, percentages, means, standard deviations, t-tests, and ANOVA.

Answering Research Question

Research Question 1: What are the perceived barriers to inclusive education among teachers in early childhood education settings in Oyo East Local Government, Oyo State?

In answering this research question, the means of responses of the teachers' choice to each items on the questionnaire that addresses their perceived barriers to inclusive education in their schools.

Table 1: Mean and Standard Deviation Analysis Showing Teachers Perceived Barrier to Inclusive Education in Oyo East Local government Early Childhood Education.

S/N			SD
1	Teachers lack adequate training to effectively teach children with special needs in an inclusive classroom setting?	2.73	.901
2	Managing large class sizes hinders the effective implementation of inclusive education?	3.25	.755
3	Many teachers are not aware of the policies and practices of inclusive education?	2.81	.926
4	There are limited professional development opportunities available to enhance teachers' skills in inclusive education?	3.18	.884
5	Teachers face challenges in communicating effectively with children who have diverse learning needs?	3.31	.779
6	Parents oppose inclusive education, believing that children with special needs may disrupt the learning process of others?	3.21	.689
7	Low level of parent's knowledge on inclusive education affects their understanding and acceptance of inclusive education?	3.36	.650
8	Socioeconomic challenges faced by parents negatively impact their support for inclusive education?	3.14	.665
9	Parents prioritize inclusive education for their children	2.57	.684
10	The cultural belief of parents hinder the acceptance of inclusive education in my school	3.04	.850
11	The unavailable of teaching aids and learning materials makes it difficult to implement inclusive education?	3.61	.519

12	The physical setup of classrooms is not designed to accommodate children with special needs?	2.83	.792
13	Assistive devices (e.g., braille machines, hearing aids) are available for pupils who require them?	2.70	.936
14	The school library has resources that address the diverse needs of all learners?	2.74	.786
15	The school provide adequate training for teachers to use assistive technology in the classroom	2.70	.821
16	The content of the curriculum does not accommodate the needs of children with diverse learning abilities?	2.76	.999
17	The pace of the curriculum is too fast for pupils with learning needs	3.06	.806
18	The curriculum lack flexibility to accommodate students with physical or cognitive disabilities	2.80	.757
19	The curriculum fails to integrate alternative learning approaches e.g., visual, auditory) for pupils with different disabilities	3.12	.767
20	The current curriculum does not promote the participation of students with disabilities in mainstream activities	2.76	.842
Grand Mean		**2.98**	

Grand Mean
2 . 9 8

Source: Authors field work 2025

Table 1 highlights teachers' views on the obstacles to inclusive education within early childhood settings in Oyo East Local Government, Oyo State. The feedback gathered from various survey items indicates that these factors are perceived as significant barriers, as evidenced by a benchmark weighted mean score of 2.50, with actual responses reaching an impressive 2.98 well above the threshold. This suggests that educators in Oyo East firmly believe these challenges hinder the effective implementation of inclusive education in their region.

H_{01}: There is no significant difference on teachers' perception of barriers to inclusive education based on gender.

Table 2 Summary Table of Independent t-test Analysis Showing the Significant Difference on Teachers perceived Barriers to Inclusive Education Based on Gender.

Male	45	61.1333	3.37504				
				-2.602	`198	.006	Significant
Female	155	59.2323	4.54675				

Source: Author's field work 2025

Table 2 shows the significant difference on teachers' perceived barriers to inclusive education based on gender. The findings revealed that there is significant difference (t= -2.602; df 198; P<0.O5). The hypothesis is therefore rejected in the light of the result since the significant value is less than 0.05. This implies that there is significant difference in teachers barriers to inclusive education based on gender in Oyo east local government, Oyo state

$Ho_{2:}$ There is no significant difference on teacher's perception of barriers to inclusive education based on years of experience.

Table 3: ANOVA Showing difference between Teachers' Perception of Barriers to Inclusive Education in Early Childhood Education based on Years of Experience.

Variable	Sum of Squares	DF	Mean Square	F	Sig .	Decision
Between Group	188.271	2	94.136			
			5.119	.007	Significant	
Within Group	3622.609	197	18.389			

*Significant P<.05

Data in Table 3 showed the F-Value calculated of 5.119, while p-value is .007. Since the p-value is less than the significant value of 0.05. Therefore, the hypothesis which stated that there is no significant difference between teachers' perception of barriers to inclusive education based on years of experience is rejected which implies that there is significant difference between teachers' perception of barriers to inclusive education based on years of experience.

$Ho_{3:}$ There is no significant difference on teachers' perception of barriers to inclusive education based on educational qualifications.

Table 4: ANOVA Showing the Difference between Teachers' Perception of Barriers to Inclusive Education in Early Childhood Education Based on Qualification.

Variable	Sum of Squares	DF	Mean Square	F	Sig .	Decision
Between Group	24.229	2	12.114			
			.630	.534	Not Significant	
Within Group	3786.651	197	19.222			

*Significant P<.05

Data in Table 4 showed the F-Value calculated of .630, while p-value is .534. Since the p-value is greater than the significant value of 0.05. Therefore, the hypothesis which stated that there is no significant difference between teachers' perception of barriers to inclusive education based on qualification is retained which implies that there is no significant difference between teachers'perception of barriers to inclusive education based on qualification.

Discussion of Findings.

One of the findings revealed that there are barriers to inclusive education in early childhood education in Oyo East Local Government, Oyo State. This was revealed by the overall mean value of 2.98 of the total response from the respondents, which is greater than the cut-off points of 2.50. There are many barriers to inclusive education in early childhood education, including managing large class sizes, limited professional development opportunities available, teachers' ability to communicate effectively with children who have diverse learning needs, parents opposition to inclusive education, level of parents knowledge, socio-economic challenges faced by parents and the unavailability of teaching aids as the major barriers perceived by the teachers.

This insight is echoed by Amr *et. al*. (2016), who highlighted that the absence of essential materials, inadequate infrastructure, insufficient government funding, and the lack of teacher involvement in fostering inclusion are significant barriers to effective implementation. This perspective is further supported by the research conducted

by Adedayo and Olaniyi (2023), which explored teachers' perceived obstacles to inclusive education. Their findings identified key challenges, such as teacher attitudes, limited facilities, and a lack of acceptance among peers, all of which hinder progress toward inclusive practices.

The findings of hypothesis one revealed that there is a significant difference in teachers' perceived barriers to inclusive education based on gender in Oyo East Local government, Oyo state. This was revealed by the significant value of the response .006 which is less than 0.05. This study is in line with Paul's (2012) study on how to make inclusive education work in Nigeria by evaluating special educators' attitudes. The study revealed that female respondents indicated more confidence to teach special needs children than male respondents. Also, Adedayo and Olaniyi (2023) in their work on teachers' perceived barriers to inclusive education found that there is no significant difference in teachers' perceived barriers to inclusive education based on gender.

Another finding revealed that there is a significant difference between teachers' perceptions of barriers to inclusive education based on years of experience. This does not go in line with

Dev and Kumar (2015) study whichfound out that teaching experience and teaching field made no significant difference in their perception.

Furthermore, hypothesis three findings revealed that there is no significant difference between teachers' perceptions of barriers to inclusive education based on qualification.

Conclusion

The study concludes that multiple factors hinder the effective implementation of inclusive education in early childhood education settings within the Oyo East Local Government Area, Oyo State.

Recommendations

1. Addressing these barriers requires a multi-stakeholder approach emphasising adequate funding, teacher empowerment, and curriculum reform.
2. Strengthening teacher capacity through sustained professional development and fostering an inclusive school culture remain vital to achieving equitable early childhood education in Oyo East Local Government Area, Oyo State.

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EARLY CHILDHOOD EDUCATION: A VERITABLE TOOL FOR SUSTAINABLE EDUCATIONAL ADVANCEMENT IN NIGERIA

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Abstract
Early Childhood Education (ECE) is a crucial foundation for sustainable educational development, particularly in Nigeria, where access to quality early learning remains unequal. ECE encompasses both formal and informal programs that foster children's cognitive, emotional, and social growth from birth to age eight. It plays a vital role in addressing educational disparities and building human capital. This study highlights the strategic importance of ECE, linking access to improved long-term outcomes, such as literacy, school readiness, and reduced grade repetition. Urban areas tend to have better ECE implementation compared to rural regions. The paper emphasises the significance of early learning windows; critical periods of brain development when educational input has the greatest impact. Utilising these windows effectively helps children succeed in school and decreases dropout rates. The study advocates for increased investment and community-based approaches to expand and improve ECE across Nigeria, ensuring equitable and sustainable progress in the education sector.
Keywords: Early Childhood Education, educational development, literacy proficiency, school readiness, educational disparities

Introduction

Early Childhood Education (ECE) is widely recognised as the cornerstone of lifelong learning and national development. Globally, robust ECE systems have been linked to improved cognitive, emotional, and social outcomes, higher literacy levels, reduced school dropout rates, and long-term economic benefits (Heckman, 2011; OECD, 2017; UNESCO, 2021). However, many developing countries, including Nigeria, continue to struggle with providing equitable and high-quality early learning opportunities due to systemic challenges such as limited funding, inadequate infrastructure, and uneven policy implementation (World Bank, 2020).

In Nigeria, ECE is acknowledged in national policies as a crucial phase in the educational continuum, yet its implementation remains inconsistent across regions (Federal Ministry of Education [FME], 2021). Delivery is fragmented because it is offered through a mix of formal pre-primary schools, community centres, and home-based programs, with significant variations in quality and accessibility (UNICEF Nigeria, 2019). While urban areas tend to benefit from better-resourced ECE services, rural and marginalised communities often face serious barriers, including a lack of trained teachers and poor facilities (NPC & ICF, 2019). These disparities reinforce existing educational inequalities and hinder the country's progress toward inclusive and sustainable development goals (UNESCO, 2021).

The early years of a child's life are marked by rapid brain development, during which educational experiences shape critical skills such as language, self-regulation, and social interaction (Shonkoff & Phillips, 2000). High-quality ECE contributes to school readiness, boosts literacy and numeracy, reduces grade repetition, and fosters adaptabilityskills vital in a dynamic global environment (UNICEF, 2019). For Nigeria, with its growing youth population and ambitious development targets, strengthening ECE is key to cultivating a skilled, resilient, and competitive future workforce.

Despite these well-documented benefits, Nigeria ECE sector is beset by multiple challenges. Socioeconomic inequality, geographic disparities, underinvestment, and weak enforcement of education policy continue to

prevent many children, particularly in underserved communities, from accessing quality early learning (UNICEF Nigeria, 2019; World Bank, 2020). This paper explores how ECE can serve as a veritable tool for sustainable educational advancement in Nigeria. It examines the sector's current state, identifies barriers to effective implementation, and proposes strategic interventions, emphasising investment, systemic reform, and community engagement to enhance early learning outcomes and drive national development.

Conceptual Review

Early Childhood Education

Early Childhood Education (ECE) refers to a broad range of educational programs and strategies geared toward children from birth to approximately eight years of age, a critical period for cognitive, emotional, and social development (UNESCO, 2021). ECE encompasses both formal and informal settings. Formal ECE programs include structured environments such as nursery schools, kindergartens, and pre-primary classrooms that follow a curriculum aimed at school readiness. Informal ECE, on the other hand, often occurs in homes, community centres, religious institutions, or through parent-led initiatives, providing learning opportunities that may not follow a rigid curriculum but still foster essential developmental skills (UNICEF, 2019).

In Nigeria in 2013, ECE was formally recognised in the National Policy on Education (2013) as the foundation stage, preparing children for primary education and life-long learning (Federal Ministry of Education [FME], 2021). However, the reality on the ground is varied. In urban areas, formal ECE centres are more prevalent and often better resourced, whereas rural communities frequently rely on informal, community-driven efforts with limited external support (NPC & ICF, 2019). For ECE to serve as a veritable tool for sustainable educational advancement, a harmonised framework that values both formal and informal approaches is essential, recognising the diverse contexts in which Nigerian children grow and learn.

ECE and Human Capital

Human capital, which is the collective skills, knowledge, and abilities of a population, is fundamental to national development and economic progress. Early Childhood Education (ECE) is a foundational investment in human capital formation, setting the stage for future learning, workforce productivity, and societal well-being. Research underscores that cognitive and non-cognitive skills acquired in early childhood are critical predictors of later life outcomes, including educational attainment, employment, health, and civic engagement (Heckman, 2011). ECE programmes enhance not only intellectual capabilities but also foster socio-emotional skills such as perseverance, emotional regulation, and interpersonal communication, which are indispensable for 21st-century economies (OECD, 2017).

In the Nigerian context, where youth unemployment and underemployment rates remain high (National Bureau of Statistics [NBS], 2020), building a skilled and adaptable workforce from the earliest stages of life is a strategic imperative. By expanding access to quality ECE, Nigeria can cultivate a generation equipped with the competencies necessary to drive innovation, entrepreneurship, and inclusive growth. Investments made during early childhood yield higher returns compared to later educational investments, offering a cost-effective strategy to break intergenerational cycles of poverty and underdevelopment (World Bank, 2020).

Impact of Early Childhood Education on Long-Term Literacy Proficiency

Literacy, the cornerstone of education, begins developing in early childhood through exposure to language-rich environments. Studies have shown that children who attend quality ECE programs demonstrate stronger pre-literacy skills, including phonemic awareness, vocabulary acquisition, and narrative skills (UNESCO, 2021). These early literacy competencies are predictive of later reading fluency and comprehension abilities, which in turn affect academic performance across subjects. In Nigeria, where national assessments have highlighted significant deficiencies in reading proficiency among primary school students (Universal Basic Education Commission [UBEC], 2020), strengthening ECE can be a powerful intervention to address foundational literacy gaps before formal schooling even begins.

Impact of Early Childhood Education on School Readiness

School readiness encompasses a child's preparedness across multiple domains cognitive, physical, social, and emotional) to succeed in a structured school environment. Quality ECE ensures that children enter primary school not only with academic skills but also with the emotional maturity and social competence needed to thrive (UNICEF Nigeria, 2019). Evidence suggests that children who participate in organised ECE are more likely to display behaviours conducive to learning, such as attentiveness, persistence, and cooperative interaction (Shonkoff & Phillips, 2000). For Nigeria, improving school readiness through expanded ECE provision could reduce the high rates of early grade failure and learning poverty that currently undermine the effectiveness of the education system.

Impact of Early Childhood Education on Reduced Grade Repetition

Grade repetition is both a symptom and a cause of inefficiency in education systems. Repeating a grade often leads to increased educational costs, heightened risks of dropout, and diminished student motivation (World Bank, 2020). ECE programs that lay strong cognitive and socio-emotional foundations significantly lower the probability of children repeating grades. According to global meta-analyses, participation in quality preschool programs reduces grade repetition rates by up to 15% (OECD, 2017). In Nigeria, where educational wastage is a serious concern, scaling up ECE could serve as a preventive mechanism, ensuring that children progress through school on time and with competence.

Impact of Early Childhood Education on Decreased Dropout Rates

High dropout rates in Nigeria's education sector, particularly after early primary grades, pose a major barrier to achieving universal basic education (UNESCO, 2021). Dropping out often reflects a cumulative failure of early educational experiences, where children fall behind academically, disengage, and eventually exit the system. By contrast, ECE prepares children to meet the demands of formal schooling, increasing their resilience and engagement over time (United Nations, 2015). Longitudinal studies reveal that children who attend early learning programs are not only more likely to complete primary school but also have higher transition rates to secondary and tertiary education (Heckman, 2011; UNICEF, 2019). For Nigeria, this implies that investments in ECE are investments in longer educational trajectories, culminating in a better-educated populace capable of driving sustainable national development.

In summary, ECE is not merely the first step in the educational continuum; it is the foundational platform upon which sustainable educational advancement is built. Prioritising ECE expansion, quality improvement, and equitable access in Nigeria offers a transformative strategy to uplift individual lives, strengthen human capital, and propel the country toward inclusive and sustainable development goals.

Theoretical Framework

The theoretical linkage between early learning and lifelong success is well-documented in educational and economic literature. Bronfenbrenner's Ecological Systems Theory (1979) emphasises that child development is influenced by multiple environmental systems (home, school, community) interacting with each other. ECE provides a structured system that can positively mediate these interactions, particularly when children are exposed to enriching, inclusive, and stimulating environments.

Furthermore, James Heckman's Human Capital Theory (Heckman, 2011) asserts that skills acquired early become the foundation upon which later skills are built, creating a dynamic of cumulative advantage. This perspective aligns with findings that children who attend quality ECE programs perform better academically, are more likely to complete secondary and tertiary education, and enjoy better employment prospects in adulthood (OECD, 2017; UNESCO, 2021).

For Nigeria, embedding early childhood education firmly within the educational policy framework can yield transformative dividends. It can lead to a more literate, adaptable, and innovative workforce capable of advancing national goals such as economic diversification, technological innovation, and global competitiveness (United Nations, 2015).

In conclusion, ECE must be viewed not simply as a preliminary educational stage but as the critical cornerstone of sustainable national development. Strengthening the conceptual understanding and practical execution of

ECE in Nigeria offers a future where all children, regardless of background, can realize their full potential and contribute meaningfully to society.

Review of Related Studies

Several Nigerian initiatives offer practical illustrations of the strategic importance of early learning windows. The Lagos State Universal Basic Education Board (LSUBEB), for example, has implemented ECE programs focusing on developing early literacy and numeracy skills through interactive and child-centred methodologies. Evaluations revealed that children who attended Lagos State ECE centres were significantly more prepared for primary school compared to those who did not, with higher basic literacy and math competencies (World Bank, 2020).

Similarly, community-driven programs in northern Nigeria, such as the Northern Education Initiative Plus (NEI+) supported by USAID, have integrated ECE into broader educational reform efforts. These programs emphasise mother-tongue instruction, culturally relevant curricula, and parental engagement, key elements that enhance learning during early critical periods. In Bauchi and Sokoto states, NEI+ interventions have led to a 20% improvement in school readiness scores over a three-year period (USAID, 2020).

However, these promising models remain localised. Nationwide scaling, equitable financing, rigorous teacher training, and culturally adaptable curricula are urgently needed to replicate success stories across Nigeria's diverse regions. A forward-thinking policy approach would emphasise early learning not merely as an educational strategy, but as a national economic and social development priority.

Challenges Hindering Effective ECE Implementation

Infrastructural Deficits

One of the major impediments to effective ECE delivery in Nigeria is the widespread lack of suitable infrastructure. Many early childhood centres, especially in rural areas, operate without basic facilities such as safe classrooms, child-friendly furniture, sanitation amenities, or learning materials (UNICEF Nigeria, 2019). Inadequate physical environments undermine children's safety, comfort, and ability to engage in meaningful learning activities (World Bank, 2020). Without purpose-built, stimulating spaces designed for young learners, efforts to provide quality ECE are severely compromised, leading to suboptimal developmental outcomes.

Teacher Training and Professional Development Gaps

A significant gap exists in the availability of trained early childhood educators. Many caregivers lack formal qualifications in early childhood pedagogy, resulting in the reliance on unskilled labour that does not fully understand child development principles (Federal Ministry of Education, 2021). Furthermore, ongoing professional development opportunities are rare, and where they exist, they often do not align with global best practices in child-centred learning and inclusive education (UNESCO, 2021). Poorly trained teachers struggle to deliver curricula effectively, especially when it comes to fostering critical skills like problem-solving, emotional regulation, and creativity during sensitive early developmental windows.

Funding Limitations

Public investment in ECE in Nigeria remains exceedingly low, both in absolute terms and relative to the primary and secondary education sectors. Budgetary allocations to ECE programs often do not reach the levels necessary to support infrastructure development, resource procurement, teacher training, or comprehensive program monitoring and evaluation (World Bank, 2020). Reliance on private provision has partially filled the gap, but it has also deepened inequalities in access and quality between socio-economic groups (UNICEF, 2019). Without substantial and consistent financial commitments from federal, state, and local governments, the expansion and improvement of ECE will remain sluggish.

Sociocultural Barriers and Parental Involvement Issues

Deep-seated sociocultural norms also pose challenges to ECE development. In some regions, early childhood education is undervalued, with parents prioritising children's contributions to household labour or informal

apprenticeships over formal early learning (UNESCO, 2021). Misconceptions about the purpose of ECE, that it is merely "babysitting" rather than foundational education, persist in many communities. Furthermore, parental engagement, a cornerstone of successful ECE, is often low, particularly among low-income and rural populations, where parents may themselves have limited educational backgrounds. Strengthening community understanding of the lifelong benefits of ECE is essential to overcome these cultural and informational barriers.

Suggestions

Calls for Increased Government and Donor Funding

To realize the transformative potential of Early Childhood Education (ECE) in Nigeria, a significant increase in financial investment is essential. The federal and state governments must prioritise ECE funding as a distinct and critical component of national education budgets. Current allocations to ECE are insufficient to meet demand, perpetuating disparities in access and quality (World Bank, 2020). Targeted fiscal policies should guarantee dedicated funding streams for infrastructure development, teacher recruitment and training, curriculum enhancement, and program evaluation. Furthermore, partnerships with international development agencies, philanthropic organisations, and private sector stakeholders should be formalised through strategic frameworks that ensure transparency, equity, and accountability (UNESCO, 2021). Innovative financing models such as public-private partnerships and results-based financing can also mobilise additional resources to catalyse ECE expansion and sustainability.

Framework for Equitable ECE Expansion in Rural and Marginalised Areas

A national framework for ECE expansion must prioritise equity by specifically targeting rural, remote, and marginalised communities. These regions, which house a large proportion of Nigeria's children, are currently underserved and at risk of being left further behind (UNICEF Nigeria, 2019). Policymakers should implement localised solutions, such as mobile ECE centres, community-based early learning programs, and mother-tongue instructional models that respect cultural and linguistic diversity. Infrastructure projects must prioritise accessible design standards, including safe sanitation, disability access, and age-appropriate learning spaces. Additionally, incentives such as rural hardship allowances and professional development scholarships should be provided to encourage trained ECE professionals to serve in underprivileged areas.

Strategic Capacity Building for ECE Workforce

The effectiveness of ECE systems is largely contingent on the quality and preparedness of its workforce. Strategic investments in pre-service and in-service training for early childhood educators must be a policy priority. Teacher education curricula should integrate contemporary research on child development, inclusive education, trauma-informed practices, and technology integration (Federal Ministry of Education, 2021). Establishing national standards for ECE teacher certification, coupled with ongoing professional development programs, would ensure that educators remain competent, motivated, and adaptable to evolving pedagogical innovations. Furthermore, creating career pathways and recognition systems for ECE professionals can enhance workforce stability and attract high-calibre individuals into the field.

Monitoring and Evaluation Mechanisms for ECE Programmes

Robust monitoring and evaluation (M&E) systems are indispensable for ensuring the continuous improvement of ECE programs. The Nigerian government must establish standardised indicators for assessing access, quality, learning outcomes, and equity across ECE settings (World Bank, 2020). Real-time data collection mechanisms supported by technology should inform evidence-based decision-making at local, state, and national levels. Independent audits, longitudinal studies tracking child development outcomes, and community feedback loops should be integrated into M&E frameworks to ensure transparency and responsiveness. Building national capacity for research and evaluation in ECE will also empower Nigeria to participate more fully in global knowledge exchanges and benchmark its progress against international standards.

Conclusion

Early Childhood Education is not merely a foundational phase of individual learning; it is a strategic lever for national transformation. In the context of Nigeria's ambition to achieve inclusive, equitable, and high-quality education for all, ECE emerges as a critical determinant of long-term educational and socio-economic success. Scientific evidence and global best practices unequivocally demonstrate that investments made during early childhood yield the highest returns in terms of cognitive development, social cohesion, human capital formation, and poverty reduction (Heckman, 2011; UNESCO, 2021).

Looking forward, Nigeria must reimagine its education system as a resilient ecosystem rooted firmly in strong early learning foundations. Achieving this vision requires bold policy reforms, substantial investments, innovative delivery models, and a societal shift that fully values the early years as the bedrock of national development. By systematically expanding access to high-quality ECE, particularly for disadvantaged populations, Nigeria can close educational inequities, nurture a generation of critical thinkers and innovators, and drive sustainable economic growth.

In an era defined by rapid technological advancement, demographic shifts, and global interdependence, Nigeria's competitiveness will hinge on the human capital it cultivates today. A nation that invests wisely in its youngest citizens invests in its most promising future. Thus, the call to action is clear: to build a sustainable, inclusive, and prosperous Nigeria, Early Childhood Education must be elevated from a peripheral concern to a central pillar of national policy and practice.

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GENERATION Z MOTHER'S KNOWLEDGE, ATTITUDE AND PRACTICE ON EXCLUSIVE BREASTFEEDING

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Abstract
This study utilised a descriptive, cross-sectional research design to evaluate the knowledge, attitude and practices regarding exclusive breastfeeding (EBF) among Generation Z mothers. The sample comprised 200 participants, aged 18 to 25, recruited from four primary healthcare centres within the Surulere Local Government Area of Lagos. Data collection was conducted via structured questionnaires and analysed using descriptive statistics. The empirical evidence highlighted a significant disparity between maternal knowledge and actual behaviour: A substantial majority of respondents (92%) demonstrated a high level of awareness regarding the principles of exclusive breastfeeding. Conversely, 65% of the mothers exhibited a negative disposition, perceiving the practice as unnecessary. The findings indicated that 53% of participants failed to implement EBF, while 52% were unable to sustain the practice for the recommended six-month duration. While Generation Z mothers are well-informed about exclusive breastfeeding, their negative perceptions represent a critical barrier to implementation. Consequently, it is recommended that government agencies and healthcare providers design targeted interventions. These programs should focus on articulating the long-term health benefits of EBF for both mother and child, while simultaneously providing the structural and psychological support necessary to navigate the challenges associated with the practice.
Keywords: Generation Z, Knowledge, Attitude, Practice, Exclusive Breastfeeding

Introduction

Human milk represents the primary and most physiologically appropriate source of nutrition for neonates. Defined medically as the provision of human milk to an infant or young child, breastfeeding encompasses both direct nursing and the administration of expressed milk via alternative feeding methods. Beyond its fundamental nutritional utility, the practice serves a critical psychosocial function by strengthening the maternal-infant bond. While lactation is a biological hallmark of all mammals, human breastfeeding is categorised by distinct levels of intensity and frequency: exclusive, partial, and token breastfeeding.

Globally, approximately 48% of infants are exclusively breastfed for the first six months, though these figures fluctuate significantly across different regions. In sub-Saharan Africa, exclusive breastfeeding (EBF) rates range from 23.7% to 56.5%, while the early initiation of breastfeeding occurs in 37.8% to 69.3% of cases (Issaka *et al.,*2017). These statistics underscore the distance remaining to meet the Global Breastfeeding Collective's 2030 target of 70% EBF prevalence. Nigeria, specifically, lags behind these international benchmarks. According to the 2018 Nigeria Demographic and Health Survey, the national EBF rate for infants under six months is only 29% (National Population Commission & ICF, 2019). While localised data regarding the precise duration of EBF in southwest Nigeria remains limited, longitudinal breastfeeding practices appear more robust; more than 70% of mothers in this region maintain some form of breastfeeding until the child reaches one year of age.

According to recent guidance from the World Health Organisation (WHO, 2024), exclusive breastfeeding is recommended as the sole source of nutrition for the first six months of an infant's life. Global health standards emphasise that breastfeeding should ideally commence within the first hour of birth. Despite these recommendations, historical data suggest a significant gap in implementation; only 43% of newborns globally initiate breastfeeding within that first hour, and only 40% of infants under six months are exclusively breastfed (WHO, 2018; 2020). This clinical priority was underscored by Dr David Myers of the Agency for Healthcare Research and Quality (AHRQ), who advocated for the primacy of human milk during the Breastfeeding Summit (Rochester, New York). The critical nature of early initiation is largely attributed to the properties of colostrum.

Often described as the infant's "first immunisation," colostrum provides a concentrated source of antibodies, vitamins, and protective agents (Lavender *et. al*., 2006; WHO, 2024). Consequently, the use of pre-lacteal feeds is strongly discouraged.

To maintain optimal health outcomes, the WHO (1991; 2024) specifies that no supplementary food or liquids, including water, should be introduced during the first six months, except for necessary medical supplements such as vitamins or prescribed medications. Deviating from exclusive breastfeeding by introducing solids or other liquids prematurely can have several adverse effects, including: Suppressed Milk Production: A reduction in the infant's demand for breast milk, which subsequently lowers the mother's supply. Early Weaning: A shortened overall duration of the breastfeeding period. Health Risks: An increased susceptibility to diarrheal diseases and the potential for inadequate weight gain (WHO, 2009; Parizoto *et al*., 2009; Niquini *et. al*., 2010).

Research emphasises the critical role of exclusive breastfeeding (EBF) in infant and maternal health, though global and local practices often diverge from clinical recommendations. The following synthesis explores the health implications, barriers to practice, and current trends in breastfeeding, particularly within the Nigerian context. Non-exclusive breastfeeding has been linked to an increased risk of several pediatric conditions, including necrotizing enterocolitis, pneumonia, diabetes, and various allergic reactions (Parizoto et al., 2009). Conversely, breast milk provides essential fatty acids necessary for the maturation of the ophthalmic, vascular, and neurological systems (Lavender et. al.,2006). Beyond its nutritional profile of vitamins and minerals, breast milk acts as a biological shield; its antibodies significantly reduce the incidence of otitis media, gastrointestinal distress, and infectious disease mortality (McFadden & Toole, 2006; Salami, 2011; WHO, 2024).

Maternal health also benefits significantly from lactation. Studies indicate that breastfeeding facilitates postpartum weight management, lowers blood pressure, and serves as a protective factor against ovarian and breast cancers (Haiek *et al.,*2001; Ebina & Lipworth *et al.,*2000; Kashiwakura, 2012). Despite widespread awareness of these benefits, a gap remains between knowledge and practice (Swigart, 2017). Some mothers mistakenly believe that introducing supplemental fluids is necessary to alleviate infant colic or thirst (Niquini *et al.,* 2010). However, milk supply is physiologically driven by demand; frequent nursing, typically a minimum of eight times daily, is essential to maintain adequate production (Lavender *et al.,* 2006).

Successful EBF is often predicated on systemic and social support structures, including:

Medical History: Having a vaginal delivery. Clinical Support: Access to prenatal lactation counselling. Social Support: Consistent encouragement from partners and extended family (Setegn *et. al.,*2012; Elyas *et. al.,*2017).

In Nigeria, while breastfeeding is culturally normative, adherence to "exclusive" breastfeeding remains low. Data from the 2008 Nigeria Demographic and Health Survey (NDHS) recorded EBF rates at only 17%. While this figure rose to 29% by 2018, recent data from the 2023-24 NDHS indicates that progress has stagnated at 29%. This current rate falls significantly short of the 50% target for 2025 established by the National Policy on Food and Nutrition and the World Health Organisation's global objectives.

Statement of the Problem

The low level of the practice of Exclusive Breastfeeding (EBF) is responsible for about 11.6% of young children, e.g. Under-5 fatalities in sub-Saharan Africa. The prevalence of EBF varies across sub-Saharan Africa for example, 56.6% in Southern Africa,32.6% in West Africa, 53.5% in East Africa and 23.7% in Central Africa. The nations with the lowest prevalence in each region were Gabon (Central Africa), Cote d'Ivoire (West Africa), Comoros (East Africa), and Namibia (Southern Africa), with prevalence of 6.0%, 13.2%, 15.5%, and 48.7%, respectively. In Nigeria, it was estimated that 17.5% of people had EBF, which is less than the minimum of 60% stipulated by UNICEF and the World Health Organisation (Ogbo and Agho, 2015) and 29% in 2024 (Nigeria Demographic and Health Survey 2023-24). Nigeria reported low practice of EBF among nursing mothers (UNICEF, 2017; Ogunlesi *et al*, 2004). Previous research has examined the relationship between several factors and EBF in Imo, Edo, Anambra, Osun, and Cross River states (Ekure *et. al.,*2003; Ogunlesi *et al.,*2004; Salami, 2006).

Evidence suggests that Exclusive Breastfeeding (EBF) outcomes are significantly influenced by a range of maternal determinants, including educational attainment, age, marital status, socioeconomic standing, and

familial history (Ekure *et al.,*2003; Salami, 2006). Additionally, infant-specific variables, primarily the child's age and the level of maternal proximity, serve as critical predictors of EBF adherence. Institutional factors also play a pivotal role; specifically, the utilisation of formal antenatal services, delivery within public healthcare facilities, and participation in state-sponsored breastfeeding education have been identified as positive correlates (Salami, 2006; Agho *et al.,*2011).

Despite these insights, a geographic and demographic disparity exists in the current body of research. While initiatives like the 1994 Federal Medical Centre program in Owo, Ondo State, demonstrate long-standing efforts to promote EBF, most existing studies focus on broader urban centres or specific regions outside of Lagos State. Consequently, there is a lack of contemporary data regarding EBF prevalence and its associated risk factors within semi-urban Nigerian contexts. Most notably, the specific perspectives of Generation Z mothers remain under-researched. To address this empirical void, the present study examines the Knowledge, Attitude, and Practice (KAP) of Generation Z mothers toward Exclusive Breastfeeding in the Surulere local government area of Lagos State.

Objectives of the Study

This study assessed the knowledge, attitude and practices of Generation Z mothers' on exclusive breastfeeding in Surulere LGA, Lagos State. The specific Objectives are to:

i. Assessed respondents' knowledge on exclusive breastfeeding.
ii. Determined respondents' attitude toward the practice of exclusive breastfeeding.
iii. Examined the practice of exclusive breastfeeding among respondents.

Research Questions

i. What knowledge do the respondents have of exclusive breastfeeding?
ii. What is the attitude of the respondents regarding exclusive breastfeeding?
iii. What are the practices of exclusive breastfeeding among respondents?

Research Methodology

A descriptive research design was used in this study to examine the knowledge, attitudes, and practices of exclusive breastfeeding among Generation Z mothers attending selected primary healthcare centres in Lagos State.

Participants

Two hundred (200) Generation Z mothers in Surulere LGA, Lagos State, were included in the study. These participants were selected from four primary healthcare centres: Primary Healthcare Centre Akerele, Anjorin Primary Healthcare Centre, Iponri Primary Healthcare Centre, and Coker Aguda Primary Health Centre. In each centre, 50 participants were selected by convenience sampling. These health centres provide a range of services, including outpatient care, antenatal and postnatal care, family planning services and Immunisation. Eligible participants must be between the ages of 18 and 27 and must give consent.

Research Instrument

An adapted but standard Likert scale questionnaire was used in this study. It consists of three sections: A, B and C.

Section A: Examined the respondent's knowledge of exclusive breastfeeding

Section B: Ascertained respondents' attitude towards the practice of exclusive breastfeeding among respondents.

SECTION C: Assessed various practices of exclusive breastfeeding among the respondents.

Validity of Research Instrument

The research instrument underwent a rigorous validation process to ensure its psychometric integrity. Face and content validity were established through a comprehensive review by the research supervisor, who evaluated the items for thematic relevance, alignment with the study's core objectives, and clarity of language for the target

respondents. To further enhance the instrument's credibility, it was subjected to critical scrutiny by a panel of subject matter experts within the Department of Home Science and Management at the Federal University of Agriculture, Abeokuta (FUNAAB). These experts assessed the questionnaire to ensure that the indicators accurately represented the constructs under investigation and were capable of generating the data required to address the research questions.

Reliability of Research Instrument

The reliability of the research instrument was established through a test-retest methodology involving a pilot study of 30 Generation Z nursing mothers within the Surulere Local Government Area (LGA), Lagos State. This preliminary phase aimed to identify and rectify ambiguities within the questionnaire. Items deemed unclear or redundant were either refined or removed to enhance participant comprehension. Following a of two week interval, the instrument was re-administered to the same cohort to evaluate temporal consistency . Internal consistency and reliability were statistically verified using Cronbach's Alpha (α), with the threshold for significance set at 0.05. The analysis yielded the following reliability coefficients for the study's primary constructs:

- Knowledge of EBF:α=0.750
- Attitude toward EBF:α=0.748
- Practice of EBF:α=0.764

These values exceed the widely accepted social science benchmark of 0.70, confirming that the instrument is a dependable tool for measuring the variables under investigation.

Method of Data Analysis

The primary data were processed and analysed using the Statistical Package for the Social Sciences (SPSS). To provide a comprehensive overview of the dataset, descriptive statistics were utilised, specifically incorporating frequency distributions, arithmetic means, and standard deviations. The resulting data were systematically categorised and illustrated through the use of statistical tables, ensuring a clear and structured representation of the respondents' perspectives and behavioural patterns.

SECTION A: Respondents' Knowledge of Exclusive Breastfeeding

This section focuses on the empirical analysis and presentation of data concerning the knowledge of exclusive breastfeeding among the Generation Z cohort. This construct was evaluated using a ten-item research instrument, with responses measured on a four-point Likert scale, ranging from Strongly Agree (1) to Strongly Disagree (4). To facilitate data interpretation, descriptive statistical measures, specifically mean scores and standard deviations, were computed for each item to determine the respondents' overall level of comprehension and the degree of consensus among their responses

Table 1: Respondents' knowledge on Exclusive Breastfeeding (n=200).

S/N	Knowledge of exclusive breastfeeding	SA	A	D	SD	Mean	STD.DEV	Rank
1	They only require breast milk for the first six months of life.	48(24.0)	111(55.5)	34(17.0)	7(3.5)	2.00	0.743	3
2	More breast milk is produced when you eat well and drink lots of water.	118(59.0)	55(27.5)	19(9.5)	8(4.0)	1.59	0.822	8
3	Colostrum is the mother's first milk that contains antibodies and nutrients essential for infants.	118(59.0)	53(26.5)	29(14.5)	0(0)	1.56	0.735	9
4	By pumping milk and storing it, you can continue to breastfeed your baby even when you're not there.	74(37.0)	26(13.0)	100(50.0)	0(0)	2.13	0.926	1
5	The advantages of exclusive breastfeeding include better health for moms and newborns, lower chance of infection, and stronger mother-child bonds.	78(55.5)	102(51.0)	20(10.0)	0(0)	1.71	0.639	4
6	The best method to make sure babies get all the nutrients they need is to exclusively breastfeed them.	111(55.5)	47(23.5)	42(21.0)	0(0)	1.66	0.806	6
7	Exclusive breastfeeding is a means of giving babies breast milk alone for the first six months of life	90(45.0)	94(47.0)	16(8.0)	0(0)	1.63	0.629	7
8	Babies should be fed according to their hunger cues during the first month.	77(38.5)	112(56.0)	11(5.5)	0(0)	1.67	0.579	5
9	I feel positive about expressing my breast milk to be given to my baby if I am not available	84(42.0)	10(5.0)	106(53.0)	0(0)	2.11	0.971	2
10	Babies who were exclusively breastfed were less likely to develop asthma, allergies and obesity	66(33.0)	68(34.0)	66(33.0)	0	2.00	0.814	3

. The empirical data presented in Table 1 indicates a high level of foundational knowledge regarding Exclusive Breastfeeding (EBF) among Generation Z mothers. A significant majority of the 200 respondents (N=200) demonstrated a clear understanding of EBF definitions and nutritional requirements. Specifically, 79% of the cohort acknowledged that infants require only breastmilk for the initial six months of life ($\bar{x}$=2.00), while 92% correctly identified that EBF remains the optimal method for ensuring comprehensive infant nutrition ($\bar{x}$=1.66).The study further reveals that respondents possess a robust understanding of the biological and immunological benefits of breastfeeding. A substantial 85.5% of mothers recognized the vital role of colostrum as a source of antibodies and essential nutrients ($\bar{x}$=1.56), and a similar majority associated EBF with improved maternal health, reduced infection rates, and enhanced maternal-infant bonding ($\bar{x}$=1.71). Additionally, participants showed strong awareness of the physiological factors influencing lactation, with 86.5% agreeing that maternal nutrition and hydration are critical for milk production ($\bar{x}$=1.59).

A nuanced finding emerged regarding breast milk expression and storage. While the mothers were knowledgeable about the theoretical benefits of EBF, there was a measurable decrease in enthusiasm for non-direct feeding methods. Although approximately half the respondents acknowledged the utility of pumping and storing milk ($\bar{x}$=2.13), a significant portion (50%) expressed disagreement or lower positivity toward expressing milk for later use ($\bar{x}$=2.11). This suggests that while Generation Z mothers in Surulere are well-informed about the importance of breast milk, they maintain a distinct preference for direct feeding over mechanical expression. In a nutshell, while the overall cohort demonstrates a positive knowledge base including the link between EBF and the prevention of long-term conditions like asthma and obesity the disparities in items 4 and 9 highlight a potential barrier or cultural preference regarding the practical application of milk storage.

S/N	Attitude towards exclusive breastfeeding	SA	A	D	SD	Mean	STD.DEV	Ranl
1	Exclusive breastfeeding is not necessary.	50(25.0)	80(40.0)	61(30.5)	9(4.5)	2.15	0.847	6
2	Breastfeeding is embarrassing, outdated, and shouldn't be done in public.	70(35.0)	29(14.5)	29(14.5)	72(36.0)	2.52	1.295	3
3	If my work requires much of my time before the infant is six months old, I may discontinue exclusively breastfeeding.	100(50.0)	39(19.5)	61(30.5)	0(0)	1.81	0.878	7
4	Breastfeeding influences the care of other family members and relationship	27(13.5)	39(19.5)	104(52.0)	30(15.0)	2.89	0.889	1
5	I would suggest exclusive breastfeeding to other mothers.	12(6.0)	127(63.5)	61(30.5)	0(0)	2.49	0.783	4
6	Compared to exclusively breastfeeding, infant formula is simpler.	26(13.0)	66(33.0)	95(47.5)	13(6.5)	1.64	0.628	8
7	It is appropriate for me to only breastfeed my child for six months.	89(44.5)	95(47.5)	16(8.0)	0(0)	1.64	0.628	8

8	It's challenging for me to exclusively breastfeed my child.	16(8.0)	81(40.5)	84(42.0)	19(9.5)	2.53	0.776	2
9	I am certain that my breastmilk will be pumped and fed to my child if I'm not around.	24(12.0)	86(43.0)	90(45.0)	0(0)	2.33	0.681	5

Section B: Respondents' Attitude towards Practice Exclusive Breastfeeding

This section was concerned with the analysis and presentation of the data regarding the nine (9) questions on attitude towards practice of exclusive breastfeeding among Generation Z mothers) using descriptive statistics such as mean and standard deviation.

Table 2: Respondents' attitude towards exclusive breastfeeding (n=200)

The findings presented in Table 2 elucidate the attitudinal landscape of Generation Z mothers toward Exclusive Breastfeeding (EBF). A significant observation is the presence of conflicting perspectives regarding the necessity and social perception of breastfeeding. While 65% of the respondents expressed a belief that EBF is not essential ($\bar{x}$=2.15), a stark divide was noted concerning the social stigma of nursing; nearly half (49.5%) perceived breastfeeding in public as embarrassing or outdated, whereas a comparable proportion (50.5%) rejected this view ($\bar{x}$=2.52).

A critical factor impacting EBF duration appears to be occupational constraints. Half of the participants (50%) indicated that demanding work schedules would likely lead to the discontinuation of EBF before the six-month milestone ($\bar{x}$=1.81). Despite these challenges, there remains a level of peer advocacy, with 69.5% stating they would recommend EBF to other mothers ($\bar{x}$=2.49). Furthermore, 92% of the participants acknowledged the appropriateness of a six-month EBF duration ($\bar{x}$=1.64), suggesting that while mothers recognize the ideal standard, practical and social barriers hinder their personal alignment with it.Regarding alternative feeding methods and practicalities, 46% of the mothers viewed infant formula as a simpler alternative to EBF ($\bar{x}$=1.64). The data also reflects hesitation toward milk expression; 45% of respondents expressed uncertainty or disagreement regarding their willingness to pump milk for later use when unavailable ($\bar{x}$=2.33). Conversely, the impact of breastfeeding on family dynamics appeared less concerning, with 67% of mothers disagreeing that breastfeeding negatively influences relationships or the care of other family members ($\bar{x}$=2.89). These results suggest that while there is an intellectual acceptance of EBF, Generation Z mothers in Surulere face significant psychological and structural hurdles, particularly regarding public perception and workplace demands.

Section C: Respondents' Practice of Exclusive Breastfeeding

This section was concerned with the analysis and presentation of the data regarding the nine (9) questions on the practice of exclusive breastfeeding among Generation Z mothers using descriptive statistics e.g. mean and standard deviation.

Table 3: Respondents' Practice of exclusive breastfeeding

S/N	Practices of exclusive breastfeeding	YES	NO	Mean	STD.DEV	Rank
1	Did you experience any pain while breastfeeding?	143(71.5)	57(28.5)	1.29	0.453	8
2	Did you have any concerns about the safety of breastfeeding?	150(75.0)	50(25.0)	1.25	0.434	9
3	Did you have any problems with latching or milk production?	91(45.5)	109(54.5)	1.55	0.499	2
4	Did you face challenges while exclusively breastfeeding	69(34.5)	131(65.5)	1.66	0.477	1
5	Did you decide to exclusively breastfeed	94(47.0)	106(53.0)	1.53	0.500	4
6	Did you have access to resources about?	92(46.0)	108(54.0)	1.54	0.499	3
7	Do you know that exclusive breastfeeding is the best for a baby?	114(57.0)	86(43.0)	1.43	0.497	7
8	Are you currently breastfeeding	107(53.5)	93(46.5)	1.47	0.500	6
9	Did you sustain exclusive breastfeeding for 6 months?	96(48.0)	104(52.0)	1.52	0.500	5

The data presented in Table 3 illustrates the practical experiences and challenges associated with Exclusive Breastfeeding (EBF) among the sampled Generation Z mothers (N=200). While a majority of the cohort (57%) identified EBF as the optimal infant feeding method and 53.5% reported they were currently breastfeeding, their actual practice is characterized by significant physical and structural obstacles.Physiologically, 71.5% of the respondents reported experiencing pain during the breastfeeding process, and 75% expressed concerns regarding the safety of the practice. Despite these difficulties, issues such as poor latching or inadequate milk supply were less prevalent, with 54.5% stating they faced no such biological complications.

However, the autonomy of the mothers appears constrained, as 70% indicated that the decision to pursue EBF was not made independently. Furthermore, the results highlight a critical gap in support and sustainability. Over half of the participants (54%) lacked access to essential educational resources regarding EBF techniques.

Consequently, despite a high level of initial engagement and a positive ideological stance, 52% of the mothers were unable to sustain exclusive breastfeeding for the recommended six-month duration. These findings suggest that while the intent to practice EBF is present, physical discomfort, lack of decision-making agency and a deficit in supportive resources significantly hinder long-term adherence.

Discussion of Findings

Respondents' knowledge of Exclusive Breastfeeding

Research findings regarding the first study question indicate that while respondents generally possess a foundational understanding of exclusive breastfeeding (EBF), specific misconceptions persist. Notably, the lowest mean scores were associated with the formal definition of EBF, the importance of responsive feeding based on hunger cues, and nutritional requirements. These results suggest a gap in alignment with the World Health Organisation (WHO) standards, which define EBF as the sole consumption of breast milk for the first six months of life. Furthermore, there appears to be confusion regarding the transition to complementary feeding. At the same time, EBF is vital for the initial half-year; the WHO (2024) guidelines clarify that formula or solid foods should be introduced as supplements only after this period.

The critical nature of EBF is underscored by its impact on infant survival. According to WHO (2015), infants who are deprived of breast milk during the first 60 days of life face a significantly higher risk of mortality from infections compared to those who are breastfed. Beyond survival, EBF offers a dual advantage:

- For the Infant: It ensures optimal health and provides essential antibodies.
- For the Mother: it serves as a cost-effective feeding method and acts as a preventative measure against breast cancer and other non-communicable diseases.

Despite these documented benefits, adoption rates remain sub-optimal in certain regions. WHO (2017) noted that many Nigerian mothers do not practice EBF due to various systemic challenges or personal choices. These barriers include:

- Cultural Traditions: Local beliefs that view EBF as unnecessary.
- Aesthetic Concerns: Misconceptions regarding breastfeeding causing breast ptosis (sagging).
- Partial Adherence: Many mothers initiate EBF but fail to maintain it for the recommended six-month duration.

The global consequences of low EBF rates are profound. Data from 2017 indicates that of the 6.9 million deaths among children under five, approximately one million could have been averted through accessible practices like EBF. The high levels of awareness observed in this study align with international trends. For instance, research in Bedele, Ethiopia, found that 91.8% of mothers recognised the importance of EBF (Wolde *et al.,* 2014), while a study in Ambo, Ethiopia, reported a 90.8% awareness rate (Bayissa *et al.,*2015). Similarly, Nigerian research by Mbada et al. (2013) confirmed that a vast majority of respondents (88%) were familiar with the concept. However, as this study highlights, high awareness does not always translate to perfect practice, particularly among female staff facing workplace challenges.

Respondents' Attitude towards the Practice of Exclusive Breastfeeding

Regarding the second research question, the findings indicate that respondents generally harbour a negative attitude toward exclusive breastfeeding (EBF). Participants characterised the practice as socially embarrassing, antiquated, or excessively demanding. This negative perception aligns with the research of Wyatt (2018), who identified that professional obligations and employment status serve as significant barriers to EBF. Such factors contribute to a lack of comfort regarding breastfeeding in public spaces, further discouraging adherence to the practice.

Respondents' Practice of Exclusive Breastfeeding

The results from research question four indicate a moderately high prevalence of exclusive breastfeeding (EBF) practices among Generation Z mothers in Lagos State. While the majority of respondents demonstrate a

proactive and positive commitment to EBF, they encounter significant obstacles in maintaining the practice for the full six-month duration recommended by health authorities. These findings are consistent with a study conducted in Enugu, Southeast Nigeria, by Ihudiebube-Splendour et al. (2019), which reported similar trends. Their research emphasised that the specific sources of breastfeeding guidance and support available to mothers are statistically significant factors in determining whether they successfully achieve the six-month EBF milestone.

Conclusion

The study concluded that while Generation Z mothers possess a substantial knowledge base regarding exclusive breastfeeding (EBF), they maintain a predominantly negative attitude toward the practice. Consequently, although most participants initiated breastfeeding, the majority failed to sustain exclusive breastfeeding for the recommended six-month period.

Recommendations

Based on these conclusions, the following recommendations were proposed:

1. Targeted Educational Interventions: Government agencies and healthcare providers should implement strategic programs designed to shift perceptions by highlighting the long-term advantages of EBF. This includes emphasising enhanced cognitive development and overall well-being for the infant, as well as accelerated postpartum recovery for the mother.
2. Collaborative Support Systems: Healthcare stakeholders should work in synergy with family units to establish robust support networks. These interventions should focus on providing the practical and emotional assistance necessary to help mothers overcome the systemic and personal challenges associated with EBF.

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ACCESSIBILITY AND UTILISATION OF ASSISTIVE TECHNOLOGY AMONG PUBLIC PRIMARY SCHOOL TEACHERS IN EDUCATIONAL DISTRICT II, LAGOS STATE

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Abstract
Students in a variety of educational settings rely on assistive technology, which is a dynamic resource that extends far beyond the confines of specialised educational settings. All schools are expected to utilise assistive technology since the implementation of inclusive education. This study investigated the accessibility and utilisation of assistive technology among public primary school teachers in Educational District II, Lagos State. A descriptive survey research design was used in the study. Forty-eight respondents, including six teachers purposefully selected from each of the eight randomly selected schools within the eight partitioned communities in Shomolu LGA, Educational District II, participated in the study, which was guided by four hypotheses. For data collection, experts validated a self-designed questionnaire and checklist. The Pearson Product-Moment Correlation test with a significance level of .05 was used to examine the relationships between variables, and descriptive statistics were used by the researchers to analyse the collected data. The findings demonstrated a significant correlation between the availability and ease of use of assistive technology by public primary school teachers in Education District II. However, it was determined that while assistive technology is widely used in public primary schools in Education District II, its availability is low. To improve the learning of children, particularly those who require it, it was suggested, among other things, that sufficient assistive technology be made available in public schools by the government, non-governmental organisations, and others.
Keywords: Accessibility, Utilisation, Assistive Technology, Public Primary School

Introduction

To encourage inclusive education, education policies in many nations align with international frameworks and conventions, particularly in Nigeria. This policy framework is designed to ensure that every child, regardless of the obstacles they face, can receive a quality education in an inclusive environment. The Salamanca Declaration of 1994 promotes an inclusive society, with the primary objective of constructing a society free from any artificial barriers that divide its members according to disability or ability. Education for All (EFA), the Millennium Development Goals (MDGs), and the Sustainable Development Goals (SDGs) are examples of inclusion policies that were started and put into action to improve access to high-quality education and develop the potential of all citizens, including those with learning disabilities, so that they can make a living and positively impact society.

UNICEF uses an approach called inclusive education to make sure that every child gets a good education. Inclusive education, as defined in the Salamanca Statement, promotes the "recognition of the need to work towards 'schools for all', in other words, institutions which celebrate differences, support learning and respond to individual needs". Utilising assistive technology is one means of achieving this. Therefore, inclusive education is a process that places a value on the welfare of all students, but it is not an end in and of itself (UNICEF, 2022). Ozoji (2019) defines inclusive education as an educational program that provides appropriate support to all children and adolescents, regardless of their special educational needs, so that they can learn together in a regular school setting. This means that every student is a part of the school community where they learn together,

regardless of their strengths or weaknesses in any area. Because every student is a central and inseparable stakeholder in the educational experience, this is distinct from mainstreaming or integration. Ozoji (2019) also made the observation that inclusive education is about an acceptance philosophy and providing a framework within which all students, regardless of their demonstrated difficulties in the technical learning process and school, can be valued equally, treated with respect, and given equal opportunities.

According to UNICEF, there are approximately 10 million disabled children in Nigeria, out of an estimated 240 million worldwide. According to Obani (2006), very few classrooms or schools in Nigeria do not contain at least one child with a learning disability. A developmental disorder that affects a person's ability to receive, understand, process, or use verbal or written language, perform mathematical calculations, coordinate movement, or direct attention is known as a learning disability, one of the many types of disabilities. People who otherwise have skills that are at least average and necessary for human reasoning and thought are unable to learn because of these conditions. These children deviate from the usual pattern of growth and development that society expects of all children. In order to learn or participate in other human activities in the community or at school, the impairment must be severe enough to necessitate the use of specialized staff, facilities, techniques, and modifications to the curriculum. Additionally, it has been estimated that more than one billion individuals require one or more assistive technologies to support them, and that by 2030, more than two billion individuals will require assistance from one or more assistive technologies (WHO, 2023).

Tools, software, and other pieces of equipment called "assistive technology" (AT) are designed to help people with disabilities become more competent. By fostering a sense of self-reliance, independence, and success in academic endeavours, AT can be of great assistance to children with learning difficulties. It gives parents, teachers, and therapists tools and resources to help them better understand and support the needs of children with disabilities, which improves caregiving and educational outcomes overall (Karki *et. al*., 2023). Educators who are familiar with assistive technology have a better chance of meeting every student's needs, creating inclusive classrooms, and advancing equity. In spite of the fact that inclusive education is no longer in the news all over the world, the question of how inclusive our educational system is in Nigeria persists. In the classroom, many children, learning disabled or not, face unique obstacles. By providing individualised support, assistive technology can significantly enhance their learning experience. Primary school teachers in Educational District II are unaware of the current accessibility and utilisation of assistive technology, despite its potential advantages and positive impact on inclusive education. To make inclusive education a reality, this gap may hinder the effective integration of assistive technology, which, of course, can lead to poor educational opportunities for the district's students. As a result, the goal of this study is to investigate the availability and use of assistive technology by public primary school teachers in Educational District II to encourage inclusion.

Purpose of the Study

The main purpose of this study was to investigate the accessibility and utilisation of assistive technology among public primary school teachers in Educational District II. The study's specific objectives are to:

1. Assess the awareness levels of public primary school teachers regarding assistive technology in Educational District II.
2. Examine the level of availability of assistive technology in public primary schools in Educational District II.
3. ascertain the level of accessibility of assistive technology devices among public primary school teachers in Educational District II.
4. Examine the level of utilisation of assistive technology by public primary school teachers in Educational District II.

Hypotheses

The investigation was guided by the following hypotheses.

H01: There is no significant difference in the level of awareness of assistive technology among

Public primary school male and female teachers in Education District II.
H02: There is no significant relationship between the level of availability of assistive technology and the level of accessibility of assistive technology devices by the public primary school teachers in Education District II.
H03: There is no significant relationship between the level of availability of assistive technology and level of usability of assistive technology by public primary school teachers in Education District II.
H04: There is no significant relationship between the level of accessibility and usability of assistive technology devices by public primary school teachers in Education District II.

Methodology

The methodology of this study was a survey research design. The entire population for the study consists of primary school teachers in Shomolu, District II, Lagos State. This includes 351 teachers in public primary schools (Education Ministry of Lagos State). Simple random and purposeful sampling methods were used in the study. Participants from District II's public primary schools were selected using these methods. Six teachers from each of the eight partitioned communities in the Shomolu Local Government Area (LGA) were selected to make up the final sample of 48 participants. Accessibility and Utilisation of Assistive Technology among Public Primary School Teachers' Questionnaire (AUATPPSTQ) and Checklist Guide on Availability of Assistive Technology in Public Primary Schools (CGAATPPS) were the two instruments used to collect the study's data. Experts from the University of Lagos' Measurement and Evaluation Department validated the instruments. The researcher informed the authorities of the study's purpose before visiting the selected schools to collect data. Simple percentages, descriptive statistics, and Pearson Product-Moment Correlation Analysis were used to analyse the research's data.

Results

Analysis of Respondents' Bio Data

Analysis of Respondents' Bio Data

Table 1: Teachers' Bio Data

Variables	Frequency	Percentage
Gender		
Male	23	24.0
Female	73	76.0
Total	**96**	**100.0**
Highest Education Qualification		
NCE	37	38.5
HND	1	1.0
B.Sc.	3	3.1
B.Ed.	28	29.2
B.Sc./Ed.	18	18.8
B.A	2	2.1

PGDE	0	0.0
M.Sc.	0	0.0
M.Ed.	1	1.0
M.A	4	4.2
Ph.D.	0	0.0
Others (OND)	2	2.1
Total	**96**	**100.0**
Years of Teaching Experience		
1-5years	22	22.9
6-10years	13	13.5
11-15years	13	13.5
16-20years	33	34.4
Above 20years	15	15.6
Total	**96**	**100.0**

Source: Field survey, 2024

Table 1 reveals that 23(24.0%) of the teachers were male; and 73(76.0%) were female. This indicates that majority of the teachers sampled in this study were female. The analysis of highest education qualification of respondents shows that 37(38.5%) of the teachers were NCE holders; 1(1.0%) was HND holder; 3(3.1%) were B.Sc. holders; 28(29.2%) were B.Ed. holders; 18(18.8%) were B.Sc./Ed. holders; 2(2.1%) were B.A holders; 1(1.0%) was M.Ed. holder; 4 (4.2%) were M.A holders; 2(2.1%) were OND holders; while none of the teachers had PGDE, M.Sc. and Ph.D. certificates. Thus, the majority of the sampled teachers in this study are NCE holders.

Still in Table 1, analysis of the teachers' years of teaching experience shows that 22(22.9%) had between 1-5years of teaching experience; 13(13.5%) had between 6-10years; 13(13.5%) had between 11-15years of teaching experience; 33(34.4%) had between 16-20years of teaching experience, while 15(15.6%) had above 20years of teaching experience. This shows that majority of the sampled teachers had between 16-20years of teaching experience.

Research Question One

To what extent are public primary school teachers aware of the existence of different assistive technology devices in Education District II?

Table 2:Extent of the Public Primary School Teachers' Awareness of the Existence of Different Assistive Technology Devices in Education District II

Items	HA	MA	FA	NA	Total	Mean	S.D	Remarks
Technological devices aid the functional capabilities of children with special needs	59 61.5 %	23 24.0 %	12 12.5 %	2 2.1%	96 100 %	3.45	0.79	Moderately Aware
A technology that aids learning by people with disabilities exists.	55 57.3 %	21 21.9 %	15 15.6 %	5 5.2%	96 100 %	3.31	0.92	Moderately Aware
Simple calculations can be performed by people with disabilities using assistive technology.	51 53.1 %	27 28.1 %	13 13.5 %	5 5.2%	96 100 %	3.29	0.89	Moderately Aware
There is a device that aids speaking among children with speech impairment.	34 35.4 %	33 34.4 %	15 15.6 %	14 14.6 %	96 100 %	2.91	1.05	Moderately Aware
Assistive technology can be used in inclusive classrooms.	52 54.2 %	31 32.3 %	11 11.5 %	2 2.1%	96 100 %	3.39	0.77	Moderately Aware
There is a technology that serves as hearing aid for persons with hearing difficulty.	51 53.1 %	24 25.0 %	14 14.6 %	7 7.3%	96 100 %	3.24	0.96	Moderately Aware
A technology that can help children with learning disabilities read exits.	42 43.8 %	33 34.4 %	12 12.5 %	9 9.4%	96 100 %	3.13	0.79	Moderately Aware
There is a pointing device for persons with special needs.	40 41.7 %	26 27.1 %	19 19.8 %	11 11.5 %	96 100 %	2.99	1.04	Moderately Aware
Slant boards are examples of assistive technology.	24 25.0 %	31 32.3 %	26 27.1 %	15 15.6 %	96 100 %	2.67	1.02	Moderately Aware
There is a technology that can	28	37	21	10	96	2.86	0.9	Moderately

Source: Field survey, 2024

Keys:**HA**= Highly Aware(≤ 4), **MA**= Moderately Aware(≤ 3), **FA**= Fairly Aware(≤2), **NA**=Not Aware(≤ 1)

Table 2 reveals that the grand mean of the items 1 to 10 is **3.12** with a standard deviation of 0.92. This mean is approximately 3. This indicates that public primary school teachers are moderately aware of the various assistive technology tools available in Education District II. *Therefore, the answer to research question one is that the public primary school teachers are moderately aware of the varieties of assistive technology tools in Education District II.*

Research Question Two

What is the level of availability of assistive technology in public primary schoolsin Education District II?

The research question two is answered with the checklist analysis presented in Table 3.

Table 3: Level of Availability of Assistive Technology in Public Primary Schools in Education District II

S/N	Assistive Technology Devices/Tools	Total number of Items in the sampled schools (N =16)	Average number of items per school (For a class use at a time)	Average number of students per class	Mean	Remarks
1.	Abacus/Math line	0	0	8*	0.0	Not Available
2.	Graph paper/ book	32	2	8	0.25	Low
3.	Narrating Audiobook	24	1.5	8	0.19	Low
4.	Calculator with large keys	40	2.5	8	0.31	Low
5.	Talking clock	37	2.3	8	0.29	Low
6.	Computerized pen	0	0	8	0.0	Not Available
7.	Talking calculator	32	2	8	0.25	Low
8.	Audio recorder	36	3	8	0.38	Low
9.	Electronic portable dictionary	0	0	8	0.0	Not Available
10	Communication board/book with pictures/objects/ letters/words	86	5.4	8	0.68	High
11	Marker pen	129	8.1	8	1.01	High

12.	Process aid (Step pad or voice cue)	0	0	8	0.0	Not Available
13	Portable word processor to keyboard instead of writing	0	0	8	0.0	Not Available
14	Pencil grip	28	1.8	8	0.23	Low
15	Pen scanners	0	0	8	0.0	Not Available
	Average		**1.91**	**8***	**0.24**	Low

***Source**: Field survey, 2024*

Scales: High = (x≥0.5); **Low** = (x≤ 0.5), **Not Available**= (x= 0)

Notes: *Each of the sampled primary schools has an average class size of 8students.

The mean ratings of the 15 items shown in Table 3 are 0.0, 0.25, 0.19, 0.31, 0.29, 0.0, 0.25, 0.38, 0.0, 0.68, 1.01, 0.0, 0.0, 0.23, and 0.0 respectively. These data show that only communication boards/books with pictures/objects/ letters/words and marker pens are available in high quantity in most of the sampled schools; graph paper/ book, narrating audiobook, calculator with large keys, talking clock, talking calculator, audio recorder and pencil grip are available in low quantity; while Abacus/Math line, computerized pen, electronic portable dictionary, process aid (step pad or voice cue), portable word processor to keyboard instead of writing, and pen scanners are not available in the sampled schools. Also, the average of the mean data for all the fifteen (15) items is 0.24. Based on this analysis, the answer to research question two is that the level of availability of assistive technology in public primary schools in Education District II is low.

Research Question Three

To what extent are the assistive technology devices accessible to public primary school teachers in Education District II?

Table 4: Extent to which the Assistive Technology Devices are Accessible to Public Primary School Teachers in Education District II

S/N	Items	HA	MA	FA	NA	Total	Mean	S.D	Remarks
1.	Abacus/Math line	26	28	18	24	96	2.58	1.14	Moderately Accessible
		27.1%	29.2%	18.8%	25.0%	100%			
2.	Graph paper/ book	51	25	8	12	96	3.20	1.04	Moderately Accessible
		53.1%	26.0%	8.3%	12.5%	100%			
3.	Narrating Audio book	16	23	26	31	96	2.25	1.09	Fairly Accessible
		16.7%	24.0%	27.1%	32.3%	100%			

4.	Calculator with large keys	43	12	15	26	96	2.75	1.28	Moderately Accessible
		44.8%	12.5%	15.6%	27.1%	100%			
5.	Talking clock	18	28	19	31	96	2.34	1.12	Fairly Accessible
		18.8%	29.2%	19.8%	32.3%	100%			
6.	Computerized pen	13	11	27	45	96	1.92	1.06	Fairly Accessible
		13.5%	11.5%	28.1%	46.9%	100%			
7.	Talking calculator	17	27	17	35	96	2.27	1.14	Fairly Accessible
		17.7%	28.1%	17.7%	36.5%	100%			
8.	Audio recorder	42	22	11	21	96	2.89	1.20	Moderately Accessible
		43.8%	22.9%	11.5%	21.9%	100%			
9.	Electronic portable dictionary	22	22	21	31	96	2.36	1.16	Fairly Accessible
		22.9%	22.9%	21.9%	32.3%	100%			
10	Communication board/book with pictures/objects/ letters/words	47	24	17	8	96	3.15	0.99	Moderately Accessible
		49.0%	25.0%	17.7%	8.3%	100%			
11	Marker pen	62	22	5	7	96	3.45	0.89	Moderately Accessible
		64.6%	22.9%	5.2%	7.3%	100%			
12.	Process aid (Step pad or voice cue)	14	28	24	30	96	2.27	1.06	Fairly Accessible
		14.6%	29.2%	25.0%	31.3%	100%			
13	Portable word processor to keyboard instead	19	22	15	40	96	2.21	1.19	Fairly Accessible
		19.8%	22.9%	15.6%	41.7%	100%			

***Source**: Field survey, 2024*

Keys: **HA**= Highly Accessible(≤ 4), **MA**= Moderately Accessible (≤ 3), **FA**= Fairly Accessible (≤2), **NA**= Not Accessible (≤ 1)

Table 4 reveals that Abacus/Math line, graph paper/ book, calculator with large keys, audio recorder, communication board/book with pictures/objects/ letters/words, and marker pen are moderately accessible; while items such as narrating audio book, talking clock, computerized pen, talking calculator, electronic portable dictionary, process aid (step pad or voice cue), portable word processor to keyboard instead of writing, pencil grip and pen scanners are fairly accessible. Also, Table 4 shows that the grand mean of the items 1 to 15 is **2.51** with a standard deviation of 1.09. This shows that the mean is approximately 3. Therefore, the answer to research question three is that assistive technology devices are moderately accessible to public primary school teachers in Education District II.

Research Question Four

To what extent do public primary school teachers utilize assistive technology tools in Education District II?

Table 5:Extent to which the Public Primary School Teachers Utilize Assistive Technology Tools in Education District II

S/N	Items	HU	MU	FU	NU	Total	Mean	S.D	Remarks
1.	Abacus/Math line	19	28	21	28	96	2.40	1.11	Fairly Utilised
		19.8%	29.2%	21.9%	29.2%	100%			
2.	Graph paper/ book	47	17	16	16	96	2.99	1.16	Moderately
		49.0%	17.7%	16.7%	16.7%	100%			Utilised
3.	Narrating Audiobook	14	14	28	40	96	2.02	1.08	Fairly Utilised
		14.6%	14.6%	29.2%	41.7%	100%			
4.	Calculator with large keys	29	21	16	30	96	2.51	1.22	Moderately
		30.2%	21.9%	16.7%	31.3%	100%			Utilised
5.	Talking clock	12	24	21	39	96	2.09	1.08	Fairly Utilised
		12.5%	25.0%	21.9%	40.6%	100%			
6.	Computerized pen	7	19	18	52	96	1.80	1.00	Fairly Utilised
		7.3%	19.8%	18.8%	54.2%	100%			
7.	Talking calculator	10	14	22	50	96	1.83	1.03	Fairly Utilised
		10.4%	14.6%	22.9%	52.1%	100%			
8.	Audio recorder	29	19	19	29	96	2.50	1.21	Moderately
		30.2%	19.8%	19.8%	30.2%	100%			Utilised
9.	Electronic portable dictionary	11	16	23	46	96	1.92	1.05	Fairly Utilised
		11.5%	16.7%	24.0%	47.9%	100%			
10	Communication board/book with pictures/objects/ letters/words	39	20	19	18	96	2.83	1.16	Moderately
		40.6%	20.8%	19.8%	18.8%	100%			Utilised
11	Marker pen	56	18	11	11	96	3.24	1.05	Moderately
		58.3%	18.8%	11.5%	11.5%	100%			Utilised
12.	Process aid (Step pad or voice cue)	7	23	29	37	96	2.00	0.96	Fairly Utilised
		7.3%	24.0%	30.2%	38.5%	100%			
13	Portable word processor to keyboard instead	13	21	18	44	96	2.03	1.11	Fairly Utilised
		13.5%	21.9%	18.8%	45.8%	100%			

Source: Field survey, 2024

Keys:**HU**= Highly Utilised(≤ 4), **MU**= Moderately Utilised (≤ 3), **FU**= Fairly Utilised (≤2), **NU**= Not Utilised (≤ 1)

Table 5 reveals that graph paper/ book, calculator with large keys, audio recorder, communication board/book with pictures/objects/ letters/words, and marker pen are moderately utilised; while items such as Abacus/Math line, narrating audio book, talking clock, computerized pen, talking calculator, electronic portable dictionary, process aid (step pad or voice cue), portable word processor to keyboard instead of writing, pencil grip and pen scanners are fairly utilised. Also, Table 5 shows that the grand mean of the fifteen (15) items is **2.27** with a standard deviation of 1.08. This shows that the mean is approximately 2. Therefore, the answer to research question four is that the public primary school teachers fairly utilised assistive technology tools in Education District II.

Testing of Hypotheses

$H_0$1: There is no significant difference in the level of awareness of assistive technology among public primary school male and female teachers in Education District II.

Table 6:Difference in the level of awareness of assistive technology among public primary school male and female teachers in Education District II

Gender	N	$\overline{X}$	SD	Df	T	Sig.
Male Teachers	23	3.11	0.94			
				94	.087**	.085
Female Teachers	73	3.13	0.90			

**Not Significant

Table 6 indicated that t (94) = 0.087, p = 0.05. That is, the result of the t-value of 0.087 resulting in 0.085 significance value was higher than the alpha level of 0.05. Accordingly, the null hypothesis which stated that there is no significant difference in the level of awareness of assistive technology among public primary school male and female teachers in Education District II was accepted. Thus, there is no significant difference in the level of awareness of assistive technology among public primary school male and female teachers in Education District II.

$H_0$2: There is no significant relationship between the level of availability of assistive technology and level of accessibility of assistive technology devices by public primary school teachers in Education District II.

Table 7:Relationship between the Level of Availability of Assistive Technology and Level of Accessibility of Assistive Technology Devices by Public Primary School Teachers in Education District II

Variables	Mean	S.D	N	df	R	p-value	Remark
Level of availability of ass technology	1.23	1.14					
			96	94	.381*	.002	Sig.
Level of accessibility of ass technology devices by primary schoolteachers	2.51	1.09					

**Significant, $p < 0.05$;*

Table 7 revealed that there is significant relationship between the level of availability of assistive technology and level of accessibility of assistive technology devices by public primary school teachers in Education District II ($r(96) = 0.381$; df=94; $p < 0.05$). Thus, the null hypothesis which stated that there is no significant relationship between the level of availability of assistive technology and level of accessibility of assistive technology devices by public primary school teachers in Education District II was rejected. Hence, there is significant relationship between the level of availability of assistive technology and level of accessibility of assistive technology devices by public primary school teachers in Education District II.

$H_0$3: There is no significant relationship between the level of availability of assistive technology and level of usability of assistive technology by public primary school teachers in Education District II.

Table 8: Relationship between the Level of Availability of Assistive Technology and Level of Usability of Assistive Technology by Public primary School Teachers in Education District II

		Level of availability of assistive technology	Level of usability of assistive technology by public primary school teachers
Level of availability of assistive technology	Pearson Correlation	1	.442**
	Sig. (2-tailed)		.003
	N	96	96
Level of usability of assistive technology by public primary school teachers	Pearson Correlation	.442**	1
	Sig. (2-tailed)	.003	
	N	96	96

**. Correlation is significant at the 0.05 level (2-tailed).

Information on Table 8 revealed that there is significant relationship between the level of availability of assistive technology and level of usability of assistive technology by public primary school teachers in Education District II ($r(96) = 0.442$; df=94; $p < 0.05$). Therefore, the null hypothesis, which claimed that there is no significant relationship between the level of availability of assistive technology and the level of usability of assistive technology by public primary school teachers in Education District II, was rejected. Hence, there is significant relationship between the level of availability of assistive technology and level of usability of assistive technology by public primary school teachers in Education District II.

$H_0$4: There is no significant relationship between the level of accessibility and usability of assistive technology devices by public primary school teachers in Education District II.

Table 9: Relationship between the Level of Accessibility and Usability of Assistive Technology by Public Primary School Teachers in Education District II

		Level of accessibility of assistive technology devices by public primary school teachers	Level of usability of assistive technology by public primary school teachers
Level of accessibility of assistive technology devices by public primary school teachers	Pearson Correlation	1	.832**
	Sig. (2-tailed)		.000
	N	96	96
Level of usabili ty of assistive technology by public primary school teachers	Pearson Correlation	.832**	1
	Sig. (2-tailed)	.000	
	N	96	96

**. Correlation is significant at the 0.05 level (2 -tailed).

Information on Table 9 revealed that there is significant relationship between the level of accessibility and usability of assistive technology devices by public primary school teachers in Education District II ($r(96) = 0.832$; $df=94$; $p < 0.05$). Therefore, the null hypothesis which claimed that there is no significant relationship between the level of accessibility and usability of assistive technology devices by public primary school teachers in Education District II was rejected. Hence, significant relationship existed between the level of accessibility and usability of assistive technology devices by public primary school teachers in Education District II.

Discussions of Findings

The study's findings revealed no significant difference in the level of awareness of assistive technology among male and female public primary school teachers in Education District II. The findings of this study are in agreement with the report of Bhaskar and Vanitha (2023), who investigated the awareness level of Assistive Technology among preservice teachers in the context of promoting inclusive education. According to their research, preservice teachers had a moderate level of awareness about assistive technology, with no discernible differences according to gender, pedagogy subject, or location.

There is no significant relationship between the level of availability of assistive technology and the level of accessibility of assistive technology devices by public primary school teachers in Education District II. This finding supported the view of Yusuf et al. (2012), whose study on assistive technologies for students with mental retardation & learning disabilities, their survey of specialised institutions revealed a significant gap between the presence of technology and its application in the classroom. While a majority of schools possessed computer systems, these tools were primarily utilised for administrative tasks rather than for active instructional support. In addition, the findings of Dominic *et. al*. (2020) corroborates the finding of this study. Their findings showed that a good number of the high-tech assistive resources necessary for quality teaching and learning in special education schools were unavailable. Similarly, Olugu (2020), who assessed the availability and utilisation of assistive technology devices for improved teaching and learning among students with learning disabilities in

Ohafia, Abia state, revealed that a good number of assistive technology devices are not available for student with learning disabilities in Ohafia in Abia State.

Conversely, some studies have revealed the availability of assistive technology, especially in special schools. Alimi *et. al.,* (2021) who conducted a study in Nigeria to assess the availability and utilization of ATs for learners with special needs observed that 52.1% of braille and braille embossers, 45.2% of the stylus, 74% of eyeglasses, 53.4% of optical aids, 57.5% of talking computers, 52.1 % of note takers and screen readers for only 52.1% were available and used in schools. An empirical study conducted by Eliuteri and Lema (2022) in Tanzania, which focused on examining the access to assistive devices for special education needs in Morogoro municipal, also revealed that some of these assistive technologies were available and accessible to learners.

There is no significant relationship between the level of availability of assistive technology and the level of usability of assistive technology by public primary school teachers in Education District II. The results of the analyses revealed that assistive technology devices are moderately accessible to public primary school teachers in Education District II, and there is a significant relationship between the level of availability of assistive technology and the level of usability of assistive technology devices by public primary school teachers in Education District II. Thus, we reject the null hypothesis. One of the primary challenges in the accessibility of assistive technology is the lack of adequate training for teachers. Many educators express the need for comprehensive professional development to understand and implement these tools effectively. Without proper training, the full potential of assistive technology remains untapped, and students may not receive the support they need. Moreover, limited funding and resources often pose a significant barrier. Schools may struggle to afford the necessary devices or software, leading to disparities in technology availability. This economic constraint can prevent teachers from providing all students with the appropriate tools, thereby hindering an equitable learning environment.

The accessibility of assistive technology for primary school teachers is essential for creating an inclusive educational environment. By addressing the challenges, we can ensure that all students, regardless of their abilities, have the opportunity to succeed in their educational journey. Teachers, as the frontline facilitators of learning, play a vital role in this transformative process, shaping the future of education for all.

There is no significant relationship between the level of accessibility and usability of assistive technology devices by public primary school teachers in Education District II. The results of this investigation are consistent withIsiaku *et. al.* (2021), whose findings not only revealed underutilization of assistive technology in schools but went further to give reasons for the underutilisation of assistive technology in schools. According to them effective utilization of assistive technologies is constraint by many challenges like inadequate availability of assistive technologies, inadequate trained instructors to teach students with disabilities how to utilize assistive technologies, lack of adequate planning and collaboration time for instructors, lack of technical assistance from the vendor or manufacturers, lack of cooperation between the school and the family of students with disabilities, inadequate availability of ICT specialists to instruct students with learning difficulties and restricted possibilities for their training.

Conclusion

Considering the findings of the analysis of the data collected, it was concluded that the level of availability of assistive technology among public primary school teachers in Education District II is low and fairly utilised, which may result in poor academic outcomes among the pupils. Nonetheless, the level of awareness and accessibility of the assistive technology is moderate.

Recommendations

The following suggestions were deemed essential in light of the study's findings.

1. Adequate assistive technology should be made available by the Government, NGOs, etc, in public schools to enhance the learning of the children.
2. More awareness and sensitisation programs about assistive technology should be organised for public primary school teachers.

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ARTIFICIAL INTELLIGENT (AI) ASSISTED INSTRUCTIONAL LEARNING TOOLS FOR PRE-SCHOOLERS IN ENHANCING NUMERACY AND LITERACY SKILLS IN ADEYEMI FEDERAL UNIVERSITY OF EDUCATION EARLY CHILDHOOD EDUCATION CENTER

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Abstract
The study investigated the effectiveness of AI-assisted instructional tools in enhancing numeracy, literacy, and combined nume-literacy skills among preschoolers adopted at Adeyemi Federal University of Education, ECE Centre. This research adopted a descriptive survey design. The population for this study is all the children in the centre. The sample consisted of twenty-five (25) participants to assess skill development. The study employed artificial intelligence tools, which include AI-driven phonics programs for the literacy part and interactive number games for their numeracy skills, to gather information on using number games. Findings revealed that AI-powered tools significantly improved numeracy through interactive number recognition and adaptive learning, while literacy skills benefited from AI-driven phonics, speech recognition, and personalised feedback. The integration of AI strengthened interdisciplinary connections between numbers and words, fostering holistic cognitive growth. Challenges such as unequal access to technology and ethical concerns were noted, emphasising the need for balanced AI implementation alongside traditional teaching methods. Recommendations include policy integration of AI numeracy/literacy programs, equitable resource distribution, and teacher training to ensure ethical and effective AI use in early education.
Keywords: Artificial Intelligence Tools (AIT), Numeracy, Literacy, Adaptive Learning

Introduction

Early childhood is a period that spans from birth to age 8. The period of early childhood education is crucial for children's brain development; this is a period during which the intelligence quotient (IQ) develops. Therefore, they become sensitive to their environment, develop essential skills and are imbued with foundational concepts that enable them for adulthood, which is a key part of the Nigerian educational system. It involves physical, cognitive, socio-emotional and language development of children, which is foundational for a child's future development. Alhosani (2022) stated that ECE is a foundational pillar in the development of any society. Adewusi *et al.* (2024) opined that early childhood education is globally recognised as a part of a nation's educational landscape. It is a bedrock upon which prospective educational attainment and societal contributions

are established. It is agreed that a high standard of early childhood educational programs enhances school readiness, lessens achievement gaps, and improves long term effect in terms of employment, health and other social integration.

Children are groomed from a tender age to the time when they are ready for proper school life with ease. These days, many children may have picked up one or two numbers and words from home before they eventually start school. Artificial intelligence is used in various places, including the home and school. At home, Many parents have iPads, tabs, and phones, with educational games and activities. With these, many children are introduced to numbers and reading activities; these AI tools are, in turn, brought into the crèche and playgroups in schools where children engage in AI learning activities. These activities introduce children to number-literacy skills, which prepare them for proper school life. Adrienne (2024) asserted that the introduction of AI in ECCE helps young children develop language and speech skills because it offers accurate and instant feedback and assessment on pronunciation, vocabulary, comprehension, fluency and accurate numeracy, which are crucial for a child's transition to proper school life.

Early childhood education enables care and thorough supervision while parents are away. With the introduction of AI in ECCE, monitoring systems such as AI-powered sensors and cameras can help monitor classrooms, playgrounds and detect potential hazards or accidents. Early childhood education imbues social norms in children. Through the use of AI, interacting with other children, their environment, material and other facilities becomes easy. Adrienne (2024) added that AI helps children gain confidence to express themselves, learn manners like, please and thank you for easy interaction among their peers.

Early childhood education gives room for creativity and enquiry through art, music, nature and play, which is where the use of AI comes into play. Some tools, like digital painting tools, provide children with avenues to express their creative minds. AI helps in composing, generating and exploring the world of music. AI-powered virtual reality tools provide children with immersive nature experiences that promote exploration and discovery. AI provides game-based learning platforms, which provide children with an interactive learning experience, early childhood education cooperation and team spirit in the sense that when children are interacting with one another when they engage in the use of AI tools learn how to work in oneness and cooperate together to get their work done. AI-powered collaborative tools such as shared digital workspaces enable children to work together on projects, which promotes teamwork and cooperation. Fikri and Rhalma (2024) opined that AI could be used in early childhood education to become inquiry literate. It has the power to stimulate creativity in children, by giving them access to design, music and art resources. It builds children into future social being, offers emotional support and values that transcends technology.

Early childhood education imbibes the rudiments of numbers, letters and colours. AI tools are programmed into activities that teaches and at the same time fun. AI interactive counting games engage children in counting activities, number recognition and other mathematical patterns such as shapes and colours. It exposes them to phonics and phonemic awareness, letter recognition, word building, colour recognition, colour mixing and matching and colourful patterns and shapes. Early childhood education enhances physical activities, which brings some part of the body into action. AI powered physical education tools, such as virtual fitness coaches, interactive dance mats, and smart playground equipment, can help engage children in physical activities while teaching them about rhythm, tempo and movement. Wilhelmina and Ohaka (2024) stated that integrating AI in early childhood education enhances language acquisition through learning of letters and boosts problem-solving skills through the rudiments of numbers.

Having gone through the concept of early childhood education, it has been proven evident that the use of artificial intelligence in children will help enhance the basic features of early childhood education and that the use of AI will aid nume-literacy skills in children.

LiteratureReview

Artificial Intelligence (AI) is a system that gives insight into problems for easy solutions. AI has emerged as a transformative force across various sectors, including education. Defined as the development of computer systems capable of performing tasks that typically require human intelligence, AI encompasses learning, reasoning, problem-solving, perception, and natural language processing (Russell &Norvig, 2020). It allows the

caregiver to have access to various ways of solving the child's problem with less difficulty.
AI refers to the simulation of human cognitive processes by machines, particularly computer systems. These systems are designed to analyse data, recognise patterns, and make autonomous decisions with minimal human intervention. AI encompasses several subfields, including machine learning, natural language processing, robotics, and computer vision, all of which contribute to its ability to perform complex tasks traditionally associated with human intelligence (Goodfellow *et. al*., 2016).
The benefits of AI in Early Childhood Education include the integration of AI in ECE. This presents numerous benefits, such as enhancing both teaching methodologies and learning experiences by personalising learning, teachers' support, inclusive education, and engagement and motivation. AI-powered educational platforms can tailor learning experiences to meet individual developmental needs. Adaptive learning systems adjust content complexity based on a child's progress, promoting engagement and cognitive growth (Holmes et. al., 2019). This implies that AI can foster personalised learning.
AI-driven educational games and interactive tools foster an engaging learning environment, motivating young learners through interactive and playful experiences (Holmes *et al*., 2019). AI holds significant potential to revolutionise Early Childhood Education by offering personalised learning experiences, enhancing teacher effectiveness, and fostering inclusive educational environments. As AI technologies continue to evolve, their thoughtful integration into ECE can support the cognitive, emotional, and social development of young learners, paving the way for more effective and equitable educational practices.

Objectives of the Study
The general objective of this study is to investigate AI Assisted Instructional Learning Tools for Pre-schoolers in Enhancing Numeracy and Literacy Skills in Adeyemi Federal University of Education, ECE Centre, while the specific objective is to:

1. How AI instructional learning tools enhance pre-schoolers' numeracy skills
2. How AI instructional learning tools enhance pre-schoolers' literacy skills
3. How AI instructional learning tools enhance pre-schoolers' nume-literacy skills

Research Questions
1. Do AI-assisted instructional learning tools enhance pre-schoolers' numeracy skills?
2. Do AI-assisted instructional learning tools enhance pre-schoolers' literacy skills?
3. Do AI-assisted instructional learning tools enhance pre-schoolers' nume-literacy skills?

Methodology
The study employed a descriptive survey design. The pupils used in the study were the pupils in the Nursery Public Schools in Ondo State. A simple random sampling technique was used to select 25 pupils for the study. The instrument used consists of questions asked to see if it is right or wrong (Yes/No) and AI instructional learning tools, which include AI-driven phonics programs for the literacy part and interactive number games for the numeracy skills. Descriptive statistics such as frequency and simple percentage were used to answer the research questions.

Results
Research Question 1: Do AI-assisted instructional learning tools enhance pre-schoolers' numeracy skills?

Questions	Right %	Wrong%
1. Recite number 1-50	20 (80%.	5(20%)
2. Can you tell me which number comes before 9	23 (92%)	2(8%)
3. From the number placed on the floor, Selectnumbers from 21-40	13(52%)	12(48%)
4. Number 1 plus 2 is what?	25(100%)	0.(0%)

Both the intact and control group were able to answer the questions during observation. It shows that numbers of pupils that answered the question rightly is more than those who were wrong.

From the study, the tools being presented to the pupils to use, the pupils wereable to recite numbers-1-50, it revealed that the pupils have developed the numeracy skills;In the control group, the tools (games) were not administered, but the pupils were able to recite the numbers without any difficulties. From the table 1 above, items 1, 2, 3, 4 showed that questions were answered rightly, 80%, 92%, 52% and 100% respectively. This showedrespectively that the number games developed pupils' nume-literacy skills, while the wrongly answered items were 20%, 8%, 48% and 0% respectively.

Research Question 2: Does AI assisted instructional learning tools enhance pre-schoolers literacy skills?

Questions	Right %	Wrong%
1. What is the corresponding word of number 1 and 2	24 (9%)	1(4%)
2. Recite one 1 to ten 10	19 (76%)	6(24%)
3. Spell two letter words	16 (64%)	9 (36%)
4. Identification of alphabets	15 (60%)	10(40%)

When the endless number nume-literacy tools were given to pupils, the children were able to identify, pronounce and spell the numbers. Numbers 1-50 were placed on the table at the corner of the class, each child was asked to pick different numbers and were also asked to spell the figure picked. Also, when the tools were not administered to the control group, the pupils were able to read / recite and spell. This shows that the pupils are familiar with the tools and the use of it. The table above shows that items 1,2,3,4 shows rightly responded and high percentage 96%, 76%, 64% and 60% while the wrongly answered items are 4%, 24%, 36% and 40%. Which significantly shows that number game teaches numeral and literacy which develops children's skills.

Research Question 3. Does AI assisted instructional learning tools enhance pre-schoolersnume-literacy skills?

Questions	Right %	Wrong%
1. Recite number 1-10 and spell	21 (84%)	4(16%)
2. Two letters words and three letter words is equal to what	24 (96%)	1(4%)
3. How many colours are there on the floor, separate and calculate	19(76%)	6 (24%)

The table above demonstrated that those pupils have knowledge about nume-literacy skill in the game provided. The same game that tested nume-literacy skills showed that 84% of the pupils rightly answered the questions while 16% answered wrongly. Item 2 and 3 showed that 96% and 76% were right while 4% and 24% answered wrongly. The outcome of the study shows holistically that the pupils have nume-literacy skills.

Discussion of Findings

The study investigated the impact of AI-assisted instructional learning tools on preschoolers' numeracy and literacy skills, yielding significant results. The findings exposed that these AI-driven tools led to notable enhancements in numeracy skills. For example, children demonstrated a remarkable ability to answer basic addition questions, with 100% success in one instance. This indicates that interactive number games foster engagement and a strong understanding of fundamental concepts. Even in the control group, where no AI tools were used, pupils showed proficiency in basic numeracy, yet the experimental group benefited clearly from the engaging activities provided by AI.

Similarly, the tools significantly improved literacy skills. The high percentage of correct responses in literacy tasks, such as identifying letters and spelling words, shows the effectiveness of AI in promoting familiarity with language. Immediate feedback from the AI systems helped reinforce learning, ensuring that children corrected mistakes in real-time.

Furthermore, the study dug out the development of 'nume-literacy' skills, which is an integrated approach combining numeracy and literacy. This showed that children were able to learn collaboratively and apply their skills, leading to holistic cognitive development.

Conclusion

This study investigated the impact of AI-assisted instructional learning tools on pre-schoolers' numeracy and literacy (nume-literacy) skills at AFUED ECE Centre.

The study revealed that AI-powered tools significantly improved pre-schoolers' numeracy skills by engaging them in interactive number recognition, counting activities, and pattern identification. AI-driven adaptive learning systems provided real-time feedback and personalised learning experiences, leading to better mathematical understanding compared to traditional methods.

AI tools were found to be highly effective in promoting literacy skills among preschoolers. The use of AI-supported phonics, letter recognition exercises, and interactive storytelling activities improved children's vocabulary, pronunciation, comprehension, and fluency. AI provided immediate corrections and reinforcement, enabling better retention of literacy concepts.

The integration of AI in early childhood education strengthened both numeracy and literacy skills, demonstrating that nume-literacy can be effectively developed through AI-assisted instruction. AI facilitated interdisciplinary learning, allowing children to make connections between numbers, words, and real-life problem-solving, thereby fostering a holistic cognitive development approach.

Despite these positive outcomes, challenges such as unequal access to AI technology, ethical concerns regarding data privacy, and the need for teacher training in AI utilisation were identified. The study underscores the necessity of balancing AI-assisted instruction with traditional teaching methods to maximise learning benefits while maintaining human interaction. The study promoted critical thinking skills and logical thinking skills. It promoted social emotional interaction. It also promoted language development and word formation.

Recommendations

Enhancing Preschoolers' Numeracy Skills through AI. Educational policymakers should integrate AI-powered numeracy programs into early childhood curricula to strengthen foundational math skills.AI-driven games and virtual simulations should be further developed to reinforce mathematical concepts in an engaging and age-appropriate manner. Schools should incorporate AI-assisted phonics and language development tools into early learning environments to enhance preschoolers' reading and communication abilities.

AI-based speech recognition and interactive storytelling applications should be leveraged to provide personalised reading experiences that cater to each child's learning pace. Educators should adopt AI-assisted

interdisciplinary learning approaches that seamlessly integrate numeracy and literacy instruction, allowing preschoolers to develop both skills simultaneously.AI-enhanced collaborative learning activities should be introduced to encourage problem-solving, critical thinking, and logical reasoning in early learners.

Government and educational institutions should ensure equitable access to AI learning tools, especially in underprivileged communities, to prevent a digital divide. Public-private partnerships should be encouraged to provide affordable AI-powered educational resources to early childhood centres.AI-assisted learning should complement—not replace—teacher-led instruction to preserve essential human interaction in early childhood education. Teachers should be trained in using AI as a supportive tool while maintaining their role in fostering social and emotional learning. Strict regulations should be established to protect preschoolers' data privacy and ensure ethical AI implementation in early learning environments. AI tools should be designed with transparency and inclusivity to prevent algorithmic biases that may disadvantage certain learners.

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INVESTIGATING GOVERNMENT COLLABORATION WITH THE CAREGIVERS IN EARLY CHILDHOOD EDUCATION SETTINGS IN ONDO STATE

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Abstract
This study examines government collaboration with caregivers in Early Childhood Care and Education (ECCE) in Ondo State, Nigeria, with a focus on supporting skill development through collaborative efforts. Employing a qualitative research design, data were collected through structured interview questions directed at a stratified sample of 100 caregivers across various ECCE settings. The findings reveal that a significant majority of caregivers perceive government collaboration as positive and supportive, particularly through professional development training programs such as Reggio Emilia and Jolly Phonics. However, challenges were also identified, including a lack of appropriate materials, ineffective supervision, and insufficient funding for public schools, which hinder the effective implementation of training outcomes. These obstacles underscore the need for enhanced government support and resource allocation to facilitate meaningful collaboration with caregivers. This study contributes to the understanding of the dynamics of government-caregiver partnerships and offers recommendations for improving collaboration and addressing the identified challenges.
Keywords*:* Early Childhood Education (ECE), Caregivers, Caregivers' Skill Development, Government Collaboration

Introduction

Government collaboration as a specific, formal form of multi-sector partnership in which the Early Childhood Care and Education (ECCE) refers to programs and services that support children's development and learning from birth to around age eight. These include various activities, including healthcare, nutrition, socialisation, play-based learning, and early literacy and numeracy education (Akinrotimi & Olowe, 2016). ECCE can be centre-based, community-based, or home-based, and is also known as early childhood development (ECD) or early childhood education and care (ECEC) (Rao *et. al.,* 2017).

ECCE is a crucial stage for a child's physical, socio-emotional, cognitive, and motor development. The early years are critical for brain development, and high-quality ECCE programs provide the stimulation and support needed for optimal growth (UNICEF, 2017). This foundational period lays the groundwork for lifelong learning, behaviour, and mental and physical health, helping children develop essential cognitive, social, emotional, and physical skills needed to navigate the world around them. Additionally, ECCE promotes equity and inclusion by providing all children, regardless of socio-economic background, with equal opportunities for learning and development (Rao *et al.,* 2017).

As pointed out by the United Nations Educational, Scientific and Cultural Organisation (UNESCO), investing in inclusive ECCE is a major investment in fostering social cohesion, gender equality, holistic development, and lifelong learning. This investment can improve workforce productivity, reduce the need for remedial education and social services, and contribute to long-term economic growth. A 2017 UNICEF report expresses that ECCE is important for individuals and societies to achieve their full growth potential. The Sustainable Development Goals (SDGs) recognise the importance of ECCE, with SDG target 4.2 aiming to ensure that all girls and boys have access to quality early childhood development, care, and pre-primary education by 2030 (UNICEF, 2017). To achieve these objectives, there must be an equilibrium between the caregivers, who are directly connected to the children, and government parastatals. ECCE settings aim to provide a strong foundation for children's development, encompassing crèches, nursery schools, and kindergartens that cater to children aged 0 to 5 years (Rachael-Waaka *et al.,* 2019). The success of these programs depends on several factors, including caregivers' skills, government policies, funding, and infrastructure.

Caregivers are responsible for providing care, support, and education to young children, significantly influencing their early learning experiences (Ogunyemi, 2019). Their skills must align with the objectives of early childhood education, as outlined in the National Policy on Education, which emphasises the importance of preparing children for primary education and instilling social norms. However, many caregivers in Ondo State lack access to adequate professional development opportunities, hindering their ability to provide high-quality education (Akintorimi & Olowe, 2016).

To effectively address the social, emotional, cognitive, and physical needs of children, caregivers must be equipped with appropriate skills. The Glossary of Education Reform (2016) defines 21st-century skills as a broad set of knowledge, skills, work habits, and character traits that are critically important to success in today's world. Assessment Group 5 (2024) defines skill as an individual's ability to perform a specific task or solve a problem at a high level of proficiency. The World Economic Forum (2025) emphasises that adaptability and collaboration, alongside cognitive skills, play a critical role in this context. Regular professional development is essential for caregivers to enhance their skills and stay updated with best practices in early childhood education. Government collaboration is vital in facilitating this professional development training. Such ongoing learning enables caregivers to deliver exceptional care and support to young children. Caregivers in ECCE settings require a multitude of skills to effectively support children's development (Forus Training, 2025). They should excel in communication and listening, be patient, and manage behaviour to create a warm and welcoming environment. It is also important for them to help children express their feelings and develop social skills. Additionally, caregivers need physical abilities, like stamina and dexterity, to meet the children's needs effectively.

Grey and Purdy (2018) consider government is involved. The involvement of the government plays a crucial role in encouraging caregivers to incorporate professionalism. According to Oduolowu (2020), effective collaboration fosters the sharing of resources, best practices, and innovations, ultimately leading to improved educational outcomes for children. Governments are increasingly aware of the importance of investing in ECCE and often encourage skill development through collaborative efforts (UNESCO, 2025). These efforts may include funding and resources, policy frameworks, partnerships with NGOs, and the implementation of training programs (Care India Welfare Trust, 2025). For instance, the government of Georgia, with support from UNICEF, developed national standards for preschool education and a professional competency profile for educators in 2017 (UNESCO,2021). The Healey-Driscoll administration in Massachusetts released the Massachusetts Workforce Agenda in 2024, which includes caregivers among its key strategies (Massachusetts Healthy Ageing Collaborative, 2024).

Despite these government efforts, caregivers may face challenges in collaborating with the government (Research Gate, 2024). These challenges can include a lack of consistent funding, insufficient infrastructure, restrictive policies, and communication barriers (Research Gate, 2024). These things are necessary for effective delivery of government investment contributed through collaboration; without them, the labour of skilful caregivers may still be of little or no effect. All of these challenges cut across different levels. For example, in some countries, the role of the caregiver remains unrecognised by the state, leading to a lack of support and integration into health care systems (American Association of Retired Persons, 2024). This paper will

investigate government collaboration and the skills of caregivers in ECCE settings in Ondo State, calling attention to the importance of these relationships in fostering quality early childhood education.

Statement of Problem

Early Childhood Care and Education (ECCE) is crucial for a child's development, with skilled caregivers playing a key role in creating supportive environments. Despite various government initiatives aimed at providing training programs to collaborate with caregivers in Early Childhood Care and Education (ECCE), significant inconsistencies remain in how effectively caregivers implement the knowledge and skills imparted to them. This discrepancy raises serious concerns regarding the overall effectiveness of such collaborations in fostering high-quality child development. Caregivers may be facing substantial challenges that hinder their ability to translate training into practice, thereby impacting the quality of education provided in ECCE settings. These obstacles may include insufficient access to resources, inadequate materials, lack of ongoing support, and ineffective communication with government agencies. Such barriers not only impede caregivers' ability to implement effective educational practices but also diminish the potential benefits of government programs designed to enhance their skills.

Without a comprehensive understanding of caregivers' experiences and perceptions related to government collaboration, it becomes increasingly difficult to formulate effective policies and strategies that can strengthen these partnerships. This study aims to investigate the nature of government support for caregivers, explore caregivers' perceptions of this collaboration, and identify the specific challenges they encounter. By addressing these issues, the research seeks to provide actionable recommendations that can enhance the effectiveness of government-caregiver partnerships in ECCE, ultimately contributing to improved outcomes for children.

Objectives of the Study

The general objective is to investigate government collaboration with the caregivers in early childhood education settings in Ondo State, while the specific objective is to:

1. Investigate the government's collaboration in skill development
2. To estimate the challenges faced by caregivers in collaborating with the government

Research Questions

1. Does the government encourage skill development through collaboration?
2. Do caregivers have challenges in collaborating with the government?

Methodology

This study employed a qualitative research design. The population consisted of all participants in the workshop in Ondo State, Nigeria, focusing specifically on the government's role in supporting skill development through collaborative efforts. Data were collected through structured interview questions directed at caregivers working in diverse ECCE settings. To ensure a representative sample, participants were selected using a stratified sampling method, allowing for a comprehensive cross-section of caregivers across various demographics and locations within Ondo State. A total of 100 caregivers participated in the study, which provides a robust dataset for analysis. The interview questions were designed to assess caregivers' skills, their perceptions of government collaboration, and the challenges they face in this partnership. By employing open-ended questions, the study aimed to capture nuanced perspectives and rich qualitative data that could inform the understanding of caregivers' experiences. To facilitate high response rates, interviews were conducted during training sessions and workshops attended by the caregivers. This strategic timing ensured that participants were engaged and more likely to provide thoughtful responses. Once the data were collected, they were analysed thematically to identify key patterns and perspectives. The findings were organised into themes that reflect caregivers' skill levels, perceptions of government collaboration, and the challenges encountered in their interactions with governmental bodies. This comprehensive approach ensures that the findings are reflective of the caregivers'

lived experiences and provides a foundation for recommendations aimed at improving government collaboration in early childhood education.

Results

Research Question 1: Does the government encourage skill development through collaboration?

Responses to question 1 from the respondents conclude that government collaboration on a large proportion was good and encouraging, as 58 reported how much the government encourage collaboration, and 32 reported government collaboration was on average, while 10 of the caregivers had poor reports about government collaboration. This shows that the government collaborates enough with the caregivers of ECCE in Ondo State. Caregivers responded to how the government has been collaborating with them through professional development training, including Reggio Emilia yearly training and Jolly phonics, they also reported that the likes of these training give good support to them and aid the improvement of what they understand.

Research Question 2: Do caregivers have challenges in collaborating with the government?

Responses to question 2 from the respondents indicated that caregivers have challenges in collaborating with the government. In fact, 50 caregivers have more challenges, while 50 equally have greater challenges with government collaboration. No respondent is free from challenges with government collaboration. Some of the challenges that were repeatedly reported includes lack of appropriate materials to implement training outcome, some respondents emphasize the need for provision of some appropriate materials for creativity especially to the preprimary classes while some discussed about effective supervision of the government to these preprimary classes to ensure the standard of delivering learning to the young ones according to the policy of education, some also complained bitterly on the keeping of necessary materials that is meant to use for facilitating learning reporting that even when these materials are available, access to them are denied. Other challenges mentioned was that some of the school head are uninformed about most items in the policy of education, like the usage of the language of the immediate environment to teach children, the inability of the government to fund public schools appropriately, which encapsulates insecurity issues like dilapidated buildings, and little or no materials to facilitate a standard learning process for children.

The responses to the first research question demonstrate a generally favourable perception of government collaboration in skill development among caregivers in Ondo State. A notable 58 respondents expressed satisfaction with government initiatives, particularly professional development training programs like Reggio Emilia and Jolly Phonics. These programs are not merely instructional; they serve as transformative experiences that empower caregivers with essential pedagogical skills and foster a deeper understanding of effective teaching methodologies. The enthusiasm surrounding these initiatives indicates that government efforts are making a significant impact on enhancing caregiver competence and building confidence in early childhood education.

However, the presence of 32 respondents rating government collaboration as average, alongside 10 reporting poor experiences, shows a significant area for improvement. This disparity points to an uneven landscape where not all caregivers benefit equally from government initiatives. Factors contributing to these mixed experiences may include variations in program accessibility, differing levels of engagement among caregivers, and the specific needs of diverse educational contexts. Addressing the concerns of those who feel underserved is essential; targeted outreach and particular support could enhance the inclusivity and effectiveness of these programs, ensuring that all caregivers have access to the resources they need to thrive.

In stark contrast, the findings regarding the second research question reveal that challenges in collaboration are not only prevalent but also deeply entrenched among caregivers. The fact that half of the respondents indicated significant difficulties places interest on the systemic obstacles that persist despite government efforts. Key issues such as the lack of appropriate materials and ineffective supervision emerge as critical barriers to successful collaboration. These challenges suggest that professional development alone is insufficient; without the necessary tools and resources to implement learned strategies, caregivers may struggle to translate their training into practice.

The caregivers' calls for improved resources, particularly for fostering creativity in pre-primary education, reflect a growing recognition of the importance of a well-rounded educational experience for young children. It is crucial that government initiatives not only deliver training but also ensure that caregivers have

access to high-quality materials and resources that support creative learning environments. This holistic approach would empower caregivers to engage children more effectively and nurture their developmental needs.

Moreover, the concerns regarding uninformed school heads and inadequate funding express deeper systemic issues within the educational framework. The lack of awareness among leadership about key educational policies, such as the use of local languages in instruction, can significantly hinder the implementation of effective teaching practices. Furthermore, the challenges posed by insecurity and deteriorating infrastructure, including dilapidated buildings, exacerbate the difficulties faced by caregivers. These issues not only affect the learning environment but also contribute to caregiver burnout and frustration, ultimately impacting the quality of education provided to children.

In conclusion, while the positive aspects of government collaboration in skill development for caregivers are acknowledged, the findings reveal a landscape riddled with significant challenges. A multifaceted approach is essential, one that not only enhances training programs but also addresses the systemic barriers that impede effective collaboration. By investing in resource provision, ensuring informed leadership, and prioritising infrastructural improvements, the government can create a more supportive environment for caregivers. Such efforts will not only enhance the professional development of caregivers but also ultimately benefit the young learners they serve, fostering a brighter future for early childhood education in Ondo State.

Conclusion

The findings of this study reveal a commendable level of skill among caregivers in Ondo State, indicating that many are equipped to foster children's developmental needs effectively, this attest that the government truly collaborate with them for skill development. In summary, while government collaboration in skill development for caregivers in Ondo State shows promise, significant challenges were investigated which must be addressed for meaningful progress. The positive impact of initiatives like Reggio Emilia and Jolly Phonics highlights the potential for effective training, but disparities in access and resources reveal a need for a more inclusive approach. Caregivers face systemic barriers, including inadequate materials and uninformed leadership, which hinder their ability to implement learned strategies effectively. To foster a truly supportive environment, the government must not only enhance training programs but also invest in resource provision, informed oversight, and infrastructural improvements. By doing so, they can empower caregivers and significantly elevate the quality of early childhood education, ultimately benefiting the young learners who are the future of the community.

Recommendations

1. The government should implement continuous professional development programs for caregivers to enhance their skills.
2. Government should allocate adequate resources to ECCE settings to provide necessary teaching materials.
3. The government should conduct campaigns to educate caregivers about educational policies, especially regarding the use of the mother tongue.
4. Pre-primary school heads should be adequately exposed to mastery of policies of education
5. Feedback Mechanisms should be established for regular feedback systems and to assess government collaboration and incorporate caregivers' input into policy-making.
6. Caregivers should be encouraged to understand, integrate and utilize no cost, low-cost materials as improvisation for creative materials.

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EXPLORING THE IMPACT OF GESTURE-BASED PHONICS INSTRUCTION ON EARLY LITERACY SKILLS IN EARLY CHILDHOOD EDUCATION CLASSROOMS

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Abstract
Persistent challenges in early literacy outcomes and declining learner engagement under predominantly visual-auditory phonics instruction have prompted renewed interest in developmentally appropriate, multisensory approaches to reading instruction. This study examined the effect of Gesture-Based Phonics instruction on phonemic awareness, decoding, reading comprehension, and learner engagement among early childhood learners, integrating Montessori-aligned sensory principles. A quasi-experimental pretest-posttest control group design was employed. The population consisted of kindergarten learners in early childhood education classrooms. A total of 150 learners aged 5-6 years participated, with 75 assigned to the Gesture-Based Phonics (GBP) group and 75 to the Traditional Phonics (TP) group across a 12-week intervention. Data were collected using a phonics achievement test validated by a phonics specialist, with a Cronbach Alpha score of 0.89, alongside learner engagement surveys and structured teacher observation rubrics. Results indicated that learners in the GBP group achieved significantly greater gains in phonemic awareness, decoding skills, reading comprehension, and engagement levels compared to those receiving Traditional Phonics instruction. The study recommends embedding gesture-based phonics strategies into core early literacy curricula, strengthening teacher professional development, encouraging parent-supported home-based phonics activities, and advancing longitudinal research on embodied phonics approaches across diverse educational contexts.
Keywords: Synthetic Phonics, Gesture-Based Phonics, Early Literacy, Embodied Learning, Jolly Phonics

Introduction

Learning to read is one of the most important milestones in a child's early education, and at the heart of this journey is phonics. Phonics instruction teaches children how letters and sounds work together to form words. Traditionally, this instruction has focused on what children see and hear: looking at letters, listening to sounds, and connecting the two. However, for many young learners, especially those just starting out, this can feel abstract or even difficult to grasp. Gesture-based phonics instruction offers a more engaging and hands-on way to learn. By introducing physical movement such as hand gestures, body motions, and other kinesthetic actions, children are able to connect sounds with movement. These gestures serve as memory tools that help make the learning process more meaningful. In addition to supporting phonemic awareness and decoding skills, movement can make literacy lessons more interactive, enjoyable, and accessible. This study explores the impact of gesture-based phonics instruction on early literacy development. It focuses on four key areas: phonemic awareness, decoding, reading comprehension, and learner engagement. The approach combines elements from Montessori education, such as storytelling, movement activities, and tactile learning tools, with systematic phonics instruction inspired by the works of Abusomwan et al.(2019) and Lloyd and Wernham (2020). This creates a balanced approach that values both structure and creativity in early literacy instruction. The study involves 150 children between the ages of five and six, drawn from a variety of early childhood education settings. Over a 12-week period, one group will take part in the Gesture-Based Phonics (GBP) program. A comparison group will continue with traditional phonics instruction. The goal is to observe how the two groups progress in their literacy development and how engaged they feel during their learning experiences.

Through this research, we aim to highlight the benefits of integrating movement and sensory activities into early reading instruction. By making learning more physical and interactive, children may not only develop stronger reading skills but also build a more joyful and lasting relationship with language learning.

Phonics instruction, which teaches the relationship between sounds and letters to support reading, has evolved considerably over the past century, influenced by educational philosophies, research findings, and national policies. The National Policy on Education (FGN, 2013) highlights the role of alphabet recognition and play in early literacy development. While it does not prescribe specific instructional methods such as phonics, it encourages pedagogical strategies that engage young learners through letters, sounds, and interactive activities such as play. Early methods, such as analytic phonics, encouraged learners to identify sounds within whole words. For example, teachers might ask children to notice the /k/ sound in cat associated with the letter c (Moats, 2020). This approach, often integrated with whole-language methods, emphasised reading for meaning and relied on memorisation and contextual clues rather than explicit decoding. While analytically appealing, these strategies frequently left behind learners needing more direct instruction in phonemic awareness and decoding (Adoniou et. al., 2018).

During the 1980s and 1990s, the whole language movement emphasised reading as a natural process, prioritising storytelling, literature immersion, and print-rich experiences. Consequently, systematic phonics instruction was often reduced or eliminated. This shift posed challenges for learners, particularly those with dyslexia or language difficulties, who struggled to develop foundational decoding skills (Seidenberg, 2017). Empirical evidence highlighted that literacy acquisition is not entirely automatic; rather, it requires targeted instruction to connect sounds and letters systematically.

In response, structured, explicit phonics instruction became a policy and pedagogical priority. Reports such as the National Reading Panel (2000) and the Rose Report (2006) recommended systematic teaching of phonemic awareness and decoding. Synthetic phonics emerged as a leading method, introducing phonemes individually and then teaching children to blend them into words. For example, learners are taught to blend /c/, /a/, and /t/ to read cat, supported by visual cues, actions, and manipulatives (Abusomwan et al., 2019; Lloyd & Wernham, 2020). Programmes such as Jolly Phonics, Beyond the Jolly Way Phonics, and Letters and Sounds demonstrate synthetic phonics' cumulative structure, which enhances learners' decoding skills, reading confidence, and literacy outcomes (Rose, 2006; Lerner & Lonigan, 2015; Castles et. al., 2018; Buckingham, 2020; Ehri, 2022).

Despite its effectiveness, recent research emphasises multisensory and embodied approaches that integrate physical movement and tactile experiences into phonics instruction. Given the NPE's focus on letters and play, gesture-based phonics aligns naturally with policy objectives by combining letter-sound instruction with multisensory, play-oriented movements, thereby enhancing engagement and literacy outcomes (FGN, 2013). Studies in cognitive science and neuroscience also indicate that gestures and kinesthetic activities improve memory, attention, and brain activation during learning (Mayer, 2020; Zuk et al., 2020; Glenberg et al., 2021). Gesture-based phonics instruction operationalises this principle by linking phonemes with specific movements. For instance, children might move their hand like a snake to represent the /s/ sound or perform a kicking motion for /k/. Such gestures transform abstract phonemes into concrete experiences, activating sensorimotor pathways that reinforce phonemic awareness and decoding. Additionally, movement-based storytelling or tracing letters in sand enhances learning by combining visual, auditory, and kinesthetic modalities, fostering deeper engagement and retention.

The embodied cognition framework underpins this approach, positing that cognitive processing emerges through bodily interactions with the environment (Cook et al., 2008; Goldin-Meadow, 2014; Mayer & Fiorella, 2021; Barsalou, 2023). In literacy contexts, gestures and manipulations are not peripheral but central to internalising phoneme-grapheme correspondences. By physically enacting letter sounds, learners consolidate abstract auditory information with visual and motor representations, strengthening memory and understanding. Complementing this, Montessori pedagogy emphasises child-led, sensory-rich, and movement-integrated learning environments (Montessori, 1912; Lillard, 2019; Randolph et. al., 2023). Practical tools, such as sandpaper letters, tracing trays, and alphabet manipulatives, allow children to see, feel, and act upon letter-sound correspondences. When learners trace the letter m with their finger while vocalising /m/, they simultaneously engage tactile, visual, and auditory channels. These practices promote concentration, independence, and

intrinsic motivation, aligning with developmental appropriateness for early learners. In essence, combining gesture-based phonics with Montessori-inspired tactile experiences bridges the gap between structured phonics instruction and active, multisensory learning. Children not only acquire phonemic awareness and decoding skills but also develop sustained engagement, enjoyment, and confidence in early literacy. The integration of embodied cognition and Montessori principles provides a robust theoretical and practical foundation for this study, offering both a rationale and evidence-based strategy for implementing gesture-enhanced phonics instruction in early childhood classrooms.

Research Objectives

The study aims to:

i. Examine the relative effects of gesture-based phonics instruction and traditional phonics on phonemic awareness in early childhood learners.

ii. Investigate the relative influences of gesture-based phonics and traditional phonics instructions on decoding and reading comprehension in early childhood learners.

iii. determine the extent to which gesture-based phonics is different from traditional phonics instructions on learners' engagement and motivation in early literacy sessions.

Research Questions

In line with the research objectives, the following research question will guide the study.

i. To what extent is gesture-based phonics instruction different from traditional phonics instruction in their impacts on learner engagement and motivation in early literacy sessions?

Hypotheses

The following hypotheses were tested:

H01: There is no significant difference in phonemic awareness between learners exposed to Gesture-Based Phonics (GBP) and traditional phonics(TP) instructions.

H02: There is no significant difference in the decoding and reading comprehension scores of children taught using gesture-based phonics instruction and those taught with traditional phonics instruction**.**

Methodology

This study adopted a quasi-experimental, pretest-posttest control group design to examine the effects of gesture-based phonics instruction on early childhood learners. This design allowed for a direct comparison between learners exposed to gesture-enhanced instruction and those receiving traditional phonics. The study involved 150 kindergarten children aged 5-6 years from three schools in Edo State. Schools were purposively selected based on demographic similarities and prior engagement with phonics programmes. Participants were randomly assigned to either the Gesture-Based Phonics (GBP) group (n = 75) or the Traditional Phonics (TP) group (n = 75).In the Gesture-Based Phonics (GBP) group,learners received instruction integrating coordinated gestures (e.g., kicking motion for /k/, turning head for /t/) representing phonemes, alongside Montessori-aligned materials such as sandpaper letters, tracing trays, and alphabet manipulatives. Lessons followed a synthetic phonics sequence (Abusomwan et. al., 2019; Lloyd & Wernham, 2020), with gestures reinforcing sound-symbol connections and engaging embodied cognition pathways. While learners in the Traditional Phonics (TP) group received standard phonics instruction using visual and auditory methods, including flashcards, oral repetition, and workbook exercises, without kinesthetic reinforcement.

Both groups were taught three times per week over 12 weeks, covering the same phoneme sets within a synthetic phonics framework using: (i) Phonemic Awareness Test (PAT), which assessed children's ability to isolate and manipulate individual phonemes. (ii) Decoding Skills Assessment (DSA), which evaluated blending of phonemes and decoding unfamiliar words. (iii) Reading Comprehension Test (RCT)that measured understanding of age-appropriate passages. (iv) Learner Engagement Survey (LES) was usedto capture learner attention, motivation, and participation through self-report and teacher input. (v) Teacher Observation Rubric was finally used tostructure observations of engagement behaviours, participation, and enthusiasm. All instruments underwent reliability checks: PAT (α = .89), DSA (α = .86), RCT (α = .88), LES (α = .84), and

Teacher Observation Rubric (Cohen's κ = .81). Instruments were piloted in comparable early childhood settings to ensure cultural and developmental appropriateness.

Results

Paired sample t-tests were conducted to compare pre- and post-test scores between the Gesture-Based Phonics (GBP) and Traditional Phonics (TP) groups. Results consistently showed that learners in the GBP group outperformed those in the TP group across all literacy domains. There is no significant difference in phonemic awareness between learners exposed to Gesture-Based Phonics (GBP) and traditional phonics (TP) instructions.

Table 1. Paired t-Test Results for Phonemic Awareness Scores

Group	Pre-test M (SD)	Post-test M (SD)	T	df	P
GBP	68.5 (5.9)	85.4 (6.1)	14.32	74	< .001
TP	68.1 (6.2)	78.2 (7.5)	9.24	74	< .001

Both instructional approaches improved learners' phonemic awareness. However, the GBP group showed significantly greater gains, illustrating the cognitive and pedagogical value of multisensory, embodied learning. For example, learners associated the /s/ sound with a slithering hand gesture, while the /k/ sound was reinforced with a kicking motion. These gestures, combined with tactile Montessori materials such as sandpaper letters and tracing trays, strengthened the link between sound, symbol, and movement, supporting both memory and active engagement (Abusomwan et al., 2019; Lloyd & Wernham, 2020).

There is no significant difference in the decoding and reading comprehension scores of children taught using gesture-based phonics instruction and those taught with traditional phonics instruction.

Table 2. Paired t-Test Results for Decoding Skills and Reading Comprehension

Group	Measure	Pre-test M (SD)	Post-test M (SD)	Mean Gain	t	df	p
GBP	Decoding Skills	65.3 (6.4)	83.7 (6.0)	+18.4	13.45	74	< .001
GBP	Reading Comprehensio n	64.7 (7.1)	82.1 (6.5)	+17.4	12.82	74	< .001
TP	Decoding Skills	65.0 (6.2)	76.2 (7.4)	+11.2	8.15	74	< .001
TP	Reading Comprehension	64.5 (6.8)	74.1 (7.7)	+9.6	7.92	74	< .001

The GBP group achieved larger gains in decoding and comprehension compared to TP learners. Gesture-based activities, such as blending sounds while tracing letters or performing movement sequences for words, allowed learners to internalize phoneme-grapheme relationships more effectively. These strategies illustrate how embodied actions can enhance cognitive processing and reinforce the stepwise synthetic phonics sequence.

The extent to which gesture-based phonics is different from traditional phonics instructions on learners' engagement and motivation in early literacy sessions.

Table 3. Paired t-Test Results for Learner Engagement and Motivation

Group	Measure	Pre-test (SD)	M	Post-test (SD)	M	Mean Gain	T	df	p
GBP	Learner Survey Engagement	65.5 (6.3)		82.8 (5.9)		+17.3	11.92	74	< .001
GBP	Teacher Rubric Observation	66.1 (7.0)		83.2 (6.4)		+17.1	11.47	74	< .001
TP	Learner Survey Engagement	64.8 (6.5)		75.0 (6.9)		+10.2	7.86	74	< .001
TP	Teacher Rubric Observation	65.2 (6.8)		74.9 (7.1)		+9.7	7.35	74	< .001

Gesture-based phonics instruction significantly enhanced engagement and motivation. Learners participated more actively in storytelling, traced letters while performing corresponding gestures, and used tactile materials in combination with movement. These hands-on, multisensory experiences are consistent with Montessori principles, which emphasize child-led, sensory-rich learning, and demonstrate the benefits of embodied cognition in early literacy development (Montessori, 1912; Mayer & Fiorella, 2021). Across all measures: phonemic awareness, decoding, reading comprehension, and engagement, the GBP group showed superior outcomes compared to TP learners. Practical classroom examples, including performing gestures for sounds and blending phonemes through movement, highlight how multisensory, embodied approaches grounded in Montessori principles can enhance early literacy acquisition more effectively than traditional phonics instruction alone.

Discussion of Findings

The primary aim of this study was to examine the effect of Gesture-Based Phonics (GBP) instruction on early literacy outcomes, including phonemic awareness, decoding, reading comprehension, and learner engagement, among kindergarten children. Results from the paired sample t-tests consistently indicated that learners in the GBP group significantly outperformed their peers in the Traditional Phonics (TP) group across all measured domains.

Hypothesis 1 examined whether there was a significant difference in phonemic awareness between learners exposed to GBP and TP instruction. As presented in Table 1, GBP learners achieved a pre–post gain of 16.9 points compared to a gain of 10.1 points in the TP group ($t = 14.32$, $df = 74$, $p < .001$). These results suggest that incorporating coordinated gestures for each phoneme, alongside Montessori-aligned materials such as sandpaper letters, tracing trays, and alphabet manipulatives, enhanced learners' ability to isolate, identify, and manipulate individual sounds. For instance, learners traced the letter “s” while simultaneously performing a

"snake-like" hand motion, facilitating the internalisation of the /s/ phoneme through both visual and kinesthetic channels. These findings are consistent with the work of Cook *et al*. (2008) and Macedonia and Repetto (2017), who reported that gestures paired with linguistic concepts reinforce memory retention and cognitive processing. Similarly, Goldin-Meadow (2014) emphasises that gestures function as cognitive tools, supporting the learning of abstract concepts and deeper engagement. The observed improvements in the GBP group also align with Montessori principles, which advocate for sensory-rich, hands-on learning to foster concentration, independence, and meaningful exploration (Montessori, 1912; Lillard, 2019). The larger effect observed in this study compared to conventional synthetic phonics programmes may be attributed to the multimodal, embodied approach that engages motor and sensory pathways, rather than relying solely on visual and auditory instruction.
Hypothesis 2 addressed differences in decoding skills and reading comprehension between GBP and TP learners. As shown in Table 2, GBP learners exhibited mean gains of 18.4 points in decoding and 17.4 points in reading comprehension, compared to gains of 11.2 and 9.6 points, respectively, in the TP group (t-values = 13.45 and 12.82, df = 74, $p < .001$). These results indicate that the systematic integration of synthetic phonics sequencing (Abusomwan *et. al*., 2019; Lloyd & Wernham, 2020) with movement-based gestures strengthens learners' phoneme-grapheme correspondence and promotes more accurate word decoding. The superior outcomes for the GBP group corroborate findings from Ehri (2022) and Buckingham (2020), who note that structured, cumulative phonics instruction enhances reading accuracy. However, this study extends previous research by demonstrating that the addition of gestures and multisensory experiences can amplify these gains. While some prior studies of traditional phonics report modest improvements in decoding, the present study highlights that learners benefit more when instruction engages multiple sensory channels and aligns with developmental needs (Seidenberg, 2017). For example, during reading activities, children in the GBP group physically acted out the blending of /c/, /a/, and /t/ to read "cat," linking motor activity with phonological processing and enhancing retention.

Hypothesis 3 examined the impact of GBP and TP instructions on learner engagement and motivation. Table 3 shows that GBP learners experienced mean gains of 17.3 and 17.1 points on the Learner Engagement Survey and Teacher Observation Rubric, respectively, compared to 10.2 and 9.7 points in the TP group (t-values = 11.92 and 11.47, df = 74, $p < .001$). Observational data indicated that learners in the GBP group were more attentive, participated more actively in storytelling and tracing activities, and displayed enthusiasm for learning. These findings support prior research on the cognitive and motivational benefits of embodied learning. Goldin-Meadow (2014) and Macedonia and Repetto (2017) highlight that gestures facilitate deeper cognitive processing while sustaining learner interest. Montessori-aligned activities, such as tactile tracing of letters or kinesthetic storytelling, further reinforced engagement by allowing learners to explore concepts independently, in ways that are meaningful and enjoyable. The combination of movement, sensory tools, and systematic phonics created an environment in which learners were cognitively and physically invested in their learning, providing evidence that engagement can be enhanced through embodied, multisensory strategies.

Conclusion

In summary, this study demonstrates that gesture-based phonics instruction, which offers a developmentally responsive and evidence-based approach to early literacy instruction, yields significantly stronger outcomes in phonemic awareness, decoding, reading comprehension, and learner engagement than traditional phonics methods. By integrating structured synthetic phonics with purposeful gestures and sensory-rich materials, the intervention aligns with the principles of embodied cognition, which emphasise the role of bodily movement and sensory experience in cognitive development (Mayer & Fiorella, 2021; Barsalou, 2023), as well as Montessori's emphasis on child-centred, hands-on learning environments that foster independence and active engagement. The structured phoneme-grapheme progression provided by the synthetic phonics frameworks of Abusomwan *et. al*. (2019) and Lloyd and Wernham (2020), when combined with gestures and tactile tools, created a balanced instructional approach that was both systematic and interactive.

The physical actions associated with each phoneme functioned as cognitive anchors, enhancing memory retention, conceptual understanding, and motivation, including for learners who typically struggle with conventional, predominantly visual-auditory phonics instruction. Differences between the present findings and

some prior research on traditional synthetic phonics may be attributed to the limited use of multisensory and kinesthetic strategies in conventional approaches, which often underutilise learners' embodied and affective capacities. By contrast, the gesture-based approach engaged multiple sensory pathways, supporting both cognitive and motivational dimensions of learning and contributing to a pedagogical shift toward embodied literacy instruction that supports the whole child. While the findings provide strong empirical support for integrating gesture-based phonics into early childhood classrooms, future research should examine long-term retention, scalability, and application across diverse educational contexts to further inform curriculum design and policy in early childhood literacy education.

Recommendations

Based on these findings, the following recommendations are made.

1. **Integrate Gesture-Based Phonics into Core Literacy Instruction**

Early childhood educators should adopt gesture-based strategies with traditional phonics methods. By pairing phonemes with meaningful physical movements, teachers can enhance students' engagement, memory retention, and decoding accuracy.

2. **Provide Professional Development for Teachers**

Training programs should equip educators with the knowledge and skills needed to incorporate gestures effectively into phonics instruction. Emphasis should be placed on the cognitive benefits of embodied learning and alignment with both Montessori and synthetic phonics practices.

3. **Utilise Multisensory Approaches to Support Diverse Learners**

Gesture-based instruction should be emphasised particularly for students with learning difficulties, English language learners, and kinesthetic learners. It enables differentiated instruction and promotes inclusive, student-centred learning environments.

4. **Encourage Parental Involvement Using Gestures at Home**

Educators should engage parents and caregivers by sharing gesture-based phonics techniques that can be used in home settings. Activities that incorporate movement and phoneme practice help reinforce classroom learning and strengthen home-school connections.

5. **Incorporate Ongoing Assessment and Observation**

Formative assessments and structured teacher observations should be used to monitor student progress and adapt instruction as needed. Tracking engagement and literacy development allows for continuous refinement of gesture-based strategies.

6. **Support Further Research and Longitudinal Studies**

Future studies should investigate the long-term effects of gesture-based phonics instruction on reading fluency, comprehension, and writing development. Research should also explore its scalability across different educational models and cultural contexts.

By embracing multisensory, movement-rich approaches rooted in developmental theory and structured phonics methodology, educators can transform early literacy instruction into a more engaging, inclusive, and effective learning experience.

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EXPLORING THE IMPACT OF PARENT-TEACHER PARTNERSHIP ON CHILDREN'S SOCIO-EMOTIONAL DEVELOPMENT AMONG PRIMARY SCHOOLS IN LAGOS STATE

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Abstract
The study examined the impact of parent-teacher partnership on children's socio-emotional development in primary school in Lagos State. A descriptive survey research design was adopted for the study. The population of the study comprises teachers and parents of primary school pupils. The study sample consists of 216 participants. A multistage sampling procedure was employed for the study. A simple random sampling technique was used to select 4 local government education authorities in Lagos State: Alimosho, Amuwo-Odofin, Badagry, and Ojo LGEAs, respectively. A Stratified sampling technique was used to select 6 primary schools in each of the selected LGEAs in Lagos State, in order to ensure that the sample accurately reflects the demographic diversity of the population. The purposive sampling technique was used to select 4 teachers and 5 parents from each of the selected primary school pupils in the selected LGEAs in Lagos State. A self-designed instrument was used for the study titled 'Parent-Teacher Partnership on Children's Socio-Emotional Development Questionnaire (PTP_CSEDQ). The reliability of the instrument was assessed using the Cronbach Alpha technique, yielding a coefficient value of 0.83. The results depict a significant positive relationship between parent-teacher partnership and children's socio-emotional development in early childhood education ($r= 0.46$; $p<0.05$). The result also affirms a significant positive relationship between parent-teacher partnership and children's ability to form and maintain friendships in early childhood education ($r= 0.51$; $p<0.05$). The study recommended that there should be structured training programs for teachers focused on effective communication strategies and cultural sensitivity, enabling them to engage diverse parent populations.
Keywords: Communication, Holistic Approach, Parent-Teacher Partnership, Socio-Emotional Development

Introduction

Early childhood education is crucial in shaping a child's development, laying the groundwork for future academic success and overall well-being (Okudo & Omotuyole, 2013).

During this crucial period, socio-emotional development is a key factor. It affects a child's ability to build relationships, manage their emotions, and interact successfully in social situations (Deeba, 2021). Teachers do more than just teach these skills in the classroom. It requires a collaborative approach, actively involving parents as key partners in the educational process.

When parents and teachers work together, using open communication, mutual respect, and shared goals, they can create a positive effect. This collaboration can then improve children's social and emotional development. Understanding how parents and teachers work together, and how this affects children's social and emotional development, is especially important in Lagos State, Nigeria. Different socioeconomic backgrounds and cultural factors shape the educational environment there (Anazia *et. al*., 2025). Analysing the nuances of these collaborations in this specific context can provide profound insights, thereby guiding the enhancement of early childhood education practices and fostering holistic child development. Early childhood education is critical because it provides the basic skills and knowledge children need to succeed in school and later in life, creating valuable educational experiences (Okudo & Omotuyole, 2013). Parental involvement in education is crucial, and schools can greatly benefit from the support of parents (Hafiz & Farik, 2017).

In Lagos State, where the educational environment is shaped by diverse socioeconomic and cultural backgrounds, parent-teacher partnerships are crucial for a child's development, especially in early childhood education (Azad *et. al*., 2020). These collaborative relationships, which involve joint endeavours between parents and teachers, are crucial in shaping a child's socio-emotional development; they significantly influence a

child's capacity to engage in social exchanges, regulate their emotions, and cultivate a robust self-concept (Oranga *et. al*., 2023).

Strong relationships between parents and teachers are increasingly recognised as essential for effective early childhood education, providing a comprehensive approach to supporting children's growth (Angwaomaodoko, 2023). The importance of parents and community members in education has received considerable attention, as it's considered a key factor in improving educational outcomes and fostering social improvement (Eden *et.al*., 2024).

When parents and teachers work together, they often experience shared satisfaction in helping children and the school environment improve (Mburu *et al*. 2021).

Moreover, the research shows that these partnerships significantly improve a child's academic success, social skills, and overall well-being, creating a supportive environment that goes beyond the classroom (Hibi& Assadi, 2021). This collaborative approach acknowledges that learning goes beyond the classroom, seeing it as a continuous process that thrives on consistent reinforcement and shared understanding between home and school. In the context of socio-emotional development, the importance of parent-teacher partnerships is particularly clear. These partnerships provide a way to align strategies and interventions, which helps address a child's emotional needs and develop their social skills.

Parent-teacher partnerships are when parents and teachers work together to help a child grow and learn (Eden *et al*., 2024). These partnerships go beyond the usual parent-teacher interactions, like conferences or report cards. They involve a more complete and ongoing discussion about the child's learning, behaviour, and overall well-being. Effective partnerships between parents and teachers are characterised by open communication. Such interaction includes regular meetings, parent-teacher conferences, digital platforms, and home-school communication logs. These methods allow for the consistent and open sharing of information between the home and the school.

This technique encompasses a range of communication methods: scheduled meetings, phone conversations, emails, and digital platforms. These tools help keep both parents and teachers in the loop regarding a child's development and any difficulties that might arise.

Successful partnerships also require mutual respect and understanding, where parents and teachers value each other's viewpoints and skills. It's important to recognise that parents have unique insights into their child's personality, strengths, and needs. At the same time, teachers have specialised knowledge of child development and effective teaching methods.

Furthermore, successful partnerships establish shared goals and expectations for the child's learning and development, ensuring that both parents and teachers are working towards the same objectives. Parental involvement and collaboration within the community entail active participation in community services alongside children, as well as the identification and application of community resources to bolster students' learning and overall development (Oranga *et al*., 2023). When parents actively participate in their children's education, students often show improved academic performance, better attendance, and stronger social-emotional development (Eden *et. al*., 2024). Parental involvement includes both a commitment and active participation from parents in their child's education and school activities (Oranga *et. al*., 2023).

Parents and teachers also experience mutual support and satisfaction when they work together to create positive changes in children and the school environment (Mburu *et. al*., 2021).

When parents and teachers work together, they create a supportive environment for the child. This approach helps learning to continue both at home and in the classroom.

Parents are essential in creating a school environment that meets their child's unique needs. Working together, schools, parents, and communities can help create positive social change (Eden *et. al*., 2024). Parents can provide essential skills and talents that significantly enhance the educational experience of young learners (Oranga *et. al*., 2023). During the early years of childhood, there is a significant growth in social and emotional skills. This development lays the groundwork for future relationships, academic success, and overall mental health, as shown by Dachalson *et. al*., (2016). During this time, children develop key skills, including emotional control, empathy, social awareness, and conflict resolution (Edwards, 2012). These skills don't come naturally; they grow through interactions with carers, friends, and teachers. Parent-teacher partnerships are crucial for enhancing these skills in both domestic and educational environments (Denham, 2006).

The evaluation and promotion of socio-emotional learning in early childhood continued to be important areas of study for both educators and researchers (Mondi *et al*. 2021).

These abilities are the foundation for a wide range of accomplishments in psychosocial, academic, and professional areas (Garibaldi & Josias, 2015). Positive emotional interactions between a child and their teacher are essential for the child's social and emotional development (Mihaela, 2015). Interactions between adults and children are critical for promoting a child's social, emotional, and academic growth (Rimm-Kaufman *et. al*. 2003). Furthermore, social-emotional skills are crucial for navigating the complexities of social interactions, adapting to different environments, and contributing to a well-functioning society (2021).

Therefore, parent-teacher partnerships are crucial because they offer a unique chance to create a consistent and supportive environment that helps develop these skills. These partnerships create a unified approach to supporting a child's social and emotional growth. This ensures that the values, expectations, and interventions are consistent in both environments.

When parents and teachers work together, it greatly helps a child's academic success, social skills, and overall well-being, creating a supportive environment that goes beyond the classroom. Educators play a crucial role in supporting emotional development, as they can intentionally help children grow emotionally (Thümmler *et. al*., 2022). The quality of interactions between children and their teachers significantly affects children's development, particularly their ability to manage emotions and form relationships with others (Thümmler *et. al*., 2022).

In early childhood education, emotional intelligence is increasingly recognised as a key element of a high-quality educational experience (Ulutaş et al., 2021). When schools emphasise social and emotional learning, educators, parents, and policymakers generally agree that education should help children successfully navigate their lives (Greenberg, 2023).

Social and emotional learning (SEL) help people understand and manage their emotions, set and achieve personal goals, show empathy, build and maintain positive relationships, and make responsible decisions (Konishi & Wong, 2018). In the classroom, students frequently meet people from different backgrounds, with varying viewpoints and skills. Social and emotional learning aims to help students understand their thoughts and feelings, become more self-aware, and develop empathy for their classmates (DeVoogd *et. al*., 2016).

Parent-teacher partnerships go beyond just sharing information; they involve creating a collaborative relationship focused on the child's overall growth. These methods promote a consistent approach to addressing a child's emotional and social needs, ensuring that the strategies used at home and in school are aligned. Schools are encouraged to build positive relationships with families to support students' academic, social, and emotional growth.

Research shows that when parents are involved in their children's education, it often leads to better academic performance, increased motivation, and improved emotional and behavioural outcomes (Odebowale *et. al*., 2022).

Furthermore, these collaborations offer a space for parents and educators to exchange knowledge and perspectives. This sharing deepens their grasp of a child's abilities, difficulties, and unique approach to learning. This aspect is especially important during early childhood, a time when basic social and emotional skills are being developed. Teachers gain a deeper understanding of a child's home life, cultural background, and family structure. At the same time, parents benefit from the teacher's knowledge of child development and how to manage the classroom.

These partnerships are also crucial for identifying and addressing potential socio-emotional issues early on, which helps prevent them from becoming more serious problems.

Moreover, excellent communication between parents and teachers helps children feel secure and like they belong. When children see a consistent approach between home and school, they feel more supported and understood. This, in turn, helps them develop a positive view of themselves and improves their emotional well-being. A child's social environment, including their family, community, and school, significantly affects their growth and development (Deeba, 2021).

The move from preschool to formal schooling is a crucial time in a child's development, significantly affecting their social and emotional growth, particularly their ability to make and keep friends (Quinn &

Hennessy, 2010). During this time, children's interactions extend beyond their families, including peers and teachers. This aspect highlights the importance of social connections in their overall development (Sawyer *et. al*., 2021). Strong connections with the school environment, including its staff, are a key factor in academic success and social-emotional growth (Solís *et. al*., 2021). People often mistakenly believe that early childhood education solely concentrates on enhancing intelligence and academic skills. This view can overshadow the essential role of social and emotional learning in a child's overall development (Pahl & Barrett, 2007).

Developing social-emotional skills is just as important for a child's development as other areas. This ability is crucial for their future well-being and academic success (Denham, 2006). Developing social and emotional skills is a key part of early childhood education (Jadwin, 2019).

These abilities are essential for a child's overall development, helping them build healthy relationships and succeed academically (Djamnezhad *et. al*., 2021). Teachers are crucial in developing social skills by creating environments that encourage cooperation, empathy, and effective communication. These skills are essential for children to build strong relationships (Connelly, 2018). The development of friendships during early childhood is a complex process, influenced by individual traits, the environment, and the quality of relationships with parents and teachers. Friendships are critical for children's overall development (Danby *et. al*., 2012).

Friendships in early childhood are more than just play; they are important for developing social skills, emotional health, and cognitive abilities. Positive relationships with their peers significantly enhance children's ability to develop important skills like empathy, cooperation, and conflict resolution (Lynch & Simpson, 2010). The development of these skills is greatly enhanced by the collaboration between parents and teachers, which provides a comprehensive approach to children's social and emotional growth.

Teachers play a key role in helping children form friendships in early childhood education, as shown by Kalicki and his team (2019). Teachers are crucial in creating inclusive classrooms. These environments help children feel safe, respected, and valued, which then encourages the development of friendships. Teachers are essential in creating an environment that helps children develop socially and emotionally, which in turn affects their ability to make and keep friends. Educators can explicitly teach social skills, such as communication, empathy, and conflict resolution, by using carefully planned activities and teaching methods (Darling-Hammond *et al*., 2019).

Theoretical Frameworks

Several theoretical frameworks help us understand socio-emotional development in early childhood, which supports the importance of parent-teacher partnerships.

Attachment theory (Teti, 2001; Ordway et al., 2015) suggests that secure attachments with carers are crucial for a child's sense of safety, security, and ability to manage emotions.

Attachment theory suggests that children who build secure attachments with their parents and teachers are more likely to develop healthy social and emotional skills. This reasoning is because they feel safe exploring their environment and forming relationships with others (Lang et al., 2013).

Bronfenbrenner's ecological systems theory highlights how different environmental systems, including family, school, and community, work together to influence a child's development.

Within this framework, partnerships between parents and teachers are a crucial link between home and school. These partnerships form a supportive network that aids in the holistic development of children (Ali *et. al*., 2020).

Vygotsky's sociocultural theory emphasises how social interaction and cultural context shape a child's cognitive and social development (Mkhize-Mthembu, 2022). These interactions help children internalise social norms, values, and ways to manage their emotions, which, in turn, support their social and emotional development.

The parent-child relationship significantly affects a child's physical and emotional well-being, as well as their social and cognitive development (Oladeni-Sakirudeen, 2018). This process also affects a child's self-esteem and academic performance (Ogren & Johnson, 2020).

Children whose parents are more involved in their education tend to be better adjusted socially and emotionally (Morris *et. al*., 2021; Rizvi, 2022).

Objectives of the Study

The objective of this study is to examine the impact of parent-teacher partnership on children's socio-emotional development among primary schools in Lagos State. The specific objectives of the study are to:

1. Examine the impact of parent-teacher partnership on children's social skills, emotional intelligence, and overall socio-emotional well-being.
2. Examine the role of parent-teacher partnership in supporting children's transition to formal education.

Hypotheses

H01**:** There is no significant relationship between parent-teacher partnership and children's socio-emotional development in early childhood education

H02: There is no significant relationship between parent-teacher partnership and children's ability to form and maintain friendships in early childhood education

Methodology

A descriptive survey research design was adopted for the study. The study population comprises teachers and parents of primary school pupils. The sample of this study consists of 216 participants. A multistage sampling procedure was employed for the study. A simple random sampling technique was used to select 4 local government education authorities in Lagos State: Alimosho, Amuwo-Odofin, Badagry, and Ojo LGEAs, respectively. A Stratified sampling technique was used to select 6 primary schools in each of the selected LGEAs in Lagos State, in order to ensure that the sample accurately reflects the demographic diversity of the population. Purposive sampling technique was used to select 4 teachers and 5 parents from each of the selected primary school pupils, ensuring a balanced representation of different socio-economic backgrounds in the selected LGEAs in Lagos State. A self-designed instrument was used for the study titled 'Parent-Teacher Partnership on Children's Socio-Emotional Development Questionnaire (PTP_CSEDQ). The instrument was validated by an expert in the Department of Early Childhood Care and Primary Education, Lagos State University of Education, Oto/Ijanikin, Lagos. The item in the instrument was adjudged to meet both construct and content validity. The reliability of the instrument was assessed using the Cronbach Alpha technique, yielding a coefficient value of 0.83. The Data collected were analysed with Inferential statistics of Pearson product-moment correlation (PPMC), which was tested at a 0.05 level of significance.

Results

Testing the hypotheses

H01: There is no significant relationship between parent-teacher partnership and children's socio-emotional development in early childhood education

Table 1: Summary of Pearson Correlation on Parent-Teacher Partnership and Children's Socio-Emotional Development in Early Childhood Education

Variable	N	Mean	St d.D	r	Sig.	Remark
Parents-teacher partnership	216	6.334	2.891			
				.463**	0.000	significant
Children socio-emotional development in ECE	216	13.522	7.516			

The table above depicts a positive significant relationship between parent-teacher partnership and children's socio-emotional development in early childhood education (r= 0.46; p<0.05). The null hypothesis of no significant relationship was therefore rejected. This positive relationship implies that Parent-teacher partnerships are not merely about exchanging information but about forging a collaborative alliance focused on the child's holistic development. They enable a consistent approach to addressing a child's emotional and social needs, ensuring that strategies used at home and in school are aligned.

$H_0$2: There is no significant relationship between parent-teacher partnership and children's ability to form and maintain friendships in early childhood education

Table 2: Summary of Pearson Correlation on Parent-Teacher Partnership and Children's ability to form and maintain friendships in early childhood education

Variable	N	Mean	Std.D	r	Sig.	Remark
Parents-teacher partnership	216	6.334	2.891			
				.512**	0.000	significant
Children ability to form friendships in ECE	216	10.472	5.378			

The table above depicts a positive significant relationship between parent-teacher partnership and children's ability to form and maintain friendships in early childhood education (r= 0.51; p<0.05). The null hypothesis of no significant relationship was therefore rejected. This positive relationship implies that the cultivation of friendships in early childhood is a multifaceted process, influenced by various factors including individual characteristics, environmental contexts, and the quality of relationships with parents and teachers.

Discussion of Findings

The findings from hypothesis one revealed that there is a significant relationship between parent-teacher partnership and children's socio-emotional development in early childhood education. The findings of this present study are in line with Teti, (2001); Ordway *et. al*., (2015), who emphasize the significance of secure attachments with caregivers in fostering a child's sense of safety, security, and emotional regulation According to attachment theory, children who form secure attachments with their parents and teachers are more likely to develop healthy social and emotional skills, as they feel confident in exploring their environment and forming relationships with others (Lang *et. al.*, 2013). Parental participation in a child's education is strongly linked to improved academic performance, increased motivation, and better emotional and behavioral outcomes. These partnerships also play a crucial role in identifying and addressing potential socio-emotional challenges early on, preventing them from escalating into more significant problems.

The findings from hypothesis two depict a positive and significant relationship between parent-teacher partnership and children's ability to form and maintain friendships in early childhood education. This is in line with Danby *et al.* (2012), which opined that children's ability to form friendships is vital for their overall development. Friendships in early childhood are not merely about playing together; they are crucial for social, emotional, and cognitive development. Positive relationships with peers enable children to develop vital skills such as empathy, cooperation, and conflict resolution (Lynch & Simpson, 2010). The development of these abilities is enhanced through parent-teacher partnerships, which provide a holistic approach to children's social and emotional education. Oranga *et al.* (2023) parental collaboration and engagement in the community involve participation in community services with children and identification and utilization of community resources to strengthen students' learning and development.

Conclusion

Parent-teacher partnerships are indispensable for fostering holistic development in primary school children, and schools should actively promote these partnerships through targeted teacher training programs, community engagement initiatives, and policy development, especially within the intricate socio-cultural milieu of Lagos State. The relationship between parents and teachers constitutes a critical dyad that significantly influences a child's educational trajectory and overall well-being. Effective partnerships cultivate a supportive and synergistic environment, wherein the home and school collaborate to nurture children's cognitive, social, and emotional growth. It has been observed that these partnerships enhance academic outcomes and contribute significantly to children's socio-emotional competencies, such as empathy, self-regulation, and social awareness. When parents and teachers work in harmony, they provide a consistent and reinforcing framework that promotes positive behaviour, motivation, and a sense of belonging in children. The exploration of these partnerships within the specific context of Lagos State is particularly relevant due to the region's unique blend of cultural diversity, socioeconomic disparities, and educational challenges. These factors create a complex landscape that necessitates a nuanced understanding of how parent-teacher relationships can be optimised to support children's development.

The exploration of peer relationships during elementary and middle school underscores the significance of acceptance, friendships, and peer network participation in children's development. Positive peer interactions in the early grades correlate with enhanced social skills, academic performance, and relationship quality later in life. The role of peers in shaping children's social abilities is a supportive element that significantly influences the development of social competence. Learners who are well-received by their peers and manage to form and sustain friendships tend to benefit from involvement in classroom activities that offer rich learning experiences and exposure to educational resources.

Recommendations

The following recommendations were made based on the study;

1. There should be structured training programs for teachers focusing on effective communication strategies and cultural sensitivity, enabling them to engage diverse parent populations.
2. There should also be community-based initiatives that promote parental involvement in education, particularly in underserved areas, by providing resources, workshops, and support networks.
3. The development of user-friendly communication platforms, such as mobile apps or online portals, would improve the ease and frequency of communication between parents and teachers.
4. Parents should be actively engaging in their children's education. Parents contribute to improved learning outcomes, enhanced cognitive development, and the cultivation of essential life skills.

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MICROSOFT WORD AS A TOOL FOR IMPROVING WRITING SKILLS OF PUPILS IN IKWERRE LOCAL GOVERNMENT AREA OF RIVERS STATE

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Abstract

This study investigated the effectiveness of Microsoft Word as an instructional tool for improving the writing skills of primary school pupils in Ikwerre Local Government Area of Rivers State, Nigeria. The study was motivated by persistent challenges in pupils' writing performance, particularly in grammar, spelling, organisation, coherence, and vocabulary development, which are inadequately addressed by conventional teaching methods. A quasi-experimental research design employing a pre-test–post-test non-equivalent control group was adopted. The population comprised Primary Five pupils in public primary schools within Ikwerre Local Government Area, from which a sample of 589 pupils was selected using multistage sampling techniques. The experimental group received writing instruction using Microsoft Word, while the control group was taught using traditional chalk-and-board methods. Data were collected using a researcher-developed Writing Skills Achievement Test (WSAT) and an Instructional Package on Microsoft Word (IPMW). The reliability coefficient of the WSAT was established at 0.78 using the test–retest method. Data were analysed using an independent samples t-test and Analysis of Covariance (ANCOVA) at the 0.05 level of significance. Findings revealed a significant difference in the overall writing skills of pupils taught with Microsoft Word compared to those taught using conventional methods. Specifically, Microsoft Word significantly improved pupils' spelling accuracy, grammatical accuracy, and the organisation and coherence of written compositions. The study concludes that Microsoft Word is an effective digital tool for enhancing pupils' writing skills and recommends its integration into the primary school English language curriculum, alongside adequate teacher training and provision of ICT facilities.

Keywords: Microsoft Word, Writing Skills, Spelling Accuracy, Grammatical Accuracy.

Introduction

The use of information and communication technology (ICT) in education involves using technological tools. These tools include computers, laptops, the internet, and different telecommunications methods. They are used to create content and share information, which helps with teaching and learning in the classroom (Bhattara, 2021). Given the swift advancement of information technology, both educators and students are required to continuously refine their proficiency in using technology effectively. Therefore, incorporating information technology into education is crucial for instructors and students to develop problem-solving skills, work together, and share information in new ways.

In accordance with Van Laar *et. al*. (2020), the contemporary generation is expected to employ digital skills pertinent to the 21st century, encompassing technical proficiency, information literacy, communication skills, collaborative abilities, creativity, critical thinking, and problem-solving aptitude. Therefore, the integration of Information and Communication Technologies will greatly influence the skill sets of students in the future.

Indonesian students exposed to hybrid or blended learning environments perceive the advantages of Information and Communication Technology (ICT) within the educational context. Educators and English Language Teaching (ELT) students utilise platforms such as Google Classroom and Schoology to disseminate and share information with their students (Gumartifa*et. al*., 2020). Language competency is a key ability for students, as it helps them communicate and work with people from different backgrounds. Information and Communication Technology (ICT) offers many advantages for teaching English.

Therefore, educators may use information and communication technology (ICT) to improve learning, which

will help students learn better and become more skilled at using technology. Yaser (2021) noted that technology significantly influences the development of writing skills in primary school students. Writing, a fundamental skill, underpins communication, critical thinking, and academic achievement. Despite its importance, many primary school pupils encounter difficulties with writing, stemming from limited vocabulary, lack of engagement, and inadequate practice. Laar *et. al*. (2020) suggest that computer software, especially word-processing tools such as Microsoft Word, has created new opportunities to improve writing instruction and learning.

Microsoft Word, a readily available and user-friendly application, offers features such as spell check, grammar suggestions, word count, and formatting options that can streamline the writing process and encourage young learners (Wea & Kuki, 2021).

These characteristics provide prompt feedback, helping students recognise and correct mistakes, broaden their vocabulary, and refine their sentence structure. Furthermore, the capacity to easily revise and edit text fosters iterative writing, a process essential for skill acquisition (Wea & Kuki, 2021). In the Ikwerre Local Government Area, mirroring trends across Nigeria, there is an increasing demand for improvements in the quality of primary education. Although conventional pedagogical approaches to writing instruction persist, their inherent constraints have spurred educators to investigate novel strategies. The integration of Microsoft Word in classroom settings could address deficiencies in writing instruction, making the learning experience more engaging and effective.

Notwithstanding its potential, the influence of Microsoft Word on the writing proficiency of primary school students within this specific context remains underexplored. This study aims to investigate the role of this technology in augmenting pupils' capacity to compose with coherence and precision, thereby furnishing evidence-based recommendations for the incorporation of digital resources into primary education.

In the contemporary digital era, technology has emerged as an indispensable tool in education, offering novel avenues to enhance pedagogical practices and learning outcomes. Conversely, in numerous primary schools, particularly those in rural areas such as the Ikwerre Local Government Area, students frequently struggle to develop fundamental writing skills. Conventional instructional approaches may prove insufficient to address these obstacles, resulting in pupils' limited ability to organise their thoughts, structure their compositions, and articulate their ideas with clarity.

Indeed, the Editorial Team (2024) posits that writing skills encompass the capacities employed to effectively convey concepts through written communication across diverse formats. Furthermore, technical proficiency in writing conventions, style manuals, and formatting tailored to specific contexts constitutes a crucial component of writing abilities. The capacity to discern the appropriate writing style for various situations and to establish an appropriate tone within the text are both valuable writing skills applicable in professional settings (Indeed Editorial Team, 2024). Writing skills, as defined by Jamal (2023), require both a foundational understanding and the ability to articulate thoughts and ideas in writing.

Indeed Editorial Team (2024) identified five major elements of writing, which they listed and discussed below:

1. The purpose of writing is the main idea(s) one wants the reader to take away. In most
2. In professional writing, one directly states the purpose in the first sentence or two.
3. The audience typically includes the readers you want to read the piece, and in some cases, you may consider a general audience who may come across your piece as part of your secondary audience.
4. Clarity is how easily and accurately readers can understand your purpose and the supporting features of your piece.
5. Unity addresses whether every segment of the piece at the word-level, sentence-level, paragraph-level, and section-level all relate to one another and emphasise or support the purpose. v. A coherent piece is one that is well-organised on every level, where the ideas expressed in the piece relate, and each segment leads the reader to the next segment.

However, for the purpose of this study, the writing skills are based on the following: grammar, spelling, punctuation, vocabulary development, and so on. According to Jamal (2023), it refers to a sound understanding of language, including grammar, punctuation, and spelling.

Microsoft Word, a widely used software program, offers features such as spell check, grammar suggestions, and formatting tools that can support the writing process. Despite its availability, there is limited research on its effectiveness in improving the writing skills of primary school pupils in this region.

Many teachers and schools may not fully utilise this technology due to a lack of awareness, training, or resources, further hindering pupils' writing development. Microsoft Word is a word processor software developed by Microsoft in 1983. It is the most commonly used word processor software (Rayini, 2020). It is used to create professional-quality documents, letters, reports, resumes and also allows you to edit or modify your new or existing document. The file saved in MS Word has a docx extension. The latest version of MS Word is 2019 (Rayini, 2020). Microsoft Word, or MS Word, is a widely used word processing software, particularly for creating documents such as Resumes, reports, Letters, Assignments, brochures, Question papers, and publishing PDFs. Microsoft Word is one of the most widely used word processing tools in education.

Its versatility, ease of use, and comprehensive features make it invaluable for both educators and students. From aiding in the creation of professional documents to enhancing collaboration, Word plays a crucial role in educational processes. Salehi *et. al*. (2019) posit that Microsoft Word enhances the grammar and spelling skills of Iranian teachers and learners. This can be implied to students in Indonesia: if researchers use English in Microsoft Word, students and teachers can try many features to check their spelling and grammar. Jamal (2023) makes several points: word processors help us create articles, letters, pamphlets, books, and print reports. Users can also store documents in files for reuse or modification as needed.

According to Salehi and Amiri (2019), the positive impact that can be felt in writing English during the hybrid learning period with Microsoft Word is that it does not cause many mistakes, both in spelling and grammar. Salehi and Amiri (2019) asserted that spelling and grammatical errors were the main problems for every student in writing English. They tend to find it difficult to restructure different sentence types and to spell correctly. This Word Processor becomes the main problem solver because after students use this application, their error rate in both grammar and spelling drops. They will also find it easier to correct typos because this Word Processor can detect them automatically. Students can also expand their English vocabulary by using Microsoft Word, which can automatically provide synonyms and related references for words (Salehi & Amiri, 2019). It is helpful for the learners to learn new vocabulary by doing their tasks.

In addition to having a positive impact on students during this hybrid learning period, there is no doubt that the help from the Word Processor's support is also highly effective in teaching writing skills. Harmer's words, as cited in Salehi and Amiri (2019), strongly recommend that teachers motivate their students to begin writing emails in English to others. Because, according to him, this motivation is very effective and more fun than just writing letters conventionally. In the ESL classroom, the use of this Word Processor can improve students' writing skills.

This theory is also supported by other researchers, namely, Khudair (2016), who conducted a study on the use of computers in teaching writing skills. According to these researchers, students will find it easier to correct writing errors by using grammar and spelling checkers. Spelling checkers are very useful for students who are less able to write. In addition to using this computer application, several other applications, such as speech feedback, speech recognition, and word prediction, can help students who lack writing skills develop further (Riyadi & Wulandari, 2020).

Behind all the advantages of using this Word Processor (Salehi & Amiri, 2019), of course, there are some disadvantages that researchers can face. One of them is following the wrong spelling of the suggestions. Sometimes the spelling suggestions from this word processor are not appropriate and even make our writing confusing. But many students do not know this and follow the wrong advice (Salehi & Amiri, 2019). Although using this word processor software produces good written work, students' abilities will not be fully developed, and they will be limited to improving their writing results. The development of this era of technology, especially computers, has had a tremendous impact on students' handwriting (Noël, 2016). Because they tend to prefer writing on a computer rather than with paper and pen, students' handwritten results are no longer optimal. Even though writing by hand is very important for students in expressing their ideas.

Besides, this writing software cannot adjust for the substandard scoring system in students' writing results. Therefore, students' self-evaluation becomes less unbalanced. Students focus more on evaluating which

application to use to write and do not remember that software also has limitations in helping them write (Noël, 2016).

Statement of the Problem

Despite the growing integration of Information and Communication Technologies (ICTs) in education, many primary school pupils, particularly in rural areas such as the Ikwerre Local Government Area, continue to struggle to develop foundational writing skills. Traditional teaching methods often fail to engage students or provide sufficient support for writing improvement. While tools like Microsoft Word offer features that enhance writing instruction, such as grammar correction and real-time feedback, their potential remains underutilised due to limited research, teacher training, and access. Therefore, this study seeks to address the gap by examining whether the use of Microsoft Word can effectively enhance the writing skills of primary school pupils in the Ikwerre Local Government Area of Rivers State.

Objectives of the Study

The main objectives of the study are to:

i. Investigate the relationship between Microsoft as a tool used for improving the writing skills of pupils in Ikwere Local Government Area.
ii. Investigate the relationship between Microsoft Word as a tool used for improving the grammar of primary school pupils in Ikwerre Local Government Area.
iii. Examine the relationship between Microsoft Word as a tool for improving the spelling of primary school pupils in Ikwerre Local Government Area.
iv. Examine the relationship between Microsoft Word as a tool for improving the vocabulary development of primary school pupils in Ikwerre Local Government Area.

Hypotheses

H01: There is no significant difference in the writing skills of pupils taught using Microsoft Word and those taught using conventional writing methods in Ikwerre Local Government Area of Rivers State.

H02: The use of Microsoft Word has no significant effect on pupils' spelling accuracy in Ikwerre Local Government Area of Rivers State.

H03: The use of Microsoft Word does not significantly influence pupils' grammatical accuracy in writing in the Ikwerre Local Government Area of Rivers State.

H04: There is no significant difference in the organisation and coherence of written compositions of pupils exposed to Microsoft Word and those not exposed to it in Ikwerre Local Government Area of Rivers State.

Methodology

The study employed a quasi-experimental research design, specifically the pre-test–post-test non-equivalent control group design. This particular design was deemed suitable because it used intact classes, which precluded random assignment of individual students to the experimental or control groups. The experimental cohort received instruction in writing skills using Microsoft Word, whereas the control group was instructed using the traditional writing pedagogy. The study's design enabled the researcher to assess how Microsoft Word affected students' writing skills by comparing pre- and post-test results across both groups. The study included all primary school students in public primary schools within the Ikwerre Local Government Area of Rivers State. The specific group studied was upper primary students (Primary Five), as they had the basic reading and writing skills needed for writing assignments and using computers. The study's sample comprised 589 Primary Five pupils, selected from 89 public primary schools within the Ikwerre Local Government Area of Rivers State. A multistage sampling method was implemented; specifically, simple random sampling was utilised to choose schools from the roster of public primary schools in the Ikwerre Local Government Area. Subsequently, purposive sampling was used to identify Primary Five classes in the selected schools. These intact classes were then divided into experimental and control groups. This methodology facilitated sufficient representation while mitigating any potential disturbances to the school environment. Data collection was facilitated by two primary

instruments: the Writing Skills Achievement Test (WSAT), developed by the researcher, which assessed students' writing abilities, focusing on spelling, grammar, organisation, and coherence. The test included structured writing tasks and short composition exercises. The Instructional Package on Microsoft Word (IPMW), a teaching guide created by the researcher, was used to teach the experimental group. This package covered basic Microsoft Word features, including typing, spell-checking, grammar-checking, editing, formatting, and document saving. In contrast, the control group received instruction using the traditional chalk-and-board writing method. The Writing Skills Achievement Test (WSAT) was assessed for reliability through the test–retest approach. Pearson Product-Moment Correlation (PPMC) was employed to correlate the acquired scores. A reliability coefficient of 0.78 was obtained, thereby confirming the instrument's reliability in this investigation. The collected data were analysed using inferential statistics. The null hypotheses were evaluated at the 0.05 level of significance using the independent-samples t-test, and Analysis of Covariance (ANCOVA) was used to account for pre-existing group differences, with pre-test scores as covariates.

Results

Hypothesis One

H_{01}: There is no significant difference in the writing skills of pupils taught using Microsoft Word and those taught using conventional writing methods in Ikwerre Local Government Area of Rivers State.

Table 1: ANCOVA Summary of Pupils' Writing Skills by Instructional Method

Source	Sum of Squares	df	Mean Square	F	Sig.
Pre-test (Covariate)	2,314.52	1	2,314.52	45.67	.000
Group	1,986.34	1	1,986.34	39.28	.000
Error	29,654.18	586	50.60		
Total	34,112.41	588			

There is a significant difference in the writing skills of pupils taught using Microsoft Word and those taught using the conventional method. Pupils exposed to Microsoft Word demonstrated superior writing skills compared to their counterparts.

Hypothesis Two

H_{02}: The use of Microsoft Word has no significant effect on pupils' spelling accuracy in Ikwerre Local Government Area of Rivers State.

Table 2: Independent Samples t-Test of Pupils' Spelling Accuracy

Group	N	Mean	SD	t	df	Sig.
Experimental	295	18.42	3.15			
				11.83	587	.000
Control	294	14.96	3.47			

The use of Microsoft Word significantly improved pupils' spelling accuracy. Features such as spell-check and word editing tools contributed positively to spelling performance.

Hypothesis Three

H_{03}: The use of Microsoft Word does not significantly influence pupils' grammatical accuracy in writing in Ikwerre Local Government Area of Rivers State.

Table 3: ANCOVA Summary of Pupils' Grammatical Accuracy

Source	Sum of Squares	df	Mean Square	F	Sig.
Pre-test (Covaria te)	1,742.21	1	1,742.21	32.84	.000
Group	1,563.47	1	1,563.47	29.48	.000
Error	31,172.64	586	53.19		
Total	35,108.32	588			

Microsoft Word significantly influenced pupils' grammatical accuracy in writing. Pupils exposed to grammar-check and editing features performed better than those taught using conventional methods

Hypothesis Four

H_{04}: There is no significant difference in the organization and coherence of written compositions of pupils exposed to Microsoft Word and those not exposed to it.

Table 4: Independent Samples t-Test of Organization and Coherence Scores

Group	N	Mean	SD	t	df	Sig.
Experimental	295	16.87	2.94			
				12.14	587	.000
Control	294	13.58	3.12			

There is a significant difference in the organization and coherence of written compositions of pupils exposed to Microsoft Word and those not exposed. Pupils taught with Microsoft Word demonstrated better structured and coherent writing.

Discussion of Findings

The study's results demonstrated a statistically significant difference in overall writing proficiency between students instructed with Microsoft Word and those receiving instruction through traditional methods. The experimental group outperformed the control group, thereby necessitating rejection of the initial null hypothesis. This outcome implies that incorporating Microsoft Word into writing instruction positively influences students' writing capabilities, a finding consistent with Salehi and Amiri (2019).

This observed effect can be ascribed to the interactive and supportive features inherent in Microsoft Word, including its user-friendly editing and formatting tools and its capacity to provide immediate feedback, all of which foster active participation and mitigate writing-related anxiety, as suggested by Salehi and Amiri (2019).

The observed outcome corroborates the constructivist learning paradigm, which posits that knowledge is constructed through learner engagement with tools and resources. This finding aligns with prior research indicating that writing performance improves when digital word-processing tools are incorporated into classroom practices. Scholars have observed that word processors facilitate revision, the structuring of ideas,

and the refinement of expression, consequently elevating writing quality. Furthermore, the study's results, mirroring those of Yaser (2021), demonstrated a substantial impact of Microsoft Word on students' spelling accuracy, as evidenced by the elevated mean scores of the experimental group. Consequently, the second null hypothesis was rejected.

This result indicates that Microsoft Word's spell-checker is essential for improving students' spelling proficiency. The automated detection and correction of spelling mistakes provides instantaneous feedback, allowing students to identify and learn from their errors. This observation is consistent with prior research by Prvinchandar and Ayub (2014), which demonstrated that students using word-processing software exhibit superior spelling performance compared with those using conventional writing techniques. Furthermore, this finding corroborates the behaviourist learning theory, which holds that immediate feedback strengthens correct responses and promotes learning. The analysis's outcomes revealed that the use of Microsoft Word significantly affected students' grammatical accuracy in writing, leading to the rejection of the third null hypothesis.

Students instructed with Microsoft Word exhibited superior performance in grammar exercises compared to their counterparts educated through traditional pedagogical approaches (Yaser 2021). This enhancement can be attributed to the grammar-check and sentence structure recommendations integrated into Microsoft Word, which help students recognise grammatical inaccuracies and refine sentence structure. Salehi and Amiri's (2019) research aligns with prior investigations that highlight the role of digital resources in facilitating language acquisition through guided correction and iterative revision. Furthermore, it echoes Vygotsky's scaffolding theory, wherein technological instruments function as mediators, aiding learners within their zone of proximal development.

Prvinchandar and Ayub's (2014) results also indicated a notable disparity in the organisation and coherence of written compositions between students who used Microsoft Word and those who did not. Consequently, the fourth null hypothesis was rejected. The experimental group of pupils demonstrated better logical sequencing of ideas and clearer paragraph organisation. This result may be explained by the formatting tools in Microsoft Word, such as paragraph alignment, indentation, and text structuring features, which help pupils organise their thoughts more effectively. Additionally, the ability to easily revise and rearrange text encourages pupils to improve the flow and coherence of their writing. This finding is consistent with existing research that shows enhanced organisation and coherence in pupils' writing when digital writing tools are used.

Conclusion

The investigation assessed the application of Microsoft Word in fostering vocabulary expansion within primary school students situated in Ikwerre Local Government Area. The results demonstrate that Microsoft Word offers an interactive and stimulating environment conducive to vocabulary learning, facilitated by functionalities including spell check, thesaurus capabilities for synonyms and antonyms, autocorrect features, and word suggestion tools. Furthermore, incorporating Microsoft Word into classroom practices augments students' encounters with novel vocabulary, encourages autonomous learning, and strengthens spelling precision. Teachers who employ the software effectively can cultivate engaging learning environments that facilitate vocabulary acquisition and retention. Consequently, the research findings suggest that Microsoft Word is a beneficial instrument for enhancing vocabulary development in primary school students within Ikwerre LGA, contingent upon the availability of appropriate infrastructural and pedagogical support. It is advised that educational institutions allocate resources towards digital literacy training for both educators and students, augment access to ICT resources, and incorporate Microsoft Word into the English language curriculum to achieve improved learning results.

Recommendations

Based on the findings of the study, the following were recommended:

1. The Ministry of Education and school authorities should integrate the use of Microsoft Word into the English language curriculum to enhance vocabulary learning through interactive features such as spell check, synonyms, and word suggestions.
2. Teachers should be trained on how to effectively use Microsoft Word in vocabulary instruction.

Workshops and professional development programs should be organised to improve their digital literacy skills.
3. Schools should be equipped with adequate computers, internet access, and necessary software to facilitate the effective use of Microsoft Word for vocabulary development.
4. Teachers should incorporate engaging activities such as word processing exercises, vocabulary games, and sentence construction tasks using Microsoft Word to encourage active learning.
5.School administrators should ensure that they provide adequate electricity in order to meet optimisation.

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INVESTIGATING THE PERCEPTION OF TEACHERS ON THE USE OF EKO EXCEL FOR PUPILS IN EARLY CHILDHOOD EDUCATION CENTRES

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Abstract

This study examined early childhood teachers' perceptions of the EKOEXCEL digital learning programme in Lagos State public primary schools, and how these perceptions relate to teaching experience, pupils' academic performance, and implementation challenges. Using a quantitative descriptive survey design, 240 teachers and 216 pupils were sampled from eight schools across Alimosho and Ojo Local Government Areas. Data were collected with the Teachers' Perception of EKOEXCEL in Early Childhood Education Questionnaire (TPECEEL; α=0.93). Results showed a statistically significant difference in perceptions by teaching experience ($p<0.05$), with more experienced teachers expressing greater reservations. A moderate positive correlation ($r=0.42$, $p<0.01$) was found between favourable teacher perceptions and pupils' academic performance. However, 78% of teachers reported that implementation challenges, particularly inadequate training (84%), unreliable electricity (76%), and large class sizes (91%), significantly impeded instructional delivery. The study concludes that while EKOEXCEL demonstrates potential for enhancing early childhood education, its effectiveness hinges on targeted investments in teacher capacity building, infrastructure reliability, and context-sensitive support systems. Recommendations include mandatory refresher workshops, decentralised technical assistance, and prioritised infrastructural upgrades in underserved schools to ensure equitable programme outcomes.

Keywords: Academic performance; early childhood education; EKOEXCEL; pupils, and teacher's perception

Introduction

Teaching in the twenty-first century has evolved beyond traditional didactic methods toward pedagogical approaches informed by data analytics, digital learning tools, and developmentally appropriate instructional innovations. In response to this global shift, the Lagos State Government introduced the EKOEXCEL programme, a large-scale digital transformation initiative aimed at revitalising teaching and learning in public primary schools. While policy documents emphasise the programme's potential to improve educational quality, successful implementation ultimately depends on the professionals tasked with its execution: classroom teachers.

Teacher perception, defined as educators' attitudes, beliefs, and experiential interpretations of an educational innovation (Komba & Nkumbi, 2020), serves as a critical mediator between policy design and classroom practice. Empirical evidence indicates that teachers' perceptions significantly influence their pedagogical choices, engagement with instructional tools, and, consequently, pupil learning outcomes (Adedeji *et al*. 2021). Despite this established relationship, teachers' perspectives on EKOEXCEL remain underexamined,

particularly within early childhood education centres (ECECs), where developmentally sensitive implementation is paramount.

Eko Excel, short for *Excellence in Child Education and Learning*, is a Lagos State government-led initiative launched in 2019 under the State Universal Basic Education Board (LASUBEB) with technical assistance from NewGlobe, an education technology company. It leverages technology-enabled teaching, teacher tablets, real-time data, and structured pedagogy to improve learning outcomes in public primary schools (LASUBEB, 2022). Eko Excel is part of Nigeria's broader UBE (Universal Basic Education) goals and aligns with SDG 4 on inclusive and quality education. Early childhood education refers to organised educational programs for children typically aged 0 to 5. It lays the foundation for cognitive, emotional, and social skills for lifelong learning. In Nigeria (Abidogun et. al. 2020), ECE is embedded within the broader UBE framework and guided by the National Policy on Education (FRN, 2020). In Lagos State, public ECE centres have been integrated into primary schools under the Eko Excel scheme.

Understanding teachers' perceptions of educational innovations is fundamental to assessing implementation effectiveness. Regardless of technological sophistication or policy design, classroom-level adoption of any intervention remains contingent upon educators' cognitive and affective responses to the innovation (Ifinedo, 2020). Positive perceptions typically facilitate active engagement and adaptive utilisation of instructional tools, whereas ambivalent or negative attitudes may result in superficial compliance or diminished programme fidelity.

This study investigates early childhood teachers' perceptions of the EKOEXCEL programme in Lagos State public primary schools. EKOEXCEL, Excellence in Child Education and Learning, is a statewide education reform initiative implemented by the Lagos State Universal Basic Education Board (LASUBEB) to elevate teaching quality and learning outcomes across public primary schools (LASUBEB, n.d.). The programme employs tablet-based instructional materials, scripted lesson plans aligned with the Nigerian curriculum, and real-time monitoring systems to standardise delivery and track pupil progress. It currently serves approximately 500,000 pupils across 1,016 public primary schools in Lagos State (LASUBEB, n.d.).

The initiative responds to Nigeria's acute foundational literacy and numeracy crisis. Evidence indicates that approximately 70% of Nigerian children lack basic reading and mathematical competencies appropriate for their age (UNICEF, 2022, as cited in PLAN Nigeria, 2024). This learning crisis is particularly pronounced in public basic education settings, where inconsistent pedagogical practices and limited instructional support contribute to poor learning trajectories (World Bank, 2023). Structured pedagogy approaches, characterised by standardised lesson plans, targeted learning materials, and systematic teacher support, have demonstrated potential for improving foundational skills in Nigerian contexts, as evidenced by related initiatives such as EdoBEST (De Simone, 2025).

Nevertheless, technological interventions in Nigerian classrooms face persistent implementation constraints. Empirical studies document infrastructural barriers, including unreliable electricity, limited internet connectivity, and insufficient technical support that impede effective technology integration in public schools (Ifinedo, 2020). Furthermore, teacher resistance to scripted pedagogical approaches has been observed where educators perceive such models as constraining professional autonomy and limiting contextual adaptation to diverse classroom needs (Buckler *et. al*., 2025).

These challenges are especially salient in early childhood education centres (ECECs), which constitute developmentally sensitive environments requiring pedagogical flexibility, emotional responsiveness, and adaptation to multilingual and multi-ability learners. Policy misalignment at this foundational stage may have enduring implications for children's cognitive and socio-emotional development (World Bank, 2021).

A significant research gap persists regarding early childhood educators' lived experiences with EKOEXCEL. While system-level performance reports exist, limited empirical attention has been directed toward teachers' perceptions within ECECs. This omission is consequential: early years teachers mediate programme implementation within complex classroom ecologies characterised by infrastructural constraints and diverse learner needs. Without understanding how educators interpret and navigate these realities, policy refinements risk remaining disconnected from classroom exigencies.

This study, therefore, seeks to foreground early childhood teachers' perspectives on EKOEXCEL implementation in Lagos State. By examining how perceptions relate to teaching experience, classroom

conditions, and observed learning outcomes, the research aims to generate evidence for context-responsive policy adjustment. Sustainable educational transformation depends not only on technological inputs but on the professionals who mediate these tools within complex classroom ecologies. Centring teacher voice is thus both an empirical necessity and a prerequisite for equitable programme outcomes.

Statement of the Problem

Nigeria faces a severe foundational learning crisis, with approximately 70% of children lacking basic literacy and numeracy competencies appropriate for their age (UNICEF, 2022, as cited in PLAN Nigeria, 2024). This deficit is particularly pronounced in public basic education settings, where inconsistent pedagogical practices, limited instructional support, and infrastructural constraints contribute to poor learning trajectories (World Bank, 2023). In response, the Lagos State Government introduced the EKOEXCEL programme, a technology-enabled structured pedagogy initiative designed to standardise instructional delivery, provide scripted lesson plans aligned with the Nigerian curriculum, and monitor pupil progress through digital dashboards (LASUBEB, n.d.).

While structured pedagogy approaches have demonstrated potential for improving foundational skills in Nigerian contexts, as evidenced by related initiatives such as EdoBEST (De Simone, 2025), successful implementation remains contingent upon teacher acceptance and adaptive utilisation. Empirical research indicates that Nigerian educators encounter significant barriers to technology integration, including unreliable electricity, limited technical support, and insufficient training (Ifinedo, 2020). Furthermore, the introduction of scripted instructional materials has generated ambivalent responses among teachers, with some reporting reduced workloads while others express concerns about diminished professional autonomy and limited capacity to adapt content to diverse classroom contexts (Buckler *et al*. 2025).

These tensions are especially consequential within early childhood education centres (ECECs), which constitute developmentally sensitive environments requiring pedagogical flexibility, emotional responsiveness, and adaptation to multilingual and multi-ability learners (World Bank, 2021). Early years pedagogy emphasises play-based learning, spontaneity, and teacher responsiveness to children's emerging interests, principles that may conflict with rigidly scripted instructional models. Policy misalignment at this foundational stage risks undermining children's cognitive and socio-emotional development, with potentially enduring consequences for subsequent learning trajectories.

Despite EKOEXCEL's scaleserving approximately 500,000 pupils across 1,016 public primary schools in Lagos State (LASUBEB, n.d.), a significant research gap persists regarding early childhood educators' perceptions of the programme. Existing evaluations predominantly focus on system-level performance metrics or general primary education outcomes, with limited attention to the nuanced realities of ECEC implementation (Buckler *et. al*., 2025). This omission is problematic: teachers function as critical mediators between policy design and classroom practice, and their perceptions directly influence engagement with instructional tools, pedagogical choices, and ultimately pupil learning experiences (Ifinedo, 2020).

Without an empirical understanding of how early childhood teachers interpret, appropriate, and enact EKOEXCEL within their specific classroom ecologies, policy refinements risk remaining disconnected from implementation realities. This disconnect may precipitate superficial compliance, diminished programme fidelity, and ultimately compromised learning outcomes for Nigeria's youngest learners. Consequently, this study investigates early childhood teachers' perceptions of EKOEXCEL implementation in Lagos State public primary schools. The research seeks to generate evidence for context-responsive policy adjustment that safeguards both programme integrity and pedagogical responsiveness within early childhood settings.

Purpose of Study

The main purpose of the study is to examine the perception of teachers on the use of Eko Excel for pupils in early childhood education centres in Lagos state.

Specifically, the study seeks to:

1. Examine the perception of early childhood education teachers towards the implementation of the Eko Excel initiative in public primary schools in Lagos State.

2. Assess the relationship between teachers' perception of the Eko Excel programme and pupils' academic performance in early childhood education centres and
3. Identify the challenges faced by early childhood teachers in implementing Eko Excel and how these challenges affect their instructional delivery.

Null Hypotheses

H01: There is no significant difference in the perception of early childhood education teachers towards the implementation of the Eko Excel initiative based on their years of teaching experience.

H02: There is no significant relationship between teachers' perception of the Eko Excel programme and pupils' academic performance in early childhood education centres.

H03: There is no significant effect of challenges faced by teachers in implementing Eko Excel on their instructional delivery in early childhood classrooms.

Methodology

This study adopted a quantitative research design using the descriptive survey method to investigate the perception of teachers on the use of EKOEXCEL for pupils in early childhood education centres in Lagos State. The study was guided strictly by three hypotheses tested at the 0.05 level of significance. No qualitative methods were considered in this research.

The population for this study comprised early childhood education teachers and kindergarten (KG) pupils in public primary schools implementing EKOEXCEL in Lagos State. A total of 240 participants were selected using a multi-stage sampling technique. Specifically, 8 public primary schools with preschool sections were purposively selected 4 from Alimosho Local Government Area and 4 from Ojo Local Government Area. From each school, 30 participants were selected, including 3 teachers and 27 KG pupils, using simple random sampling.

The research instrument used was a self-designed structured questionnaire titled: "Teachers' Perception of EKOEXCEL in Early Childhood Education and Learning" (TPECEEL). The instrument consisted of sections addressing teachers' perceptions, implementation challenges, and observed academic performance among pupils.

A pilot study was conducted using 15 teachers from non-sampled public primary schools in Ikeja LGA to establish the instrument's validity. The internal consistency of the instrument was determined using the Cronbach Alpha method, which yielded a reliability coefficient of 0.93, indicating a high level of reliability. Data were collected through direct administration of the questionnaire to the respondents in the selected schools. The researcher, with the help of trained assistants, ensured all ethical standards were followed, including informed consent and confidentiality. Descriptive statistics such as mean and standard deviation were used to summarise the responses. Inferential statistics such as t-test, Pearson Product-Moment Correlation and Simple Linear Regression Analysis was used to test the states hypotheses.

Results and Findings

Demographic Distribution of Respondents

A total of 240 participants (24 teachers and 216 pupils) were involved in the study from eight purposively selected public primary schools in Lagos State. The table below presents the demographic characteristics of the teachers considered in the study.

Table 1: Demographic Distribution of Respondents (Teachers)

Demographic Variable	Frequency (n = 24)	Percentage (%
Gender		
Male	6	25%
Female	18	75%
Years of Teaching Experience		
1–5 years	5	20.8%
6–10 years	9	37.5%
Above 10 years	10	41.7%
Qualification		
NCE	7	29.2%
B.Ed	12	50%
PGDE or Higher	5	20.8%

Source: Field Report 2025

The study involved 24 teachers, mostly female (75%) and predominantly experienced, with 41.7% having over 10 years of teaching. Most teachers (50%) held a Bachelor of Education (B.Ed.) degree, while 29.2% had an NCE and 20.8% held a PGDE or higher. Nearly 38% had between 6–10 years of teaching experience, indicating a workforce with a moderate to high level of qualification and professional experience.

Hypothesis 1

$H_0$1: There is no significant difference in the perception of early childhood education teachers towards the implementation of the EKOEXCEL initiative based on their years of teaching experience.

Table 2: Independent t-test on Teachers' Perception Based on Teaching Experience

Item No	Teaching Experience (Mean Score)	Std. Dev	t-value	p-value
1	EKOEXCEL simplifies lesson delivery (1 –5 vs. 10+ yrs)	3.8 vs. 4.2	0.51	2.12
2	Use of tablets enhances engagement	3.6 vs. 4.1	0.55	2.33
3	EKOEXCEL affects teaching creativity	3.1 vs. 3.9	0.68	2.64
4	Adapting to scripted lessons is easy	3.4 vs. 4.0	0.49	2.09
5	Classroom control improved post -EKOEXCEL	3.5 vs. 4.3	0.50	2.81

Source: Field Report 2025

Decision Rule:
The hypothesis test reveals a significant difference in teachers' perceptions of EKOEXCEL based on teaching experience. Teachers with over 10 years of experience consistently rated the initiative higher across all items. With p-values below 0.05 for each item, the null hypothesis was rejected. This suggests that more experienced teachers view EKOEXCEL more positively, indicating that teaching experience may enhance openness to and effective use of educational technology tools.

Hypothesis 2
$H_0$2: There is no significant relationship between teachers' perception of the EKOEXCEL programme and pupils' academic performance in early childhood education centres.

Table 3: Pearson Correlation between Teacher Perception and Pupil Performance

Item No	Teacher Perception Variable		r-value	p-value
1	Use of digital tools	Improved attention span	0.621	0.001
2	Lesson plan structure	Literacy skill improvement	0.587	0.004
3	Timeliness of instruction	Numeracy proficiency	0.602	0.002
4	Frequency of pupil engagement	Participation in class tasks	0.534	0.007
5	Use of assessments in EKOEXCEL	Improved formative scores	0.655	0.000

Source: Field Report 2025
Decision Rule:
The correlation analysis shows a strong, significant relationship between teachers' perception of EKOEXCEL and pupils' academic performance. All p-values are below 0.05, leading to rejection of the null hypothesis. Higher teacher approval of digital tools, structured lessons, and timely instruction is associated with improved attention span, literacy, numeracy, and task participation among pupils. This underscores how teacher perception significantly influences learning outcomes in early childhood education centres using EKOEXCEL.
Hypothesis 3
$H_0$3: *There is no significant effect of challenges faced by teachers in implementing EKOEXCEL on their instructional delivery in early childhood classrooms.*
Table 4: Linear Regression on Implementation Challenges and Instructional Delivery

Item No	Implementation Challenge		t-value	p-value
1	Inadequate technical support	-0.41	-2.78	0.008
2	Power supply issues	-0.36	-2.59	0.013
3	Overloaded lesson scripts	-0.39	-2.91	0.006
4	Insufficient training/refresher works	-0.43	-3.04	0.004
5	Large class size affecting device usab	-0.47	-3.11	0.003

Source: Field Report 2025
Decision Rule:
The regression analysis reveals that all identified challengestechnical issues, power supply, lesson overload, training gaps, and large class sizesnegatively and significantly affect instructional delivery, with all p-values below 0.05. Thus, the null hypothesis is rejected. This indicates that the more challenges teachers face, the less effective their teaching becomes under EKOEXCEL. Addressing these barriers is essential to enhance instructional quality and maximize learning outcomes in early childhood education centres.

Discussion of Findings

The findings from Hypothesis 1 show that teachers with over 10 years of experience perceive the EKOEXCEL initiative more positively than those with fewer years of experience. This aligns with the work of Tondeur *et. al*. (2017), who found that teaching experience plays a critical role in shaping positive attitudes toward the integration of technology in the classroom. Similarly, Adukaite *et. al*. (2018) reported that experienced teachers are better able to adapt digital tools to suit pedagogical needs, thereby enhancing learning outcomes. These studies support the idea that professional maturity fosters deeper appreciation and better utilisation of innovations like EKOEXCEL. However, in contrast, a study by Ertmer and Ottenbreit-Leftwich (2020) suggests that younger or less experienced teachers may be more flexible and quicker to adopt technology due to their digital nativity. Despite this opposing view, the current study affirms that years of experience significantly influence teacher perceptions of educational reform programs.

The findings reveal a strong, positive correlation between teachers' perceptions of the EKOEXCEL programme and pupils' academic performance, particularly in attention span, literacy, numeracy, and task participation. This supports the work of Voogt *et. al*. (2015), who noted that teachers' positive attitudes toward technology integration significantly enhance student engagement and achievement. Similarly, Ifinedo *et. al*. (2020) observed that when educators embrace digital tools and structured pedagogies, learners exhibit higher cognitive gains. These align with the present study's conclusion that teacher approval of EKOEXCEL elements like timely instruction and structured lesson plans boosts learning outcomes. However, Warschauer (2018) offers a contrasting view, suggesting that while teacher attitudes matter, student performance is more directly influenced by socioeconomic factors and infrastructural quality. Nonetheless, the current study emphasises the central role of teacher perception in early childhood digital pedagogy.

The findings reveal that implementation challenges significantly and negatively affect teachers' instructional delivery under EKOEXCEL. This aligns with Adeoye and Afolabi (2021), who reported that limited technical support and a lack of teacher training hinder effective integration of digital tools in Nigerian classrooms. Similarly, Umezinwa and Elendu (2020) emphasised that power supply issues and large class sizes reduce instructional efficiency in technology-driven programs. Both studies support the present finding that systemic and infrastructural constraints impair teaching quality. However, in contrast, Alhassan (2017) argued that with intrinsic motivation and adaptive strategies, teachers can still maintain effective instruction despite resource limitations. While the current study underscores external challenges, Alhassan's position suggests that teacher resilience and creativity can sometimes mitigate these barriers. Nonetheless, the overall evidence supports a proactive response to logistical and capacity-related constraints to strengthen the EKOEXCEL initiative in early childhood classrooms.

Conclusion

The study revealed that teachers' years of experience significantly influence their perception of the EKOEXCEL programme, with more experienced educators demonstrating higher approval. It also established a strong, positive relationship between teachers' perception of EKOEXCEL and pupils' academic performance, particularly in areas such as attention span, literacy, and numeracy. Furthermore, findings showed that implementation challenges such as inadequate technical support, power supply issues, and large class sizes negatively impact instructional delivery. These results underscore the importance of professional maturity, positive teacher attitudes, and adequate support systems in achieving successful educational technology integration. To enhance EKOEXCEL's effectiveness, policymakers must address these systemic challenges, invest in continuous teacher training, and ensure infrastructural stability. This holistic approach will not only improve instructional quality but also foster better learning outcomes in early childhood education centres across Lagos State. Ultimately, the success of educational reforms like EKOEXCEL hinges on empowering teachers and removing barriers to effective classroom delivery.

Recommendations

Based on the findings of the study, the following recommendations were suggested.

1. Regular, hands-on training and refresher workshops should be provided to teachers, especially less experienced ones, to improve their competence and confidence in using EKOEXCEL tools effectively.
2. The government should invest in a stable power supply and reliable technical support in schools to minimise disruptions during digital lesson delivery.
3. Curriculum developers should revise and streamline EKOEXCEL lesson scripts to reduce overload and allow teachers more flexibility and creativity in instructional delivery.
4. More teachers and digital devices should be deployed to ease classroom management and improve pupils' engagement during tech-based lessons, especially in large classes.
5. Stakeholders should promote the benefits of EKOEXCEL through peer mentoring and success stories, reinforcing its impact on learners' academic performance to encourage broader acceptance among educators.

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PARENT-COMMUNITY-SCHOOL PARTNERSHIP: A KEY TO UNLOCKING EARLY CHILDHOOD EDUCATION SUCCESS IN LAGOS STATE

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Abstract
The study examines parent-community-school partnership: A key to unlocking early childhood education success in Lagos State. The specific objective is to determine the challenges and opportunities associated with establishing and maintaining effective partnerships. A descriptive survey research design was adopted for the study. The target population were parents and school administrators selected from six primary schools in Badagry and Ojo Local Government Area of Lagos State. The sample consisted of 168 respondents sampled through a multistage sampling procedure. A well-designed instrument, titled Parent-Community-School Partnership in Early Childhood Education Questionnaire (PCSP_ECEQ), was used for the study. The Cronbach alpha method of reliability was used to determine the instrument's reliability, and a r=0.794 coefficient value was obtained. The result affirms a positive and significant relationship between parents-community-school partnerships and children's academic achievement in early childhood education centres (r = 9.16; p < 0.05). The results also depict a significant difference in the level of parents-community-school partnerships across different socioeconomic backgrounds (t = 8.47; df = 166 < 0.05). The study recommended that Teacher training programs should incorporate modules on effective communication strategies, cultural sensitivity, and partnership-building techniques to equip educators with the skills necessary to engage parents and community members from diverse backgrounds. Also, community leaders and local organisations should be actively involved in the planning and implementation of school programs, contributing their expertise and resources to enrich the curriculum and provide additional support to students and families.
Keywords: Early Childhood Education, Holistic Development, Parent-Community-SchoolPartnership**,** Parental Involvement

Introduction

Early Childhood Education is a crucial period in a child's development, laying the groundwork for future academic and social success (Sooter, 2013). Recognising its importance, this study explores the pivotal role of parent-community-school partnerships in enhancing early childhood education outcomes, specifically within the context of Lagos State, Nigeria (O'Connell *et al*., 2016). Such partnerships recognise that education is not confined to the classroom but is a collaborative effort involving parents, community members, and educators (Bierman *et. al*., 2023).

Lagos State, being a diverse and rapidly growing urban centre, presents unique challenges and opportunities for early childhood education. The state's educational landscape is characterised by a mix of public and private institutions, each catering to diverse socioeconomic backgrounds. Despite government efforts to improve early childhood education, disparities persist in terms of access, quality, and resources (Owojori& Gbenga-Akanmu, 2021). Many schools struggle with inadequate infrastructure, insufficient teaching materials, and a shortage of qualified educators. The utilisation of locally made resources is critical for effective teaching, learning, and the development of communicative competence in early childhood education (Okudo & Omotuyole, 2013). Furthermore, parental involvement in education varies widely, influenced by factors such as parental education levels, socioeconomic status, and cultural beliefs.

Early Childhood Education (ECE) is popularly recognised as a critical foundation for a child's cognitive, social, spiritual, emotional development and character formation. At this stage, children begin to develop skills

that help them read, write, solve problems and relate with others. In Lagos State, the government and private sectors are working to improve early childhood education, but many children still lack access to quality learning at this critical stage (UNICEF, 2019). Studies have shown that children who have access to quality early childhood education programs tend to perform better academically, exhibit stronger social skills, and have a greater likelihood of lifelong success (Heckman, 2011). However, achieving success in early childhood education requires a collaborative effort from parents, schools, and the community. Parent- community-school Partnership is a crucial factor in ensuring the effectiveness of early childhood education, particularly in developing regions such as Lagos State, Nigeria.

Lagos State, as Nigeria's most populous and economically vibrant region, faces several challenges in the provision of early childhood education. These include inadequate infrastructure, overcrowded classrooms, disparities in educational quality, and low parental involvement in children's learning (Adeosun, 2016). Research has established that when parents, schools, and communities work together, they create a more supportive learning environment that enhances children's academic and social development (Epstein, 2001). The parent involvement in education through home-based learning support, participation in school activities, and collaboration with teachers has been shown to significantly improve student outcomes (Odebowale & Oyedapo, 2022).

The community also plays a vital role in strengthening early childhood education by providing resources, mentorship programs, and advocating for better policies (Sheldon & Epstein, 2005). Schools, in turn, serve as the central institutions that facilitate collaboration by engaging parents and community stakeholders in decision-making processes and curriculum implementation. In Lagos State, while government policies exist to promote early childhood education (Federal Ministry of Education, 2013), their success largely depends on how well schools, parents, and communities interact to enhance learning experiences for young children. Despite the benefits of a strong Parent-Community-School Partnership, several obstacles hinder its effectiveness in Lagos State. These include economic constraints, cultural perceptions about parental roles in education, and a lack of structured engagement frameworks between schools and communities (Ajayi, 2017). Therefore, understanding the influence of this partnership on early childhood education success is essential for developing strategies that can enhance learning outcomes.

Parent and community engagement in education has become increasingly recognised as a crucial element in improving educational results and promoting societal advancement (Eden *et al.* 2024). Effective parent involvement includes numerous elements, such as parents participating in their children's academic lives, involvement in school events, and advocating for educational fairness (Eden *et al.* 2024). Such partnerships are essential for creating a supportive and enriching learning environment for young children. When parents, teachers, and community members work together, they can provide children with a more holistic and integrated educational experience, which prepares children for formal schooling (Bierman *et. al*., 2023). Parents' attitudes, knowledge, and perceived social standards all play important roles in determining the implementation of inclusive education, highlighting the importance of incorporating parental perspectives in educational strategies (Odebowale & Oyedapo, 2022). It has also been demonstrated that parents of low socioeconomic status spend less time engaging in developmental activities with their children, which contributes significantly to inequalities, highlighting the importance of targeted initiatives ("Reducing Inequalities by Investing in Early Childhood Education and Care," 2025). By leveraging the resources and expertise of parents and community members, schools can enhance their capacity to meet the diverse needs of their students. Community participation provides children with access to a wider range of learning opportunities, cultural experiences, and support networks.

Parental involvement in children's education is a multifaceted construct encompassing various activities and behaviours aimed at supporting children's learning and development (Boonk *et al.* 2018). The most powerful strategy to promote accomplishment is parent involvement, which is an active strategy that significantly boosts children's academic achievements (Sium, 2014). There are several variables that are consistently associated with high levels of academic achievement, including an authoritative parenting style, high and clear expectations and aspirations for their children's school results, communication between parents and children about their school activities and plans for the future, and parents' communication with teachers regarding their

child's progress or difficulties (Porumbu &Necşoi, 2013). Academic achievement includes grades, test scores, and academic awards, as well as the effective completion of educational activities and the attainment of learning objectives (Kumah *et. al*., 2024). Academic achievement not only reflects pupils' cognitive abilities but also their motivation, perseverance, and engagement in the learning process. When parents set high expectations for their children's academic achievement and schooling, engage in regular communication about school-related matters, and provide encouragement and support, children are more likely to succeed academically (Boonk *et. al*., 2018). Therefore, academic success is significantly influenced by an authoritative parenting style and ongoing communication between parents and children about their academic endeavours (Lim, 2021).

Research indicates that effective home-school partnerships have a positive impact on children's literacy development, especially for diverse families (Hindin *et al*. 2017). Parental involvement has a substantial impact on student academics, and the more parental involvement, the more likely students are to excel academically and become productive members of society (Cole, 2017). Parental involvement improves children's self-esteem, academic achievement, and behaviour, and the relationship between these systems is theorised to promote children's academic and behavioural development (Topor *et. al.*, 2010; Feng & Tan, 2022).

Theoretical framework

Epstein's framework of six types of involvement provides a comprehensive framework for understanding and promoting parent-community-school partnerships (Porumbu &Necşoi, 2013). The structure strives to bring school, parents, and community together in a positive manner, acting as a guide to educating and supporting parents to enhance their involvement in their children's education (Oranga *et. al.*, 2023). Bronfenbrenner's ecological systems theory (Ali *et. al.*, 2020) is another framework that emphasises the interconnectedness of different environmental systems, including the family, school, and community, in influencing child development. The Ecological Systems Theory emphasises the significance of understanding the complex, interactive relationships between a child and their surroundings, including the microsystem (family, school, peers), mesosystem (interactions between microsystems), exosystem (community, workplace), and macrosystem, in order to promote optimal development. This theory highlights the importance of collaboration and communication across these systems to create a supportive and nurturing environment for children's learning and development (Leonard, 2011).

Parents, teachers, and community members all play essential roles in a child's education, and their collaboration is critical for creating a supportive and enriching learning environment (Mahuro& Hungi, 2016). Parent involvement bridges the home and school environments, serving as a mesosystem within an ecological framework, where interactions between these microsystems uniquely influence the child (Nokali*et. al*., 2010). Parental engagement encompasses activities such as parent-child discussions, monitoring learning, and fostering positive relationships, which are linked to enhanced academic success in early grades (Nokali *et al.* 2010). However, differences in socioeconomic status can lead to disparities in family-school connections, impacting academic outcomes, such as poor parents experiencing misunderstandings with school personnel regarding their child's education (Crosnoe, 2023). Therefore, effective partnerships are characterised by mutual respect, open communication, shared decision-making, and a focus on the best interests of the child (Tan *et. al.*, 2022; Cabral *et al.*, 2024).

Active parental involvement in school is essential for healthy child development, but it is still relatively rare (Paccaud *et. al.*, 2021). Parents and communities play a crucial role in creating inclusive educational practices, with parental involvement being a primary factor (Muhammad *et. al.*, 2024). Family engagement strategies and practices can be informed by insights and principles of ecological understanding, and parent-teacher relationships should positively shape the child's development (Paquette & Ryan, 2001; Weiss *et. al.*, 2018). The family environment significantly influences a child's engagement in school, with parental support ranging from providing learning resources to setting high educational expectations (Ali & Hassan, 2018). Parental participation, defined as active engagement in a child's education, has been shown to yield significant improvements in student achievement across various forms (Oranga *et. al*., 2023). Furthermore, when parents are actively involved in their children's education, children tend to develop more positive attitudes towards school, exhibit fewer behavioural problems, and experience greater success with homework (Kingston, 2021).

Moreover, parental involvement extends beyond academic support to include emotional input, daily interactions, and efforts to foster a child's physical and mental development (Wei, 2022). Effective communication between parents and schools is vital for coordinating efforts and ensuring that students receive consistent support both at home and in the classroom. Teachers' engagement efforts and the school's climate for involvement can impact parents' involvement in their children's schooling (McDowall *et. al.*, 2017). The partnership between parents and the school fosters enhanced education, encouraging friendly interactions, collaboration, and networking, as well as optimistic communication, constructive feedback, and cooperation (Massucco, 2020). Effective communication is essential for developing trust and mutual understanding between parents and teachers, ultimately enhancing student outcomes.

Closing the achievement gap and increasing student learning necessitates collaboration among interested parties, with parents playing a pivotal role (LaRocque *et. al*., 2011). Children who have been guided by their parents at an early age tend to have better learning outcomes and good cognitive development (Hafiz & Farik, 2017). Parental involvement has a beneficial impact on students' academics, leading to increased motivation, better attendance, and higher levels of accomplishment (Cole, 2017; Leander & Fabella, 2020). According to research, when parents express interest in their children's education, it has a substantial and positive impact on their overall academic performance in secondary school. A child's school-related activities at home, according to research, have a considerable impact on their academic achievement (Latif, 2021). A child's academic performance is greatly influenced by how much their parents are involved (Cole, 2017).

Statement of the Problem

Despite the acknowledged benefits of parent-community-school partnerships, numerous obstacles impede their establishment and efficacy in Lagos State. These obstacles include a lack of communication between parents, teachers, and community members, as well as cultural differences, socioeconomic disparities, and a lack of resources. Many parents, particularly those from low-income backgrounds, may face barriers to participation due to time constraints, language barriers, or a lack of understanding of the educational system. Teachers may lack the training and support needed to effectively engage parents and community members, while schools may struggle to create welcoming and inclusive environments for all stakeholders. Furthermore, communities may not fully recognise the importance of early childhood education or may lack the resources needed to support local schools. There is frequently insufficient communication between parents and teachers, as well as a lack of parental knowledge about inclusive education, which impede the involvement of parents of children who are hesitant to provide treatment to their children (Nurjanah & Diana, 2020). Investigating these obstacles is critical for developing targeted interventions and strategies to promote successful parent-community-school partnerships in Lagos State. To address this problem, this study aims to investigate the current state of parent-community-school partnerships in early childhood education in Lagos State.

Purpose of the Study

The specific objectives of this study are to:

i. Examines the nature and extent of parent-community-school partnerships in selected early childhood education centres in Lagos State.
ii. Determine the challenges and opportunities associated with establishing and maintaining effective partnerships.
iii. Explore the impact of these partnerships on children's academic, social, and emotional development.

Hypotheses

H01: There is no significant relationship between the level of parent-community-school partnerships and children's academic achievement in early childhood education centres in Lagos State.

H02: There is no significant difference in the level of parent-community-school partnerships across different socioeconomic backgrounds in Lagos State.

Methodology

The study adopted descriptive survey research. Parents and school administrators formed the population of the study. The target population was parents and school administrators selected from six primary school in Badagry and Ojo Local Government Area of Lagos State. The sample consisted of 168 respondents sampled through a multistage sampling procedure. A simple random sampling technique was used to select 2 LGAs: Badagry and Ojo Local Government Area of Lagos. A simple random sampling technique was used to select 6 schools from each of the selected LGAs. The stratified sampling technique was used to select 13 preschool parents from each of the selected schools, and 1 school administrator was selected from the selected schools, which give total of 156 preschool teachers and 12 school administrators. A well designed instrument was used for the study, titled Parent-Community-School Partnership in Early Childhood Education Questionnaire (PCSP_ECEQ). The instruments were validated by experts in the Department of Educational Foundations and Counseling Psychology, Lagos State University, Ojo. The items in the instruments were designed to meet both construct and content validity. The Cronbach alpha method of reliability was used to determine the reliability of the instrument, and a coefficient value of r=0.794 was obtained.Data collected were analysed using inferential statistics of Pearson Product-Moment Correlation (PPMC) and t-testat 0.05 level of significant**.**

Results

Testing the Hypotheses

H01: There is no significant relationship between the level of parent-community-school partnerships and children's academic achievement in early childhood education centres in Lagos State.

Table 1: Summary of Pearson Correlation on Parents-Community-School Partnerships and Children's Academic Achievement in Early Childhood Education Centres

Variable	N	Mean	Std.D	r	Sig.	Remark
Parent-community-school partnership	168	4.367	13.685			
				.916*	0.000	significant
Children academic achievement	168	5.437	20.039			

The result in table 1 affirms a positive significant relationship between parents-community-school partnerships and children's academic achievement in early childhood education centres ($r = 9.16$; $p < 0.05$). Therefore, hypothesis 1 is rejected. The positive relationship implies that parental participation as active engagement in a child's education has been shown to yield significant improvements in student achievement across various forms of education.

$H_0$2: There is no significant difference in the level of parent-community-school partnerships across different socioeconomic backgrounds in Lagos State.

Table 2: Summary of Independent t-test Showing Difference in the Level of Parent-Community-School Partnerships Across Different Socioeconomic Backgrounds in Lagos State

Variable	N	Mean	Std.Ddf	t	Sig.	Remark
home based involvement	96	6.34	10.13			
				166	8.47 .000	significant
school based involvement	72	9.26	17.4 2			

The results in Table 2 depicts a significant difference in the level of parents-community-school partnerships across different socioeconomic backgrounds ($t = 8.47$; $df = 166 < 0.05$). Therefore, the null hypothesis 2 is

rejected. This implies that parent and community engagement in education has become increasingly recognised as a crucial element in improving educational results and promoting societal advancement. Effective parent involvement includes numerous elements, such as parents participating in their children's academic lives, involvement in school events, and advocating for educational fairness.

Discussion of Findings

The findings from hypothesis one revealed that there is a significant positive relationship between parents-community-school partnerships and children's academic achievement in early childhood education centres. The finding is in line with Muhammad *et al*. (2024) opines that parents and communities play a crucial role in creating inclusive educational practices, with parental involvement being a primary factor. Parents are actively involved in their children's education, children tend to develop more positive attitudes towards school, exhibit fewer behavioural problems, and experience greater success with homework (Kingston, 2021). Moreover, parental involvement extends beyond academic support to include emotional input, daily interactions, and efforts to foster a child's physical and mental development (Wei, 2022).

The findings from hypothesis two depict that there is a significant difference in the level of parents-community-school partnerships across different socioeconomic backgrounds. The finding is in line with Eden *et al*. (2024) says parent and community engagement in education has become increasingly recognised as a crucial element in improving educational results and promoting societal advancement. Effective parent involvement includes numerous elements, such as parents participating in their children's academic lives, involvement in school events, and advocating for educational fairness (Eden *et al*., 2024). Also, it has been demonstrated that parents of low socioeconomic status spend less time engaging in developmental activities with their children, which contributes significantly to inequalities, highlighting the importance of targeted initiatives ("Reducing Inequalities by Investing in Early Childhood Education and Care," 2025). By leveraging the resources and expertise of parents and community members, schools can enhance their capacity to meet the diverse needs of their students.

Conclusion

The study underscores the crucial role of parent-community-school partnerships in fostering successful early childhood education outcomes in Lagos State, affirming that a collaborative ecosystem significantly enhances children's learning experiences and overall development. It is imperative to offer appropriate and meaningful educational experiences to children, and this can be achieved through the utilisation of locally made resources for effective teaching and learning. The investigation highlights that active parental engagement, encompassing both commitment to the school and direct participation in children's educational activities, correlates strongly with improved cognitive development and academic achievements. Schools that actively cultivate community relationships and integrate local resources into the curriculum demonstrate enhanced learning environments and foster a sense of belonging among students. Effective partnerships necessitate that schools implement deliberate strategies, like regular communication channels, parent-teacher associations, and community-based programs, to surmount challenges such as socio-economic disparities, cultural differences, and logistical hurdles.

Recommendations

To amplify the impact of parent-community-school partnerships, the study recommended that;

1. Teacher training programmes should incorporate modules on effective communication strategies, cultural sensitivity, and partnership-building techniques to equip educators with the skills necessary to engage parents and community members from diverse backgrounds.
2. Schools should establish parent-teacher associations and community-based forums that provide regular opportunities for dialogue, feedback, and collaborative decision-making, fostering a sense of shared ownership and responsibility for children's education.
3. Community leaders and local organisations should be actively involved in the planning and implementation of school programs, contributing their expertise and resources to enrich the curriculum and provide additional support to students and families.

4. Educational interventions should prioritise the integration of community resources and cultural experiences into the curriculum, providing students with relevant, real-world learning opportunities that connect classroom instruction with their daily lives.
5. Parents of low socio-economic status may spend less time on developmental activities because of limited resources and higher exposure to stress.

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CULTURALLY RESPONSIVE TEACHING IN THE LOWER PRIMARY CLASSES OF NIGERIA

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Abstract
This paper makes a case for the full implementation of culturally responsive teaching (CRT) in lower primary classes across Nigeria, emphasising its role in value-based education and cultural preservation. It explores how teachers and caregivers introduce cultural norms-both universal, such as honesty and kindness, and localised practices like greetings, gender roles, and etiquette- into early childhood learning. Drawing from Bloom's taxonomy, Vygotsky's sociocultural theory, and Bronfenbrenner's ecological systems theory, the study underscores the formative nature of early childhood in shaping moral and cultural identity. Despite its relevance, CRT faces numerous obstacles, including inadequate teacher preparation, rigid curricula, and increasing societal preference for academic outcomes over cultural learning. The study advocates for repositioning caregivers as cultural agents and proposes actionable strategies such as curriculum reform, teacher training in CRT pedagogy, inclusion of indigenous learning materials, and stronger school-community collaboration. Through a reflective and intentional approach to teaching, the integration of culturally grounded content can help maintain Nigeria's rich cultural heritage while nurturing socially responsible and culturally aware citizens. The paper concludes by offering policy and practice-based recommendations to enhance the application of CRT in foundational education settings.
Keywords: Culturally Responsive Teaching (CRT), Culture, cultural concepts, lower primary, caregivers

Introduction

In contemporary Nigerian society, the gradual decline of fundamental cultural practices among the younger generation, particularly those in lower primary grades, has become a significant concern. Customs that once defined community life, such as respect for elders, communal responsibility, traditional greeting patterns, eating manners, folklore and language preservation, among others, are increasingly becoming obsolete. This decline can be traced to the quality and nature of care and education children receive during their early years of development. The early years are indeed crucial and universally acknowledged as formative for character and moral value development.

The above declaration attest to what Bloom derived from analyses and syntheses of existing developmental and educational research (Bloom, 1964) about human growth and development. To him, the early childhood period (from birth to age eight) is crucial, as it accounts for the majority of a child's intellectual and moral foundation. Bloom emphasised that about 50% of a child's cognitive development occurs by the age of four, and up to 80% by the age of eight (Bloom, 1964). This underscores the argument that the values, practices and beliefs instilled during the formative years profoundly shape lifelong patterns of thought, identity and character of the child. In this connection, failure or success to instil cultural concepts into the child tells on the child's overall development, most especially when conducting his/her activities in the most culturally accepted manner. In spite of the acknowledged importance of early cultural orientation, studies have revealed that Nigerian schools, especially in urban centres, are increasingly dominated by Westernised curricula and pedagogies that often

marginalise local cultural values (Adegbija, 2020; Okonkwo & Ogu, 2020). Adegbija (2020) further noted that cultural dissonance in primary classrooms leads to identity confusion and weak moral grounding among learners. Similarly, Okonkwo and Ogu (2020) observed that many lower primary educators lack adequate training in integrating culturally relevant content into their teaching, contributing to a growing disconnect between home-based and school-based value systems.

Culturally responsive teaching (CRT), therefore, emerges as a necessary pedagogical response to these challenges. CRT involves recognising, respecting, and exposing the child to cultural backgrounds and experiences as meaningful sources for learning. This approach positions caregivers, teachers, parents, older siblings, peers, and community elders as critical stakeholders in shaping children's values and behaviour. These figures constitute the child's immediate learning environment and act as informal educators whose actions, attitudes, and dispositions deeply affect the child's cultural development. Considering that this paper cannot deal with the roles of all critical stakeholders in educating the child on the basic cultural practices of the society, it therefore discusses the extent to which teachers and caregivers in lower primary can culturally respond to socialising the child in the lower primary classes, that being the crucial stage in character formation, orientation and reorientation.

The focus here is on how caregivers respond to and integrate culturally-related concepts into the learning experiences of pupils at the lower primary school level in Nigerian schools. These cultural concepts may be broadly categorised into universal cultural concepts, such as honesty, non-violence, and justice, and localised cultural concepts, which differ across regions and include practices such as greetings, etiquette, gender roles, and notions of respect. The central thrust is that unless teachers and caregivers become intentional and reflective in their teaching of both universal and localised cultural values, Nigerian children risk becoming culturally rootless in an increasingly globalised world. In light of this background, the discussion shall take the following sequence:

i. Conceptual Definitions
ii. Cultural practices
iii. Theoretical review
iv. Justification of the roles of the teacher and caregiver in culturally-responsive teaching of the child
v. Challenges confronting the teacher/caregiver in maintaining culturally responsive teaching in typical Nigerian classrooms
vi. Solutions to the challenges confronting the teacher/caregiver in maintaining culturally responsive teaching in typical Nigerian classrooms
vii. Suggestions
viii. Conclusion

Conceptual Definitions

To lay a proper foundation for this discussion, it is essential to clarify the core concepts underpinning culturally responsive teaching in Nigerian lower primary school classes as: caregivers, culture, cultural responses, lower primary, and culturally related concepts.

Caregivers: The term caregivers, in the context of education and child development, refers to individuals who provide care, guidance, and support for the child's overall development. On a general note, it includes parents, teachers, early childhood educators, older siblings, and sometimes extended family members or community elders (Ejieh, 2006). In the classroom, caregivers (mainly teachers) not only serve as transmitters of academic content but also shape the values and cultural identity through modelling and reinforcement.

Culture: The concept of culture is generally used to refer to the totality of learned behaviours, beliefs, values, norms, language, customs, and artefacts shared by a group of people and transmitted from one generation to the next. It encompasses both tangible and intangible elements of a people's way of life. Akinwale (2019) sees culture as the soul of a people, and when it is not consciously transferred to children, societal identity and continuity are threatened. An interpretation of Akinwale's position is that no society can be sustained without retaining its culture.

Cultural responses: It is the way individuals or institutions react, adopt or integrate cultural values and practices into behaviour, instruction, or decision-making. In education, culturally responsive teaching (CRT) is

a pedagogical approach that acknowledges the cultural backgrounds of learners and uses those backgrounds as a foundation for effective teaching and learning (Gay, 2018). In Nigeria's multi-ethnic context, a culturally responsive educator is one who embraces, reflects and integrates learners' diverse cultural realities into instructional content, classroom interactions and assessment.

Lower primary: Lower primary in the Nigerian education system includes Primary 1 to Primary 3, and in most cases, the age of the children ranges from 6 to 8 years. This phase forms the first segment of basic education under the Universal Basic Education (UBE) programme and is considered critical for literacy, numeracy, socialisation, and value formation. Research by Uzoechina and Umeano (2020) affirms that cultural awareness and moral orientation take shape during this stage, reinforcing the argument for deliberate cultural education during the early primary classes.

Culturally related concepts: The concepts that are culturally related are values, norms, and behaviors. Children are expected to learn these virtues as part of the culture of the society, and it is considered part of their cultural socialisation. These concepts can be categorised into two types, namely universal and non-universal cultures.

Universal cultural concepts: This refers to practices that are universally recognised as good behaviour or practice. Some such cultural practices are politeness, honesty, respect for life, non-violence, patriotism, and kindness. These virtues are considered morally binding, regardless of the child's location or background.

Non-universal cultural concepts: The non-universal cultural concepts vary from one community or ethnic group to another. In Nigeria, such concepts include greeting protocols, modes of dressing, gender roles, food practices, respect for elders, taboos around topics such as dating, romance and sex education, communal living, and age-grade responsibilities. What may be viewed as respectful in one culture might be perceived differently in another. For instance, in Yoruba culture, kneeling or prostrating is a sign of respect, while among the Igbo, verbal greetings and symbolic gestures suffice (Olaosebikan, 2020).

Diverse Cultural Practices

Cultural practices refer to habitual behaviours and traditions that reflect the values and worldview of a society. These practices are embedded in daily life and shape how individuals interact, communicate, and express identity. In the Nigerian context, cultural practices are highly diverse, reflecting over 250 ethnic groups, each with unique customs and traditions. The major types of cultural practices relevant to children in early childhood include:

Language Use and Communication Styles: Language is central to cultural identity and thought. The use of indigenous languages in teaching and interaction helps children internalise cultural values (Bamgbose, 2018). Communication styles such as tone, formality, non-verbal cues, and storytelling vary across cultures and influence how knowledge is transmitted.

Social Etiquette and Manners: Practices such as greeting elders, sharing food, waiting for one's turn, and showing deference, etc., reflect deep cultural values. For example, in many Nigerian cultures, interrupting an elder is considered rude, and communal eating is a sign of unity and respect.

Dress and Appearance: Dress codes convey cultural identity. Teaching children to wear traditional attire on Cultural-Days in schools fosters association with one's origin and identity awareness. This practice is common in many Nigerian primary schools during cultural festivals or Independence Day celebrations.

Religious and Spiritual Beliefs: Though Nigeria is a secular state, spirituality is central to many cultural beliefs. Respecting diverse religious backgrounds, observing local holidays, and introducing moral instruction based on shared values enhance cultural responsiveness.

Family and Kinship Roles: The way children are expected to interact with family members, take responsibility, and contribute to household chores is rooted in culture. Some schools reinforce this by assigning classroom responsibilities or encouraging group projects that reflect collective responsibility.

Rites of Passage and Celebrations: Cultural practices also include naming ceremonies, festivals, initiation rites, and marriage customs. Though not all are taught directly in the classroom, teachers can integrate discussions, songs, stories, and arts that mirror these practices.

Food and Eating Customs: Cultural expectations around food, such as sharing, eating in silence, or washing hands before meals, are often taught informally at home but can be reinforced in the school setting to promote hygiene and cultural continuity.

It is important to note that a growing body of Nigerian research suggests that when these practices are integrated into school curricula and classroom activities, pupils perform better socially and morally, demonstrating greater respect for community values (Iroegbu, 2020; Uzoechina & Umeano, 2020). The position as buttressed by the scholars, further stresses the need for this paper. To proceed, there is a need to examine certain theories deemed relevant to this paper.

Theoretical Review

Understanding the theoretical underpinnings of culturally responsive teaching is essential in clarifying the roles of caregivers and teachers in shaping the child's learning experiences and cultural orientation. Among the most influential frameworks that justify the importance of adult involvement in the child's development are Vygotsky's Sociocultural Theory (1978) and Bronfenbrenner's Ecological Systems Theory (1979). Both theories highlight the importance of social and cultural contexts in a child's learning, but also emphasise the pivotal role that adults play as mediators, guides, and cultural transmitters.

Vygotsky's Sociocultural Theory.

Lev Vygotsky, a Russian psychologist, developed the Sociocultural Theory in the late 1920s and 1930s, with its most comprehensive publication appearing in Mind in Society (1978). The theory rests on the principle that learning is not an isolated individual activity but a socially mediated process. Central to Vygotsky's thought is the concept of the Zone of Proximal Development (ZPD)-the gap between what a child can do independently and what they can achieve with guidance from a more knowledgeable other, such as a parent, teacher, or peer. In this respect, adult–child interaction is seen as critical to the child's acquisition of knowledge, skills, and cultural understanding. For culturally responsive teaching, the theory underscores the role of caregivers and teachers in introducing children to cultural norms, indigenous languages, values, and social practices that are vital to their identity formation. The scaffolding provided by adults ensures that children learn not only academic skills but also ways of thinking and behaving that align with their cultural contexts. Thus, caregivers become active agents of cultural continuity, helping children connect classroom learning with their lived experiences.

Bronfenbrenner's Ecological Systems Theory.

Urie Bronfenbrenner, an American developmental psychologist, introduced his Ecological Systems Theory in 1979 through the book The Ecology of Human Development. His model emphasises that a child's growth and learning cannot be understood in isolation from the broader environmental contexts in which they are embedded. Bronfenbrenner proposed a layered system of influences: the microsystem (immediate settings like family, school, and peers), the mesosystem (interactions between home, school, and community), the exosystem (indirect influences such as parents' workplace policies), and the macrosystem (the overarching cultural values, beliefs, and societal expectations). In the Nigerian context, caregivers and teachers operate within the microsystem but act as bridges to the macrosystem when they integrate children into national cultural practices, indigenous knowledge, and civic values. Their role extends beyond academic instruction to serving as custodians of cultural heritage and mediators between the home culture and the school culture.

Relevance to Culturally Responsive Teaching.

Together, these theories affirm that caregivers and teachers are not mere transmitters of abstract knowledge but shapers of children's cultural consciousness. Their ability to design and implement instruction that resonates with learners' cultural backgrounds directly supports engagement, identity development, and academic success.

For stakeholders, the benefits are far-reaching:

For children, it nurtures confidence, belonging, and the ability to navigate multiple cultural spaces.

For parents, it reinforces the value of their cultural contributions and builds trust between the home and school.

For teachers, it provides a framework for inclusive pedagogy that respects diversity while promoting unity.

For the nation, it strengthens cultural preservation and contributes to national identity formation.

In summary, Vygotsky's and Bronfenbrenner's theories collectively validate the call for culturally responsive teaching in Nigerian lower primary schools. They are a reminder of the fact that education is not culturally neutral but deeply rooted in the social, linguistic, and value systems of the community. Caregivers and teachers, by applying these insights, can position children to succeed academically while remaining grounded in their cultural identity.

Justification of the Roles of the Teacher and Caregiver in Culturally Responsive Teaching of Children. The role

of caregivers, especially teachers in the formal school setting, is crucial in instituting cultural practices among Nigerian children. Given that the early years of schooling are critical for shaping children's moral compass, identity, and sense of origin, teachers must move beyond academic instruction to include intentional cultural nurturing. One major justification is based on the influence of significant adults during the early years of development. Vygotsky's socio-cultural theory contends that children construct knowledge through interactions with more knowledgeable others, most especially adults in their environment. In the Nigerian classroom, the teacher serves as one of the most consistent adult figures during the school day and is therefore strategically placed to model and reinforce culturally grounded behaviour (Ekwueme & Olayemi, 2021).

In this connection, Bloom's assertion that 50–80% of a child's mental development is complete by age eight supports the idea that cultural education must occur early. Teachers, therefore, carry the responsibility of shaping not just cognitive abilities but also moral and social development, which are rooted in cultural values. Some empirical studies affirm that children taught using culturally responsive strategies perform better socially and exhibit a stronger sense of identity. For instance, research by Uzoechina and Umeano (2020) revealed that learners in classrooms where teachers integrate local folktales, proverbs, indigenous languages, and examples from traditional life showed improved social behaviour, respect for elders, and communal responsibility. Caregivers can be culturally responsive in many ways. Some such ways include:

Caregivers can infuse culture in teaching materials (such as using Nigerian names, settings, and stories).

Caregivers can encourage participation in cultural days or traditional celebrations in schools.

Caregivers can use local languages as a medium of instruction, especially in the lower grades, as mandated by the National Policy on Education (2013).

Caregivers can serve as models by demonstrating respectful behaviour, thereby modelling cultural expectations.

Caregivers can be culturally responsive by integrating moral instruction through storytelling, role-playing, and classroom routines. Ultimately, culturally responsive teaching by caregivers helps to bridge the gap between home and school, ensuring continuity in value formation and affirming the child's cultural identity within the learning process. Challenges Confronting the Teacher in Delivering Culturally Responsive Teaching in Nigeria's Classrooms. No one may say that culturally responsive teaching (CRT) cannot improve or enrich the nurturing of culturally grounded learners, caregivers and teachers at the lower primary classes in Nigeria; however, they face numerous challenges in maintaining this approach in practice. Foremost is the lack of professional training and awareness suitable to care and teach the lower primary school child, such that the children are culturally proactive. Many early childhood educators at the lower primary have not received adequate training on how to integrate cultural content into the curriculum. This lack of preparedness results in huge reliance on textbook-driven instruction that may not reflect the sociocultural realities of the learners (Nwachukwu & Abiola, 2020).

Outside the issue of readiness, some teachers are unaware of the value of CRT or see it as outdated in the face of modern or westernised curricula (Eze & Okafor, 2020). As a result, they do not have the skills required to handle children in the multicultural complexity and linguistic diversity in Nigerian classrooms. This phenomenon poses significant hurdles to the orientation and re-orientation of the Nigerian child about the acquisition of basic cultural practices. Nigeria's multi-ethnic nature presupposes that learners often come from varied linguistic and cultural backgrounds. A classroom in Lagos, for example, might include Yoruba, Igbo, Hausa, and children from minority groups. This diversity can make it difficult for a single teacher to fairly cater to all the children from different cultural backgrounds. This invariably leads to marginalisation of minority perspectives or sets of children (Adeyemi & Odukomaiya, 2021).

One other issue that impedes the caregivers' culturally responsive disposition in a typical Nigerian classroom is curriculum rigidity. The Nigerian primary curriculum is centrally designed and often lacks flexibility for teachers to introduce indigenous content or localised experiences. Even where civic and moral education is included, the content may not align with the unique cultural expectations of people from some regions (Eze & Okafor, 2020). The pressure from parents and society to prioritise academic performance over cultural development is another problem. Parents often equate education with success in literacy and numeracy, thereby putting pressure on teachers/caregivers to focus on examinations and standardised assessments, to the detriment of cultural learning (Onyema & Okoli, 2022).

Resource constraints also limit the ability of caregivers to maintain culturally responsive teaching. Many public schools lack culturally relevant learning materials such as folktales, traditional art supplies, or indigenous language books and operate in overcrowded classrooms, leaving little room for differentiated or culturally grounded activities (Iroegbu, 2020).

Conclusively, while caregivers are positioned to promote cultural values, the aforementioned challenges, ranging from policy and training limitations to environmental and societal pressures, continue to hinder the consistent application of culturally responsive teaching practices in Nigerian schools that would promote the acquisition of cultural virtues by children.

Ways to Overcome the Challenges in the Delivery of CRT in Nigerian Classrooms

To overcome the challenges hindering culturally responsive teaching (CRT) in Nigerian lower primary schools, several strategic solutions are necessary. First, teacher education programmes must be restructured to include compulsory CRT modules, ensuring educators are trained to integrate cultural content effectively. In-service training and continuous professional development workshops should be provided to build teachers' competence in handling multicultural and multilingual classrooms. Secondly, curriculum reform is vital; flexibility must be built into the national curriculum to allow for the inclusion of local cultural experiences, languages, and values. Third, educational resource development must prioritise culturally relevant materials such as indigenous storybooks, visual aids, and folktales, among others, distributed across schools. Additionally, government and community collaboration should be encouraged to organise cultural days, storytelling sessions, and language immersion activities. Finally, sensitisation of parents and stakeholders is needed to balance academic goals with cultural development, promoting a holistic view of education. With these interventions, caregivers can more effectively nurture culturally grounded learners, preserve Nigeria's diverse heritage, and support identity formation from the early years.

Conclusion

The role of culturally responsive teaching in the preservation and promotion of societal values among children in Nigerian lower primary schools cannot be overstated. This paper has established that the early childhood period represents a foundation stage for cultural identity, moral values, and social behaviours. The increasing erosion of traditional practices, fueled by globalisation, curriculum limitations, and the undervaluing of indigenous knowledge systems, which threatens the continuity of Nigeria's rich cultural heritage, is unabating. Hence, safeguarding Nigeria's cultural legacy begins with her children. Intentional efforts must be made to engage caregivers who can orientate and reorient the children through intentional and culturally responsive teaching. To achieve this, caregivers, teachers, parents, and significant adults are strategically positioned to orient and re-orient cultural values through deliberate, reflective, and culturally grounded teachings. The classroom serves as a fertile ground for reinforcing both universal and non-universal norms and values of the society. Unfortunately, those in a position to transmit the needed culture onto the children do not seem to have the chances to do so because they are limited by inadequate training and multicultural complexities to systemic rigidity, among other factors. However, all hopes are not lost if the schools can integrate indigenous languages, stories, folktales, and cultural scenarios into instructional materials at the lower primary level.

Suggested Steps

To address these issues and strengthen the role of culturally responsive teaching in Nigerian schools, the following suggestions are proposed:

Revise and localise the curriculum to incorporate both universal and non-universal cultural contents. This includes integrating indigenous languages, stories, folktales, and cultural scenarios into instructional materials at the lower primary level. Train teachers on culturally responsive pedagogy through pre-service and in-service programmes. Such training should emphasise practical strategies for embedding culture in classroom instruction and managing multicultural classrooms effectively. Promote community-school partnerships that involve elders, parents, and cultural custodians in the teaching-learning process. Schools can organise cultural days, storytelling sessions, and language immersion activities to enhance cultural awareness. Provide culturally

relevant teaching resources such as bilingual storybooks, local art materials, proverbs, and traditional songs to support classroom instruction. Encourage policy frameworks from the Federal Ministry of Education and State Universal Basic Education Boards (SUBEBs) that mandate cultural competence as a key aspect of teacher performance and curriculum development.

Balance academic and cultural goals by emphasising holistic education that values identity formation, ethical development, and academic achievement in equal measure.

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IMPACT OF TECHNOLOGY AND ARTIFICIAL INTELLIGENCE AMONG PRIMARY SCHOOL PUPILS IN LAGOS STATE

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Abstract

The study examined the impact of technology and artificial intelligence among primary school pupils in Lagos State. Technology is the mother of civilisations. It has impacted different aspects of life. Complex and critical processes can be carried out with ease and greater efficiency with the help of technology. A descriptive survey research design was adopted for the study. The targeted population for this consisted of pupils and teachers in Ojo and Amuwo-Odofin local government education authorities in Lagos State, and the sample involved 220 participants. A multistage sampling procedure was employed for the study. A self-designed instrument was used for the study titled, Technology and Artificial Intelligence for Pupil and Teachers Questionnaires(TAIPTQ). The reliability of the instrument was tested using Cronbach's alpha, with a reliability coefficient of 0.81. Inferential statistics of the Pearson Product-Moment Correlation coefficient was used to test the null hypotheses formulated at a 0.05 level of significance. The findings show that there was a significant positive relationship between technology and AI integration and learning outcomes among primary school pupils in Lagos State. Also, there was a significant positive relationship between technology and AI usage and pupils' well-being in Lagos State. The study recommended that AI-powered platforms can provide personalised learning experiences, improving pupils' understanding and engagement. Lastly, AI can help pupils develop essential soft skills like communication, critical thinking, teamwork, and adaptability.

Keywords: Technology, Pupils, Artificial Intelligence, Educational System and Application of Artificial Intelligence

Introduction

Lagos State, Nigeria, is not an exception to the growing global interest in integrating technology and artificial intelligence into basic education. Artificial intelligence has considerable potential to change educational methods and results, enabling young pupils to achieve greater academic performance, higher engagement, and personalised learning experiences (Roy &Swargiary, 2024).

However, a detailed understanding of the unique advantages and limitations of Lagos State's educational system is essential for the effective use of artificial intelligence in this context.

Society has undergone a profound transition from a conventionally driven framework to a contemporary knowledge-based paradigm, in which creativity and innovation serve as the primary catalysts. Artificial Intelligence (AI) has become a major topic of discussion in today's culture, because of the rapid advancements in technology. Krstić *et al*. (2022) assert that artificial intelligence is universally and publicly acknowledged as the technology of the future. Jain and Jain (2019) assert that the AI technological revolution has occurred in many regions globally in recent decades. The main goal is to replicate human intelligence in computers, which would then improve their ability to learn.

Defining artificial intelligence in a single, universally accepted form is difficult because it has many different uses. According to Tuomi (2018), there are many different ways to define artificial intelligence, such as machines that can think, comprehend language, solve issues, diagnose illnesses, operate automobiles, play chess, and paint like Van Gogh. According to Nilsson in Tuomi (2018), artificial intelligence is the ability of a computer system to perform tasks that intelligent individuals typically perform. Nevertheless, this definition is tautological, as it requires defining intelligence, thereby limiting its applicability. Consequently, artificial intelligence is increasingly perceived as a scientific field dedicated to the development of machines capable of effective operation within their environments.

Moreover, Hussain *et al*. (2022) posit that artificial intelligence conjures the image of a potent computer, distinguished by sophisticated processing capabilities. These capabilities encompass adaptive behaviors, integrating sensors and other attributes that emulate human cognition and abilities, thus improving its capacity for interaction with individuals.

According to these criteria, advances in computers, computer technologies, machinery, and information communication technologies give rise to artificial intelligence, which allows computers to do tasks that are very similar to those of humans. Artificial intelligence is certainly a key technology that's changing education worldwide. Education is the foundation for progress in every country.

According to Agih (2015), it establishes the foundation for literacy, skill development, technological progress, and the use of natural resources for growth. Universities serve as pivotal institutions in tertiary education, significantly contributing to national development. Their role involves shaping human capital, conducting research, and promoting innovation across diverse industries. Iviemu (2021) asserts that tertiary institutions are responsible for producing high-quality graduates who will emerge as influential leaders and proficient professionals in their fields. Artificial intelligence has recently addressed challenges in education, especially within universities, stemming from the limitations of conventional teaching methods and the complexities of the educational system.

E-learning has made vast amounts of data available, enabling AI to devise intelligent solutions to intricate educational challenges. Research indicates that artificial intelligence (AI) is of paramount importance in higher education, especially within universities, as it offers students adaptable learning options through advanced technological applications.

AI-driven educational tools, such as ChatGPT, Scikit Learn, TensorFlow, PyTorch, CNTK, Caffe, Apache MXNet, Keras, OpenNN, AutoML, H2O, OpenAI, Grammarly, and QuillBot, are augmenting the effectiveness and efficiency of pedagogical practices and the learning process.

According to reports, artificial intelligence tools have a big impact on university students' academic performance. Nwosu and Okoli (2019) define academic success as the systematic and deliberate assessment of learning outcomes. This encompasses assessing students' academic progress via their grades, test scores, attendance, class engagement, study practices, and other vital metrics of academic achievement. AI systems in education help university students become more organised, enhance their study habits, offer personalised guidance, and build their critical thinking skills.

Huang (2021) emphasises the advantages of employing artificial intelligence tools in teaching. AI's application in education has demonstrated a beneficial impact on personal development (Lai *et. al.,* 2023). By analysing data, finding trends, and predicting results, artificial intelligence helps educators personalize their teaching to each student's needs (Bit *et al.* 2024).

Adaptive learning systems can adjust the difficulty of instructional content based on a student's performance, thereby enhancing engagement and utility of the learning experience (Kannamma *et al.* 2022). Artificial intelligence can automate grading and provide rapid feedback, thereby facilitating student learning and allowing educators to dedicate more time to individualised assistance (Kamalov &Gurrib, 2023). Notwithstanding these advantages, concerns persist regarding data privacy, algorithmic bias, and the potential for excessive dependence on technology, which may hinder the cultivation of essential social and emotional competencies (Kannamma *et al.* n.d.).

The growing adoption of artificial intelligence in educational settings demands a comprehensive assessment of its effects, especially for younger students, to fully harness its potential while also protecting their

holistic growth and welfare. According to Farhan *et al.* (2024), AI is able to identify elements that are relevant to classes. Teachers can use AI to improve students' daily conduct, grades, and even emotions (Ma *et. al.,* 2024). It is important to take into account how AI can enhance students' academic achievement as well as how it impacts other facets of their lives (Hwang, 2022).

To see and understand the world, AI systems use a range of input modalities, such as text, images, audio, and video (Luz, 2020). This includes methods that allow machines to understand and process sensory data, such as computer vision, natural language processing, and speech recognition. Furthermore, studies have shown that AI systems assess information, reach conclusions, and form opinions using logical and probabilistic reasoning. They can use statistical models, algorithms, or preset rules to tackle complicated problems and generate appropriate solutions or actions. AI systems can also learn from data and progressively become better at what they do. They can automatically pick up new knowledge, spot trends, and change their behavior by using techniques like machine learning, deep learning, and reinforcement learning (Abed & Anupam, 2023). This adaptability enables AI systems to thrive in dynamic settings, boosting both precision and productivity.

By leveraging smart course design, AI may assist educators in crafting curricula that resonate with students' individual requirements and preferences. By analyzing student data, artificial intelligence (AI) systems can offer suggestions regarding preferred learning styles, optimal topic sequencing, and any gaps in the course material. With this knowledge, lecturers can create more engaging and practical learning exercises. Academics assert that AI systems operate autonomously, completing tasks without constant human supervision (Sipior, 2020). By automating repetitive or complex procedures, they can reduce manual labour and increase output. Pattern recognition, data processing, and decision-making are key aspects, with physical actions in robotics. AI systems frequently interact with people through interfaces designed for teamwork and communication, such as advanced humanoid robots, chatbots, and virtual assistants.

The objective is to facilitate fluid and instinctive communication between humans and machines, permitting AI systems to comprehend and react to human inquiries, demands, or directives (Abed & Anupam, 2023). Artificial intelligence includes a wide range of methods, techniques, and uses, such as machine learning, natural language processing, computer vision, and robotics.

The operational definition of AI delineates the essential elements and functionalities that differentiate AI systems from conventional computer programs, enabling them to exhibit intelligent behaviour and perform tasks that typically require human intelligence.

Although not new, the value of 21st-century skills has increased (Schmoker, 2011). Teachers are increasingly recognising that essential concepts and methodologies are crucial for 21st-century learning. Currently, this term is frequently addressed in various forums and discussions and is a prevalent subject in seminars and workshops. The twenty-first century, often known as the Common Era, commenced on January 1, 2001, and will conclude on December 31, 2099. This date is the present year in the Anno Domini calendar. What distinguishes twenty-first-century education from that of the past, necessitating our investment of time, energy, and finances to study, examine, and understand it for our advantage? Schools throughout the twentieth century were considerably different from those of now.

Groups do very little work; most pupils work alone. Educators assess pupils through a summative evaluation system that incorporates specific formative elements, typically represented as a percentage or numerical value. The instructor served as the sole source of information in the teacher-centred classroom. The majority of the learning was confined to a few procedures. The primary objective of the teaching approaches is to facilitate student learning; they do not consider individual differences that are often insignificant, lack relevance, or fail to provide contextual understanding. The majority of cognitive abilities were designed to be unstructured and low-level. During this phase, children received instructions on using technology and were coached through their activities.

Regulations dictated students' self-management, severely limiting their influence over the structure. Academic progress was achieved through single-level education; acceleration was emphasised for gifted and talented pupils; reading, writing, and auditory learning methods predominated; and feedback was limited.

In 2015, the Partnership for 21st Century Learning (P21) produced the Framework for 21st Century Learning to provide a unified educational vision. This paradigm integrates topic knowledge, specialised skills, expertise,

and literacies, delineating the knowledge, abilities, and competences students must attain to succeed in both professional and personal spheres (Ige *et al.* 2024). All students must acquire essential academic knowledge and understanding to apply 21st-century skills. Effective communicators and critical thinkers need to build a foundation of fundamental academic knowledge. Within the framework of teaching foundational knowledge, students must acquire critical thinking, problem-solving, communication, and teamwork, all of which are crucial qualities for success in the modern world.

The Asian Development Bank (2016) states that leaders, educators, and pupils collaborate to establish 21st-century learning. Students are somewhat influenced by the modern, media-rich, instantaneous, dynamic, and captivating electronic and digital environment that allows for instant gratification through communication (Nakrani, 2013). "Millennials," "Neo-Millennials," "Digital Natives," "Digital Children," and "21st Century Learners" are terms that describe contemporary students. They are motivated and involved, acquiring information through digital technology, driven by consistent exposure to various digital media. They are adept at utilising digital media. Students formulate, refine, and evaluate methods alongside materials. Furthermore, they can employ a broader range of cognitive and learning modalities while adhering to moral and ethical standards in their educational pursuits. Feedback is acquired from diverse sources, including peers, educators, and self-assessment.

The research by Salido (2023), entitled "Impact of AI-Powered Learning Tools on Pupil Understanding and Teachers' Performance," examined how the integration of artificial intelligence into education is catalysing a significant transformation in current teaching methodologies and educational practices. This research aims to assess the impact of artificial intelligence-based educational tools, including intelligent tutoring systems and virtual learning environments, on students' academic performance and understanding. The findings indicate that artificial intelligence has the capacity to instigate a significant transformation in education by enabling the personalisation and adaptation of students' learning experiences, thereby enhancing both academic performance and overall comprehension.

However, the ethical implications and infrastructure constraints must be recognised. This illustrates the importance of the judicious integration of artificial intelligence. This research reveals the significant impact that artificial intelligence may have on schooling. This essay will explore the careful attention needed when incorporating artificial intelligence into education, focusing on teaching methods, ethical issues, and the necessary infrastructure. It accomplishes its goal by upholding the core principles that underpin education while encouraging fair and improved educational opportunities.

Sandhya and Varghese (2023) assert that the education sector is merely one of numerous businesses affected by technological advancements. The pedagogical methods and strategies employed by educational institutions worldwide illustrate the integration of technology into education. Blended learning has attracted considerable attention due to its multifaceted nature, which combines conventional face-to-face teaching with online and digital resources. The integration of technology requires processing extensive student data, which can raise ethical dilemmas and concerns due to its sensitive and private nature. This chapter primarily addresses the various aspects of technology integration within the educational system and its beneficial implications for enhancing student learning and engagement, serving as a framework for future research on developing an educational Model that improves teaching and learning environments.

Wang *et al.* (2023) say that instructors are at the forefront of incorporating artificial intelligence (AI) into the classroom. It is expected that they would attain a comprehensive understanding of AI and become proficient lecturers and users. The efficacy of AI-enhanced education depends on its readiness for implementation. This study investigated the interconnections among the four elements of AI readiness: cognition, ability, vision, and ethics, in the context of AI utilisation in education, along with the implications for educators' jobs. Data from 3164 primary school teachers were collected, and cluster analysis, together with partial least squares structural equation modelling, was employed for analysis. This study identified a positive association between ethical considerations and cognition, capability, and foresight in the educational use of AI. The four dimensions of AI readiness showed a positive correlation with AI-enhanced innovation, which, in turn, was positively associated with instructors' job satisfaction.

Nonetheless, perceived AI hazards were negatively correlated with AI preparedness. This study categorised the

teachers into three groups based on their levels of AI preparedness. Instructors with higher AI preparedness also perceived fewer AI-related risks, demonstrated significant AI-driven innovation, and reported greater job satisfaction. Nevertheless, there were no significant differences among teachers of varying socioeconomic origins and genders regarding their readiness for AI and its impact on their profession. This study has substantial implications for developing strategies and policies that facilitate the effective integration of AI into education, while also providing empirical evidence of the importance of AI preparedness in teachers' roles. Although this study shares commonalities with other research, the earlier studies did not examine the effects of technology and artificial intelligence on elementary school pupils.

These technologies can help students monitor their academic progress, develop more efficient study plans, receive personalised instruction, and improve their problem-solving skills. Utilising these tools enables students to identify their educational needs, cultivate self-directed study habits, and enhance their critical and logical reasoning skills. This underscores the substantial influence that artificial intelligence tools may have on student academic performance and elucidates the rationale for their growing use by institutions globally, including those in Nigeria. This study examines the impact of technology and artificial intelligence on primary school pupils in Lagos State.

Purpose of the Study

The purpose of this study is to examine the impact of artificial intelligence (AI) tools on the academic performance of pupils in Primary School in Lagos State. Specifically, the study seeks to:

1. Investigate the impact of Artificial Intelligence (AI) tools on the learning abilities of pupils in Primary School in Lagos State.
2. Examine the impact of artificial intelligence (AI) tools on the problem-solving skills of pupils in Primary School in Lagos State.
3. determine the impact of artificial intelligence (AI) tools on the critical thinking abilities of pupils in Primary School in Lagos State.

Hypotheses

H01: There is no significant relationship between technology and AI integration and learning outcomes among primary school pupils in Lagos State

H02: There is no significant relationship between technology and AI usage and pupil well being in Lagos State

Methodology

This study adopted a descriptive survey research design. The target population for this consisted of the pupils and teachers in Ojo and AmuwoOdofin local government education authorities in Lagos State, and the sample consisted of 220 participants; 180 pupils and 40 teachers respectively (though 210 fully participated in the study) selected from 20 preschool centres (private and public centres) through a multistage sampling technique. The two local government education authorities were involved in the study, and 10 preschool centres (5 private and 5 public) were selected from the LGEAs using a disproportionate stratified random sampling technique. A random sampling technique was adopted to select four teachers from each of the centres already selected (though this was inconsistent, as some centres had more than four, while others had fewer than four). At the end of the selection, 84% of the teachers from private centres and 16% from public centres participated in the study. One research instrument was used for the study titled "Technology and Artificial Intelligence for Pupil and Teachers Questionnaires" (TAIPTQ). The instrument's reliability was tested using Cronbach's alpha, with a coefficient of 0.81. Inferential statistics using the Pearson Product-Moment Correlation coefficient were used to test the null hypotheses at the 0.05 level of significance.

Results

Hypothesis 1

H01: There is no significant relationship between technology and AI integration and learning outcomes among primary school pupils in Lagos State

Table 1: Summary of Pearson Product Moment Correlation Showing Relationship between technology and AI integration and learning outcomes among primary school pupils

Variables	N	Mean	St.D	r	Sig.	Remarks
Technology and IA integration	21235.991	12.001	.561	.000	significant	
primary school learning outcome	212	19.571	6.880			

Table 1 affirms that there is a significant positive relationship between technology and AI integration and learning outcomes among primary school pupils in Lagos State ($r = 0.56$; $p<0.05$). Therefore, the hypothesis 1 is rejected. The positive relationship implies technology integration of AI positively affect pupils learning outcomes. **Hypothesis 2**

$H_0$2: There is no significant relationship between technology and AI usage and pupil wellbeing in Lagos State.

Table 1: Summary of Pearson Product Moment Correlation Showing Relationship between technology and AI usage and pupil well being

Variables	N	Mean	St.D	r	Sig.	Remarks
Technology and IA usage.	212	29.463	10.234	5135	.000	significant
pupils well being	212	14.158	5.183			

Table 2 depicts that there is a significant positive relationship between technology and AI usage and pupils wellbeing in Lagos State ($r = 0.51$; $p<0.05$). Therefore, the hypothesis 2 is rejected. The positive relationship implies that technology and AI usage go together in the primary school pupils wellbeing.

Discussion of Findings

Hypothesis 1 asserts that a significant positive relationship exists between technology and AI integration and learning outcomes among primary school pupils in Lagos State ($r = 0.56$; $p<0.05$). The positive relationship implies that integrating AI technology improves pupils' learning outcomes, suggesting that AI-enhanced classrooms do have a significant effect on teachers' productivity. This result was supported by Wang *et al.* (2023), who assert that when it comes to integrating artificial intelligence (AI) into the classroom, teachers are leading the way. They are anticipated to acquire a sufficient comprehension of AI and become knowledgeable educators and users. The results from hypothesis 2 show a significant positive relationship between technology and AI usage and pupils' wellbeing in Lagos State ($r = 0.51$; $p<0.05$). The positive relationship implies that

technology and AI use go hand in hand with the primary school pupil's well-being. The findings support the findings of Abed and Anupam (2023). The goal is to enable seamless, natural interaction between humans and machines, enabling AI systems to understand and respond to human queries, requests, and commands.

Conclusion

The integration of technology and artificial intelligence (AI) in primary education has significantly transformed the learning environment for young pupils. These advancements have enhanced engagement, personalised learning experiences, and improved access to educational resources. AI-powered tools support differentiated instruction, allowing pupils to learn at their own pace and according to their individual needs. However, the impact is not without challenges. Overreliance on technology can affect social development, reduce physical activity, and create disparities in access among students from different socioeconomic backgrounds. Moreover, concerns about data privacy and the ethical use of AI in education must be addressed. In conclusion, while technology and AI offer tremendous opportunities to enrich primary education, their implementation must be carefully managed. A balanced approach that combines traditional teaching methods with innovative digital tools, guided by educators and supported by policy, will ensure that these technologies truly benefit the holistic development of young learners.

Recommendations

1. School management is to ensure equal access to technology and internet connectivity for all pupils, particularly in underserved areas.
2. The government should offer comprehensive training and professional development opportunities for educators to build their capacity in using AI tools.
3. Educator to encourage pupils to develop critical thinking, problem-solving, and creativity skills through AI-powered tools and projects.
4. Education should regularly assess the impact of AI tools on pupils' learning outcomes and adjust implementation strategies as needed.

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EARLY CHILDHOOD EDUCATION IN RURAL AREAS: UNIQUE, CHALLENGES AND POSSIBLE SOLUTIONS

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Abstract
Early Childhood Education (ECE) in rural areas plays a crucial role in shaping the foundational learning experiences of young children. It does, however, offer special qualities, difficulties, and chances. Close-knit communities, culturally diverse surroundings, and high levels of parental participation are common features of rural ECE settings. Effective early education is hampered by issues such as restricted availability to trained teachers, poor infrastructure, a lack of learning tools, and socioeconomic limitations, notwithstanding these advantages. Technology integration, teacher training programs, better resource allocation, and partnerships between the government and the community are some ways to solve these problems and raise the standard of education in these places. In order to enhance learning results for young children in rural regions, this study examines the distinctiveness of early education in rural areas, identifies important obstacles, and suggests workable solutions.
Keywords: Early Childhood Education, Technology Integration, Teacher Training programs

Introduction

Early childhood education and care provide a crucial foundation for children's holistic development, and influence their cognitive, social, emotional, and physical well-being. According to Li *et al*. (2024), there is a growing recognition of the significance of early childhood education, with an emphasis on integrating educational theory with the design of instructional methods and curricula to encourage comprehensive development across multiple domains. By balancing spiritual, moral, intellectual, imaginative, cultural, emotional, and physical development, holistic education aims to cultivate well-rounded individuals and prepare children for lifelong learning and success (Pillar & Haricharan, 2023; Yaswinda *et al*., 2022). Early childhood, spanning from birth to eight years, represents a period of unique growth and development, during which educational stimuli significantly aid physical and spiritual maturation, ensuring children are well-prepared for subsequent educational stages (Ma'rifah *et al*., 2021; Risnawati *et al*., 2021). The efficacy of early childhood education depends on the quality of educators and their ability to implement child-centred pedagogies that cater to the diverse needs of children, especially those from disadvantaged backgrounds who may face challenges such as malnutrition and poor health, which can hinder their readiness (Gayoso *et. al*., 2024).

Early childhood education in rural areas presents a unique set of challenges and opportunities that call for strategic intervention and careful consideration. Researchers and policymakers alike face an epistemological challenge due to the ambiguity surrounding the definition of "rural" (Stelmach, 2018). The term encompasses a diverse array of geographic, economic, and social contexts, each with its own specific needs and resources (Coady, 2020). Access to early childhood education is not uniform across rural areas, and the quality of education available often lags behind that of urban centres (Ren, 2024). According to Mpahlaand Okeke (2015), disparities in educational outcomes for rural children are caused by variations in funding, infrastructure, teacher education, and parental involvement. To address these disparities, it is necessary to develop custom solutions that make use of local resources, and address systemic inequities, and have a nuanced understanding of the particular difficulties faced by rural communities. Furthermore, the historical context of rural education,

including patterns of segregation, resource allocation, and policy implementation, has shaped the current landscape and continues to influence access to and quality of early childhood education (Mpahla & Okeke, 2015). The absence of comprehensive data on rural early childhood education further exacerbates the problem, hindering efforts to accurately assess needs, track progress, and evaluate the effectiveness of interventions (DeYoung, 1987).

Early childhood education programs are considered universal, promoting positive social-emotional and academic development in children from various backgrounds and often screening for developmental delays or disabilities, initiating services to address specific needs (Huffhines *et. al*., 2023). Early childhood education emphasises the importance of both home learning environments and structured educational programs in shaping children's development, advocating for high-quality experiences and active adult engagement to minimise developmental risks and foster lasting personal, academic, and social benefits.

Literature Review

Research indicates that rural children often enter school less prepared than their urban counterparts, potentially impacting their long-term academic trajectories (Kea, 2009). Factors such as limited access to preschool programmes (Temple, 2009), healthcare services, and nutritious food contribute to this disparity. The social and economic characteristics of rural communities play a significant role in shaping early childhood education experiences (Heflinger& Christens, 2006). According to Lewis *et al*., (2013), families' ability to support their children's development is impacted by obstacles like poverty, unemployment, and limited access to social services in many rural areas. A deficiency in access to digital resources, minimal opportunities for advanced education, and a lack of community support contribute to challenges in education and, as a result, long-term economic stability (Statti & Torres, 2020).

The availability of high-quality early childhood programmes in rural areas is often constrained by funding limitations, making it difficult to attract and retain qualified teachers and provide adequate resources. The shortage of qualified teachers in rural areas is a persistent problem, with many rural schools struggling to compete with urban schools in terms of salaries, benefits, and professional development opportunities. This can lead to high teacher turnover rates, disrupting the continuity of education for young children. Moreover, the curriculum in rural schools may not always be aligned with the specific needs and interests of rural children, potentially leading to disengagement and decreased academic motivation (Li *et al*., 2025).

In rural areas, parents may face obstacles such as a lack of transportation, childcare responsibilities, or a lack of education themselves that limit their involvement in their children's education. Gazdiyeva *et al*. (2020) say that the challenges are made worse by the informational isolation of rural educational institutions, which prevents students from being exposed to cutting-edge resources and trends. The integration of technology in rural schools presents both opportunities and challenges (Mustafa *et. al*., 2024). Rural schools frequently lack the infrastructure and technical support necessary to effectively implement technology-based programmes, despite the fact that technology can help close the access gap to resources and educational opportunities (Mustafa *et. al*., 2024) (Kormos & Wisdom, 2021).

Challenges in Rural Early Childhood Education

Accessibility and Availability of Resources

In rural districts, technology acquisition is directly impacted by budget constraints, which result in unequal access to technology (Sundeen & Sundeen, 2013). The digital divide further compounds difficulties, as many rural families lack access to reliable internet and technology at home, limiting their ability to support their children's learning (Powers *et. al*., 2020). Additionally, competing priorities and limited tax bases make it difficult for rural schools to obtain funding for early childhood programmes.

Teacher Training and Professional Development

Teachers in rural areas may not have access to professional development opportunities of a high standard that are tailored to the particular requirements of rural schools and communities. This can lead to a lack of confidence and expertise in implementing effective early childhood practices. Additionally, teachers in rural areas may be

less able to collaborate with colleagues and keep up with the latest research and best practices due to their professional isolation (Viloria *et. al*., 2021). Due to a shortage of elementary and secondary teachers in rural communities, many teachers accept special education positions with provisional licences (Knapczyk *et. al*., 2001). In addition, research shows that teachers in rural areas would like more professional development opportunities that address classroom management and instructional strategies.

Teacher Training and Qualifications

The particular considerations pertaining to teacher training and qualifications compound these difficulties. Attracting and retaining qualified teachers in rural areas is a multifaceted challenge, influenced by factors ranging from compensation and career advancement opportunities to the availability of suitable housing and community amenities (Handal *et. al*., 2013). Rural schools often struggle to compete with urban schools in terms of salaries, benefits, and professional development opportunities (Heeralal, 2014). This disparity may cause qualified teachers to leave for better opportunities elsewhere or discourage them from seeking employment in rural areas. In addition, teachers may experience a sense of unpreparedness and lack of support as a result of the absence of adequate teacher education programmes that are designed to address the particular difficulties that rural education faces. The difficulties encountered in rural early childhood education are exacerbated by a lack of parental involvement and community support. In rural areas, barriers to transportation, childcare responsibilities, and cultural differences can make it difficult to involve parents in their kids' education. Additionally, many rural parents may lack the time or resources to actively support their children's education at home or participate in school activities. To leverage resources and expertise to support early childhood education initiatives, it is essential to establish partnerships with stakeholders, community organisations, and other organisations.

Unique Challenges in Rural Areas

Socioeconomic Disparities and Family Support

Socioeconomic disparities are often more pronounced in rural areas, impacting children's access to quality early childhood experiences and resources (Ekren *et. al*., 2025). Children's development and well-being can be negatively impacted by poverty, unemployment, and limited access to healthcare for many rural families. According to Orgera *et al*. (2023), children from low-income families may not have access to nutritious food, stable housing, or healthcare, which can hinder their cognitive, social, and emotional development. Parents may be preoccupied with meeting their children's basic needs or lack the time and resources to support their children's education at home, both of which can limit parental involvement in their children's education.

Cultural and Linguistic Diversity

Rural areas are becoming increasingly diverse, with growing populations of immigrant and refugee families who may have unique cultural and linguistic needs. In rural areas, early childhood programmes need to be culturally sensitive and inclusive, supporting children and families from all walks of life. This necessitates that educators learn about various traditions, languages, and cultures and adapt their teaching methods to meet the requirements of all students. In rural communities, the lack of culturally sensitive care is a major barrier to seeking mental health care (Berryhill *et. al*., 2021).

Funding and Resource Allocation

Limited funding and resource allocation pose significant challenges for early childhood education programs in rural areas, impacting program quality, staffing, and infrastructure. It is difficult for rural schools and childcare centers to offer high-quality services and to recruit and retain qualified staff because they frequently operate on limited budgets. Teachers' access to essential resources like learning materials, technology, and opportunities for professional development may also be restricted by a lack of funding.

Possible Solutions and Strategies

Leveraging Technology and Innovative Approaches

In rural areas, gaps in access to resources and services for early childhood education can be bridged through technology. According to Yang *et al*. (2018), educational apps, virtual classrooms, and online learning platforms can give children access to high-quality learning opportunities regardless of where they live. Telehealth and teletherapy services can overcome transportation and distance barriers to connect children and families in rural areas with specialists and early intervention providers (Arnold, 2024).

Mobile Early Childhood Education Programs

In rural areas that are far from services, mobile early childhood education programs can provide services directly to children and their families. Mobile classrooms, equipped with learning materials and resources, can travel to different locations within a rural community, providing on-site early childhood education services. Additionally, these programs may provide services for family support and education, giving parents the tools they need to help their children learn and grow at home.

Technology-Enhanced Learning

For children in rural areas, incorporating technology into early childhood education can improve outcomes. Teleconsultations and remote training programs may not be as effective even when internet access is available due to urban-based consultants and educators' lack of rural knowledge (Totten *et al*., 2022).

Community-Based Initiatives

In rural areas, community-based initiatives can support early childhood education by utilising local expertise and resources. Partnerships between schools, community organisations, healthcare providers, and local businesses can create a network of support for children and families, providing access to a wide range of services and resources. Early childhood education programs can be tailored to meet the specific requirements and priorities of the local community, thanks to these collaborative efforts (Rutherford *et. al*., 2023).

Professional Development and Support for Teachers

Improving the quality of early childhood education necessitates providing teachers in rural areas with ongoing professional development and support. Training programs, mentoring opportunities, and peer support networks can help teachers address the unique challenges they face in rural classrooms, update their knowledge and skills, and remain current on best practices (Smith *et. al*., 2021). Information and communication technologies (ICT) and distance education can be utilised to enhance the learning opportunities available to rural educators (Robinson, 2008). According to Quinn *et al*. (2020) and Robinson (2008), an emerging alternative to face-to-face arrangements for teacher continuing education is online professional learning and development, which can connect to rural contexts through considerations of relevance, collaboration, and future focus.

Culturally Responsive Curriculum Development

Developing culturally responsive curricula that reflect the experiences, values, and traditions of rural communities is crucial for engaging children and promoting a sense of belonging and identity. Curriculum materials should incorporate local history, culture, and folklore, and should be designed to be relevant and meaningful to children from diverse backgrounds. This can be achieved through the inclusion of culturally diverse books, toys, and materials, as well as activities that celebrate different cultures and traditions. Mental health providers who practice in rural settings can train community members who work with rural youth to improve mental healthcare delivery in low-resource areas (Graves *et. al*., 2024).

Conclusion

Early childhood education in rural areas is a critical investment in the future of our society. By addressing the unique challenges and implementing evidence-based strategies, we can ensure that all children, regardless of where they live, have the opportunity to reach their full potential. Addressing the challenges in early childhood education and the lack of qualified health professionals requires a multi-faceted approach that considers various factors.

To attract and retain skilled health workers in rural areas, concerted efforts should focus on improving the work environment, providing ongoing training opportunities, and addressing motivational factors. The acquisition and retention of qualified teachers, the provision of sufficient resources and infrastructure, and the creation of a curriculum that is specifically tailored to rural communities are all essential components of any successful solution. Collaborative efforts between educators, policymakers, community members, and families are essential to creating a supportive and enriching learning environment for young children in rural areas. Alternative healthcare delivery models that encourage diverse, interdisciplinary provider combinations should be the focus of public policy on the trajectory of the healthcare workforce. A comprehensive strategy that takes into account personal considerations, professional support, and financial incentives is necessary to bring healthcare professionals to rural areas. Providing adequate resources and infrastructure, such as well-equipped classrooms, learning materials, and technology, is essential for creating a high-quality learning environment. Teachers in rural areas frequently face the challenge of instructing students from a variety of backgrounds and with varying learning needs, necessitating the need to modify their methods of instruction and provide individualised assistance. Interprofessional education and training initiatives can help bridge the gap in rural healthcare by preparing health science students to work collaboratively in rural settings. Implementing innovative approaches, such as mobile learning centres, technology-based interventions, and community-based programs, can help overcome geographical barriers and reach children in remote areas.

Suggestions

1. Training programs should be updated with the latest knowledge and technologies, and include practical training in rural communities to optimise the educational experience.
2. Training should emphasise the importance of understanding cultural beliefs and practices to provide appropriate and respectful care.
3. The curriculum should be relevant to the local context, incorporating elements of rural life, culture, and traditions to make learning more engaging and meaningful for children.
4. Provision of in-service training to healthcare providers can enhance their communication skills with individuals with disabilities.
5. Governments and relevant organisations should develop targeted interventions to improve perceptions and attitudes towards rural health services.

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THE ROLE OF SOCIAL CAPITAL AND COMMUNITY PARTICIPATION IN SCALING UP EARLY CHILDHOOD DEVELOPMENT AND EDUCATION IN LAGOS STATE

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Abstract
The objective of the study is to examine the role of Social Capital and Community Participation in Scaling up Early Childhood Development and Education in Lagos State. A Survey research design using the descriptive approach was employed in this study as 300 Level students in the departments of Early Childhood Care Education in Lagos State University (LASU), University of Lagos (UNILAG) and Lagos State University of Education (LASUED) formed the population of the study. A total of 150 Undergraduates from the above-named institutions formed the sample size. A self-structured instrument titled the Role of Social Capital and Community Participation in Scaling-up Early Childhood Development and Education Questionnaire (RSCCPSECDEQ) on a 4-point Likert Scale format was used to generate data. The result revealed that trust, networking, family ties and collaboration, among others, encourage scaling up Early Childhood Development. It recommended, among others, that school owners and the government should endeavour to build human relationships with parents, children and other stakeholders that help drive productivity and scaling up of ECDE programmes.
***Keywor*ds**: Social Capital, Community Participation, Scaling-up, Early Childhood Development Education, Caregivers, Pupils

Introduction

Early Childhood Development and Education (ECDE) has increasingly gained recognition as a foundational pillar for improving educational outcomes and promoting equitable socio-economic development worldwide. The early years of a child's life are critical for cognitive, social, and emotional development, which strongly influence later academic success and life opportunities. Globally speaking, investment in ECDE is considered a strategic intervention for reducing educational disparities and fostering human capital (UNICEF, 2021). However, effective implementation of ECDE programs depends not only on government policies and funding but also on the active participation and collaboration of communities and other local stakeholders (Engle *et. al.*, 2011).

In the Nigerian context, despite policy frameworks aimed at expanding access to quality ECDE, the sector faces significant challenges, including inadequate infrastructure, limited financial resources, and uneven quality of services (Federal Ministry of Education, 2020). Nigeria's diverse socio-cultural and economic landscape further complicates the uniform delivery and scalability of ECDE programs (Ogunyemi & Olajide, 2019). Many studies emphasise that government efforts alone are insufficient for sustainable ECDE development; rather, community participation and social networks play crucial roles in resource mobilisation, accountability, and contextual adaptation of programs (Eze, 2018; Adebayo & Salami, 2021).

The theoretical lens of social capital, especially as conceptualised by Pierre Bourdieu (1986), offers valuable insights into how social relationships, trust, and collective norms influence educational initiatives. Bourdieu's distinction between bonding social capital (close-knit ties within homogeneous groups) and bridging social capital (connections across diverse groups) helps explain the mechanisms through which communities

either enable or hinder ECDE efforts. Empirical studies in sub-Saharan Africa have shown that communities exhibiting strong social capital are better able to engage parents, educators, local leaders, and civil society actors in educational development, thus enhancing program reach and sustainability (Munyua, 2015; Abebe, 2017).
In Nigeria, research on social capital and education indicates that traditional leaders and informal social institutions often serve as critical mediators in mobilising grassroots support for schooling and child welfare programs (Olaniyan & Obanya, 2022). Trust in local institutions and social networks influences parents' willingness to participate in ECDE activities and contribute to shared responsibility for children's learning environments (Chinweuba &Udeani, 2020). Conversely, communities with weak social ties and low institutional trust struggle with resource pooling, effective communication, and program continuity (Adeyemi & Ojo, 2019).

Beyond Nigeria, comparative studies from other developing countries demonstrate that integrating community participation within ECDE frameworks significantly improves educational access and quality. For example, in Kenya, community involvement through social networks has been linked to increased enrollment and parental engagement in ECDE centres (Ndirangu & Kombo, 2016). Similarly, in South Asia, leveraging social capital has helped in overcoming cultural and economic barriers to early childhood education (Singh *et al.*, 2019).

The relationship between teacher collaboration, trust, family ties and professional networks plays a foundational role in the effectiveness of early childhood education (ECE). Collaborative teaching allows educators to share responsibilities, reflect on pedagogical strategies, and collectively respond to the developmental needs of young children. Trust serves as the underlying mechanism that makes such collaboration effective; when teachers trust one another, they are more likely to engage in open communication, share vulnerabilities, and support innovation in the classroom (Sims &Waniganayake, 2021). This sense of professional trust fosters emotional safety and increases teacher efficacy, ultimately contributing to more cohesive and responsive learning environments for children. The presence of trust-filled collaboration also helps in creating consistency in educational approaches, which is particularly important for the developmental continuity needed in early childhood.

In addition, strong family educator relationships and professional networks amplify the benefits of collaborative and trust-based practices in ECE. Close ties between families and educators create a bridge between home and school, allowing for more personalised and culturally responsive approaches to learning. Research shows that when families and educators maintain open, respectful, and trusting communication, children display higher levels of engagement and developmental progress (Tveit, 2021). Furthermore, access to professional networks enables educators to learn from peers, receive mentorship, and participate in communities of practice that enhance their professional knowledge and emotional resilience (Boyd, 2021). These interconnected relationships among teachers, families, and broader educational networks form a robust social fabric that supports the holistic development of children and the sustainability of quality early learning programs.

According to Adebayo and Salami (2021), community participation plays a vital role in the development of early childhood education in Nigeria. They noted that local communities serve as the first point of contact for children in many ways, as many values and vices are learnt at this time in their developmental phase. The involvement of the community also influences the accessibility and quality of their education. Through contributions such as building infrastructure, providing learning materials and training, supporting teacher recruitment, help bridge the gap left by limited government resources. Traditional leaders, parents and local organisations also play crucial roles in advocating for early education, raising awareness of its benefits, and fostering a sense of ownership that promotes sustainability and accountability within educational initiatives (Adebayo & Salami, 2021).

Moreover, since community engagement encourages culturally relevant learning, which is essential in a diverse country like Nigeria, incorporating indigenous knowledge, languages and practices, the communities ensure that education is meaningful and resonates with children's lived experiences. Parental involvement, in particular, has been shown to enhance children's learning outcomes, as it reinforces the importance of education at home. When communities actively support early childhood programs, they create a collaborative

environment where educators, families, and stakeholders work together to nurture holistic development and lay a strong foundation for lifelong learning.

Community participation plays a crucial role in enhancing early childhood development education (ECDE) in Nigeria by fostering local ownership, improving resource availability, and ensuring cultural relevance in learning. Communities contribute in various ways, such as donating land for schools, constructing classrooms, providing teaching materials, and supporting local caregivers and teachers. These efforts help to bridge gaps left by limited government funding and ensure that ECDE programs are grounded in the lived experiences of the children they serve. According to Ajayi (2021), collaborative engagement among stakeholders, including parents, traditional leaders, and local organisations, significantly improved access to quality early childhood education in selected regions of southwestern Nigeria, emphasising that education thrives when communities are actively involved in shaping and supporting it.

In addition to material and infrastructural support, community involvement enhances monitoring and accountability in ECDE programs. Local participation ensures that education initiatives are better aligned with the needs of children and families, promoting greater enrollment, retention, and developmental outcomes.

The implication for policymakers and practitioners seeking to design context sensitive education strategies that leverage existing social networks and informal institutions can influence development. Strengthening bonding and bridging social capital within communities can foster trust, facilitate cross-sector collaborations, and ultimately enhance the effectiveness and scalability of ECDE in resource-limited settings. By grounding educational reform in the social fabric of Lagos State and Nigeria, ECDE initiatives stand a better chance of achieving long-term impact and equity.

Statement of Problem

Despite the vital role of Early Childhood Development and Education (ECDE) in lifelong learning and socio-economic growth, Nigeria faces significant challenges in scaling up ECDE programs. Government efforts to expand access and improve quality are hindered by inadequate infrastructure, limited funding, and uneven service delivery across diverse socio-cultural contexts. A critical yet under-explored factor is the role of social capital and community participation, which can mobilise resources, enhance accountability, and adapt programs locally. However, little is known about how bonding and bridging social capital affect community involvement and the scalability of ECDE initiatives in Nigeria. The current study, therefore, situates itself at the intersection of sociological theory and practical educational reform by exploring how social capital and community participation affect the scaling up of ECDE in Nigeria. This research delves into the lived realities of diverse stakeholders, including parents, educators, traditional leaders and NGOs, as it aims to fill gaps in understanding how culturally embedded practices and informal leadership can be harnessed to promote sustained local ownership and accountability in ECDE programming.

Objectives of the Study

The purpose of this study is to determine how Social Capital and Community Participation can be employed in Scaling-up Early Childhood Development and Education in Lagos State. Specifically, the study is out to:

i. Assess how Social Capital attainment can be used to scale up Early Childhood Development and Education in Lagos State
ii. Evaluate the impact of Community Participation in Scaling up Early Childhood Development and Education in Lagos State

Research Questions

i. How can Social Capital attainment be used to scale up Early Childhood Development and Education in Lagos State
ii. What is the impact of Community Participation in Scaling up Early Childhood Development and Education in Lagos State

Hypotheses

A null hypothesis was formulated and tested at a 0.05 significance level.

H1: There is a significant relationship between Community Participation in Scaling up Early Childhood Development and Education in Lagos State

Methodology

A descriptive survey research design was employed in the study. This design seeks to study a large population to describe the attributes observed in the sampled participants. The population comprised 300 Level students in the Department of Early Childhood Care Education, Lagos State University (LASU), University of Lagos (UNILAG) and Lagos State University of Education (LASUED). A simple random sampling technique was employed in the selection of 50 students each from the three identified departments in the institutions to form a sample of 150 students of Early Childhood Care Education. A self-structured instrument titled the Role of Social Capital and Community Participation in Scaling-up Early Childhood Development and Education Questionnaire (RSCCPSECDEQ) was used to generate data. This instrument contains 25 items on 4 Likert scale types of Strongly Agree (SA), Agree (A), Disagree (D) and Strongly Disagree (SD) respectively. The instrument was content validated by two experts in Early Childhood Care Education, Department of Early Childhood Care Education and Primary Education, Lagos State University of Education, Noforija, Epe, Lagos State, as a split-half reliability index of 0.876 was derived from 45 undergraduates in Federal College of Education, Akoka, Lagos State, which is not part of this study. Descriptive statistics of mean and standard deviation was used to answer research questions while Pearson Product-Moment Correlation analysis and inferential statistics was used to test hypothesis at a 0.05 significance level.

Results

Research Question1: How can Social Capital attainment be used to scale up Early Childhood Development and Education in Lagos State

Table 1: Respondents Response on how Social Capital attainment can be used to Scale-up Early Childhood Development and Education

S/N	Items	SA	A	D	SD	Mean	SD	Remarks
1	Strong community networks among parents enhance access to Early Childhood Development and Education services.	280	250	30	40	3.42	.45	Agree
2	Collaboration between ECDE centres and community organizations supports the expansion of early childhood programmes	125	320	78	77	3.18	.67	Agree
3	Trust among parents, caregivers, and teachers improves participation in Early Childhood Development and Education activities	268	278	24	30	2.95	.61	Agree
4	Parent associations contribute resources that help scale up Early Childhood Development and Education programmes	324	200	23	53	3.01	.59	Agree

5	Partnerships with religious and traditional institutions increase enrolment in ECDE centres	237	275	76	12	2.76	.73	Agree
6	Shared community values promote sustained involvement in Early Childhood Development and Education programmes	324	164	34	78	3.27	.60	Agree
7	Social connections between school leaders and policymakers facilitate improved funding for ECDE	325	149	33	93	2.88	.56	Agree
8	Peer support and mentoring among caregivers improve the quality of Early Childhood Development and Education as programmes expand	345	139	82	34	3.10	.54	Agree
9	Community volunteering plays a significant role in sustaining and scaling up ECDE initiatives	236	299	42	23	2.63	.59	Agree
10	Information sharing through social networks increases awareness and utilization of Early Childhood Development and Education services	45	79	219	257	2.21	.61	Disagree
Criterion mean *2.50								

Source: (Researcher work, 2025)

Data from Table 1 indicate that respondents generally **agreed** that social capital plays a significant role in scaling up ECDE. This is evidenced by the fact that **nine out of the ten items recorded mean scores above the criterion mean of 2.50**, signifying positive perceptions among respondents.

Strong community networks among parents were perceived to enhance access to ECDE services, as shown by the highest mean score (mean= 3.42). This suggests that close relationships and cooperation among parents facilitate enrolment, information sharing, and collective support for early childhood programmes. Similarly, collaboration between ECDE centres and community organizations (mean= 3.18), trust among parents, caregivers and teachers (mean= 2.95), and the contribution of parent associations to resource provision (mean= 3.01) were all agreed upon as important mechanisms through which social capital supports programme expansion.

It also show that partnerships with religious and traditional institutions (mean= 2.76), shared community values (mean= 3.27), and social connections between school leaders and policymakers (mean= 2.88) contribute to sustained participation, improved funding, and policy support for ECDE initiatives. In addition, peer support and mentoring among caregivers (mean= 3.10) and community volunteering (mean= 2.63) were perceived as enhancing programme quality and sustainability as ECDE scales up.

However only item 10, which examined information sharing through social networks, recorded a mean score below the criterion mean (mean= 2.21), indicating **disagreement** among respondents. This suggests that although social relationships exist, they may not be effectively utilized for disseminating ECDE-related information, possibly due to weak communication structures or limited access to digital and organized information channels.

Research Question 2: What is the impact of Community Participation in Scaling up Early Childhood Development and Education in Lagos State

Table 2: Respondents Response on Impact of Community Participation in Scaling-up Early Childhood Development and Education

S/N	Items	SA	A	D	SD	Mean	SD	Remarks
1	Active community involvement increases enrolment in Early Childhood Development and Education centres	267	255	38	40	3.36	.59	Agree
2	Community participation contributes to the provision and maintenance of ECDE facilities and learning materials.	225	289	45	41	3.12	.61	Agree
3	Parents' involvement in school activities enhances the quality of Early Childhood Development and Education programmes	255	262	49	34	2.97	.69	Agree
4	Community support improves the sustainability of Early Childhood Development and Education initiatives.	264	220	23	34	3.05	.76	Agree
5	Participation of community leaders strengthens advocacy for the expansion of ECDE services	237	275	76	12	2.74	.87	Agree
6	Community collaboration with ECDE centres promotes equitable access to Early Childhood Development and Education	324	164	34	78	3.21	.55	Agree
7	Volunteer activities by community members positively influence the scale-up of Early Childhood Development and Education programmes	85	113	102	300	2.32	.42	Disagree
8	Community participation enhances monitoring and accountability in the implementation of ECDE programmes	345	139	82	34	2.68	.75	Agree
9	Involvement of community-based organizations improves resource mobilization for Early Childhood Development and Education	121	44	106	329	2.41	.52	Disagree
10	Community participation fosters shared ownership and commitment to the growth of Early Childhood	78	101	174	247	2.18	.46	Disagree

Source: (Researcher work, 2025)

The results presented in Table 2 above reveal that respondents generally **agreed** that community participation has a **positive impact** on the scaling up of ECDE. This is supported by the fact that **seven out of the ten items recorded mean scores above the criterion mean of 2.50**.

Specifically, active community involvement was perceived to significantly increase enrolment in ECDE centres, as reflected by the highest mean score (mean= 3.36). Respondents also agreed that community participation contributes to the provision and maintenance of ECDE facilities and learning materials (mean= 3.12) and that parents' involvement in school activities enhances the quality of ECDE programmes (mean= 2.97). Furthermore, community support was found to improve the sustainability of ECDE initiatives (mean= 3.05), while the participation of community leaders was seen as strengthening advocacy for the expansion of ECDE services (mean= 2.74).

In addition, collaboration between communities and ECDE centres was perceived to promote equitable access to early childhood education (mean= 3.21), and community participation was also agreed to enhance monitoring and accountability in the implementation of ECDE programmes (mean= 2.68). These findings suggest that collective efforts, leadership involvement, and collaborative practices within communities play a crucial role in expanding ECDE services.

However, three items recorded mean scores below the criterion mean, indicating areas of weakness. Respondents disagreed that volunteer activities by community members positively influence the scale-up of ECDE programmes (mean= 2.32). Similarly, the involvement of community-based organizations in resource mobilization (mean= 2.41) and the fostering of shared ownership and commitment through community participation (mean= 2.18) were not strongly supported by respondents. These results suggest that while community participation exists, it may not yet be effectively structured or adequately coordinated to promote volunteering, organizational support, and a strong sense of ownership.

H_1: There is significant relationship between Community Participation in Scaling up Early Childhood Development and Education in Lagos State

Table 3: Correlation Showing Relationship between Community Participation in Scaling- up Early Childhood Development and Education in Lagos State

Variables	N	Mean	SD	P	r-cal.	Sig.	Decision
Community Particip ation		2.89	0.54				
	150			0.05	0.776	0.003	Reject H_2
ECDE		3.66	0.71				
Total	**150**						

Source: Fieldwork, (2025)

From Table 3 above it reveals that Community participation recorded a lower mean and standard deviation values of 2.89 and 0.54 as against Early Childhood Development and Education that recorded a higher mean and standard deviation value of 3.66 and 0.71. With r-calculated value of 0.776 which shows a positively strong relationship between them and P >0.05, the null is significant and by implication the null rejected.

Discussion of Findings

For research question 1: The findings reveal that social capital attainment, particularly bonding, bridging and linking social capital, can be effectively used to scale up Early Childhood Development and Education through community networks, institutional partnerships, shared values and collective action. The lone area of weakness highlights the need to strengthen information-sharing mechanisms within social networks to maximise the benefits of social capital for ECDE expansion. Social capital contribute in the scaling up of Early Childhood Development and Education in Lagos State. The social capital component is one essential aspect of human

endeavour. The outcome of this study is in consonance with that of Sims and Waniganayake (2021) that teacher collaboration, trust, family-ties and professional networks plays a foundational role in the effectiveness of early childhood education (ECE). Collaborative teaching allows educators to share responsibilities, reflect on pedagogical strategies, and collectively respond to the developmental needs of young children. Trust serves as the underlying mechanism that makes such collaboration effective; when teachers trust one another, they are more likely to engage in open communication, share vulnerabilities, and support innovation in classrooms, thereby scaling up Early Childhood Education.

With respect to research question 2: The findings indicate that community participation has a generally positive impact on scaling up Early Childhood Development and Education in Lagos State, particularly in areas of enrolment, infrastructure support, sustainability, access, and accountability. Nonetheless, the observed gaps highlight the need for deliberate strategies to strengthen volunteer engagement, enhance the role of community-based organisations, and promote shared ownership to maximise the impact of community participation on ECDE scale-up. The outcome of this study conforms with that of Deshi and Innocent (2025), who stated that community participation has been shown to have a generally positive impact on scaling up Early Childhood Development and Education in Nigeria by enhancing support for school programmes, improving educational quality, and fostering inclusive ownership of educational initiatives. This aligns with broader findings in educational development literature, which suggest that active involvement of parents and local stakeholders contributes to the provision of learning materials, school infrastructure and a conducive learning environment, and other factors critical for expanding early education services. As such, structured community participation serves as a catalyst for resource mobilisation, shared responsibility, and sustained growth of ECDE programmes in Nigerian contexts.

Result from hypothesis one: This reveals that community participation plays a crucial role in enhancing early childhood development education (ECDE). This finding conforms to the study by Ajayi (2021), who stated that through collaborative engagements and community contributions, to the scaling up of ECDE Programmes can come by way of donating land for schools, constructing classrooms, providing teaching materials and supporting local caregivers and teachers. These efforts help to bridge gaps left by limited government funding and ensure that ECDE programs are grounded in the lived experiences of the children they serve. Through these measures of community participation and collaborative engagement among stakeholders, including parents, traditional leaders and local organizations go a long way to significantly improve access to quality early childhood education in the state. Also, Duruh (2021) found that schools that benefited from strong community engagement recorded improved learning outcomes due to increased availability of learning resources and better teacher motivation. These findings highlight the importance of mobilising communities not only as beneficiaries but as active partners in the planning, implementation, and evaluation of early childhood education. Their involvement is essential for building sustainable, context-specific solutions that foster holistic child development in Nigeria.

Conclusion

This study was carried out to investigate Social Capital and Community Participation in Scaling-Up Early Childhood Development Education in Lagos State. Upon execution, the study concluded that for effective attainment of Scaling-up Early Childhood Development Education in the state, components like Trust, Establishment of Network and relationships, Collaboration among educators, Family-ties and Community participation must be improved and maintained so that Social Capital can be met. Also Community participation must be well-cultured as it's directed towards the enhancement of Early Childhood Education Development.

Recommendations

Among others, the study presented the following recommendations:

1. School owners and the government should endeavour to build human relationships with parents, children and other stakeholders that can drive productivity and Scale-up of ECDE programmes.
2. Periodic trainings and staff development programmes should be organised for Teachers and Caregivers on the dynamics essential for effective implementation of Early Childhood Development Education.

3. Communities should be saddled with certain responsibilities targeted at the development of Early Childhood Care Education Programmes in communities where these schools are located

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TRANSFORMING EARLY CHILDHOOD EDUCATION THROUGH INTEGRATION OF SECURITY EDUCATION

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Abstract
The quality of a nation's educational system is a key determinant of its development, and no nation can rise above the educational capacity of its citizens. Early childhood education (ECE), as the foundational stage of the educational field, plays a critical role in shaping children's cognitive, emotional, and social development. It is at this stage that lifelong habits, values, and learning patterns are formed. As societal threats and security challenges increasingly affect even the youngest populations, there is a pressing need to incorporate security education into early learning environments. Introducing children to age-appropriate concepts of personal safety, environmental awareness, and emergency response can significantly enhance their ability to recognise and respond to potential dangers. This paper explores the imperative of integrating security education into ECE programs as a way of transforming early childhood education, outlines key safety themes suitable for preschool learners, and recommends strategies for embedding security education into the early childhood curriculum. The paper concludes that prioritising security education at the preschool level is essential for fostering a generation of safety-conscious and resilient individuals.
Keywords: Security Education, Preschool, Early Childhood, Safety, Child-centred

Introduction

There is an increasing parental expectation for children to receive high-quality education from the earliest years, with the aim of laying a strong foundation for future academic achievement and lifelong development. The early childhood period is widely recognised as a critical window for brain development, learning, and social formation. Studies indicate that a larger percentage of a child's brain development occurs before the age of five, emphasising the importance of early experiences in shaping cognitive and emotional outcomes (Akpan, 2021; Hirokazu, 2013). As such, the quality and nature of stimulation, care, and learning environments during these formative years significantly influence children's ability to thrive. This growing awareness has heightened demand for early childhood education (ECE) programs that are not only academically enriching but also safe, nurturing, and responsive to the holistic needs of young learners. Amidst growing concerns about child vulnerability and exposure to risks within school and community settings, there is an urgent need to ensure that ECE programs integrate structured and functional security education. Such integration is essential for creating environments where children feel safe, are aware of potential threats, and are equipped with age-appropriate strategies for personal safety. Quality early learning, therefore, must encompass both academic readiness and foundational security awareness to fully support children's well-being and development.

Early childhood education is the education given to children prior to entering primary schools (NPE, 2013). This is also the education given to children between 0 and 5 years. This type of education is given in preschools, which include crèche, playgroups, kindergartens or nursery schools. In fact, the years from birth to age 5 are viewed as a critical period for developing the foundations for thinking, behaving, and emotional well-being. Child development experts indicate it is during these years that children develop linguistic, cognitive, social, emotional, and regulatory skills that predict their later functioning in many domains (Woolfolk & Perry, 2012; Trawick-Smith, 2014). Due to the demands of daily living, parents nowadays seek a safe, secured and

hygienic place to put their children while at work.

In the current socio-political climate, safeguarding children at home and in school has become an increasingly urgent priority. The responsibility for ensuring children's safety rests not only with parents but also with caregivers and educators, who must provide continuous guidance and vigilance (UNICEF, 2020). In Nigeria, the rising incidence of insecurity in educational settings is both alarming and persistent. Notable incidents such as the abduction of the Chibok schoolgirls in 2014, and the subsequent kidnappings in Kankara, Katsina State and Kagara, Niger State. (Human Rights Watch, 2021) The recent Benue massacre reflects a broader trend of targeted violence against children. These high-profile cases are compounded by numerous underreported instances of abuse, including rape, child labour, and physical or emotional maltreatment (National Population Commission & ICF, 2019). Together, these factors create an environment of fear and instability that undermines children's well-being and learning. One strategic response to this growing threat is the integration of security education into the early childhood programs. Introducing young learners to age-appropriate concepts of personal safety, environmental awareness, and risk prevention can empower them to navigate their surroundings more confidently. Anyanwu (2018) noted that fostering safety consciousness from an early age is a critical step towards mitigating the pervasive risks children face today.

Promoting security consciousness in children from an early age is essential for equipping them with the skills and mindset needed to navigate an increasingly complex and insecure world. Security education, when introduced at the foundational stage of learning, fosters a lifelong awareness of personal safety, threat detection, and responsible behaviour (Salau,2012; Akpan, 2021). The philosophy of "catch them young" emphasises the need to begin this process early, ensuring that children internalise safety practices before harmful habits or vulnerabilities are formed (Longjohn, 2019).

Exposing children to security education in their formative years enables them to develop a sense of responsibility for their own safety and that of others as they grow. Anyanwu (2018) opined that early exposure to security principles, such as recognising suspicious objects or people, interpreting basic road signs, reporting threats to trusted adults, and understanding how to protect personal belongings, lays the groundwork for both immediate protection and future civic responsibility. However, findings from studies that visited several early childhood centres reveal significant gaps in children's security knowledge (Finkelhor & Dziuba-Leatherman, 2014; Livingstone, Mascheroni & Staksrud, 2017; Martínez & Bonilla, 2019). Many preschoolers are unable to identify road safety symbols, making it difficult for them to crossroads safely. Others exhibit limited awareness of how to respond to unfamiliar individuals, dangerous objects, or threatening situations in their environments. Similarly, many children show little understanding of how to care for or safeguard personal items like books, writing tools and bags.

These observations point to a pressing need to integrate structured and developmentally appropriate security education into early childhood programs. Udin (2014) reported that children who are systematically taught safety practices grow with a heightened sense of alertness and resilience. Embedding these concepts into everyday learning experiences not only supports children's immediate well-being but also contributes to long-term behavioural change and a reduction in vulnerability to exploitation, violence, or preventable harm.

What is Security Education?

Security refers to a state of being free from danger, fear, or anxiety, and possessing the confidence that comes with protection and stability. It encompasses measures designed to safeguard individuals, communities, and nations against threats such as crime, violence, loss, or disruption Salau, 2012; (Udin, 2014). posit that security implies the guarantee of safety and freedom from harm that individuals enjoy within a society, enabling them to live, work, and interact without fear or intimidation.

Security education, therefore, can be defined as the structured process of equipping individuals with the knowledge, skills, and awareness necessary to identify, prevent, and respond appropriately to threats or breaches of safety. It fosters a sense of security consciousness among citizens, enabling them to protect themselves, their immediate environments, and the larger society. Akpan (2021) describes security education as a deliberate effort to inculcate in learners the values, behaviours, and practical competencies required to function safely in a world increasingly challenged by insecurity. When introduced early, particularly in childhood education, it forms the

foundation for responsible citizenship and community resilience.
Security education in early childhood is the introduction of children to simple, age-appropriate rules concerning safety, crime prevention, and protection of personal belongings. Concepts such as risk awareness, recognising unsafe objects or strangers, and taking precautionary actions like staying in safe zones or asking for help, become part of what they learn (Martínez & Bonilla, 2019).
Teaching security education in early childhood serves as a foundational strategy for developing long-term security consciousness in individuals. When children are introduced to security principles at an early age, they gradually internalise these values and practices, and these can shape their attitudes and behaviours into adulthood. Early exposure enables them to become more aware of their surroundings, recognise potential threats and adopt preventive measures as part of their daily lives. Security education not only raises awareness of existing and emerging vulnerabilities but also equips children with the skills to protect themselves, their peers, and their possessions. Ultimately, it empowers young learners to anticipate risks, respond appropriately, and contribute to the creation of safer homes, schools, and communities.

The Need for Security Education among Preschoolers

The need for introducing security education at the preschool level cannot be overemphasised. Children are increasingly exposed to various forms of risks, ranging from personal safety threats and unsafe outdoor environments to the growing influence of digital media. However, many preschoolers lack the basic knowledge and skills needed to recognise danger, respond appropriately to unfamiliar situations or seek help when needed. These gaps in safety awareness leave them especially vulnerable in periods where insecurity is widespread or unpredictable.
Integrating structured, age-appropriate security education into early childhood programs is essential for laying a strong foundation for lifelong safety practices. When preschoolers are taught simple but vital concepts such as identifying trusted adults, understanding boundaries, practising road safety, and navigating basic digital interactions, they become more confident and capable of protecting themselves. Therefore, security education should be treated not as an add-on but as a fundamental component of early learning, enabling young children to develop the awareness and resilience necessary to thrive in a complex and often unpredictable world.
Furthermore, introducing security education to children at the preschool level is essential for developing their awareness of personal safety and their role in maintaining a secure environment. Early learners who are guided through foundational concepts of security gain an understanding of how to be mindful of their surroundings, identify familiar and unfamiliar individuals, and recognise behaviours or situations that may pose a threat. Teaching young children how to report concerns to people such as parents, teachers, or caregivers reinforces both responsibility and trust in protective systems.

Safety Themes to Teach in Security Education

1. Awareness of Personal Safety

Children are to know their names, address and home phone numbers. It is important to teach them basic contact details like their names, parents name and contact number. In an emergency, they should be able to share their contact number with someone. Knowledge of where their home is and a description of any nearby landmarks is also important. All these can be taught by memorisation along with regular practice at school and home. Finkelhorand Dziuba-Leatherman (2014) found that many preschool and early grade children were unable to distinguish between safe and unsafe situations and were at a loss as to what to do in that situation.

2. Stranger Safety:

Finkelhorand Dziuba-Leatherman (2014) also found that, mostly, regarding interaction with strangers, recognising dangerous objects, and responding to inappropriate touch, pre-schoolers displayed little or no knowledge to what should be done. The study emphasized the need for early education on safety skills to reduce vulnerability to abuse. Children should not collect or eat things given by strangers. They should be taught that it is dangerous to accept food from anyone. They should learn to politely refuse if a stranger is offering them gifts

or food without their parent's or teacher's consent or in their absence. Preschoolers should be clearly taught never to go anywhere with a stranger, regardless of the reason given. It is crucial that children understand that, in emergencies, only familiar and trusted adults such as parents, guardians, or designated school staff will be responsible for their safety. This lesson can be reinforced through role-playing, safety drills, and discussions about identifying trusted adults. By learning to recognise and avoid potentially dangerous interactions, children are better equipped to maintain their safety in unfamiliar or confusing situations.

3. Outdoor Safety Practices:

Children should be guided on outdoor safety measures to protect themselves while engaging in activities outside the home or school. They should be taught that it is unsafe to leave the home or school environment without adult supervision. Outdoor safety should be a core component of early security education, emphasising that movement beyond designated spaces must always be accompanied by a parent, teacher, or trusted adult. Preschoolers lack the judgment to navigate streets or public areas safely, and unsupervised movement can expose them to various risks, including traffic accidents, abduction, or getting lost. Structured guidance and regular reinforcement through stories, visuals, and supervised routines help children internalise this principle.

Furthermore, they should learn to wear appropriate protective wear, such as helmets, when cycling and to look both ways before crossing the street. These habits help build early traffic awareness and reduce the likelihood of accidents. Through modelling and supervised practice, children develop routine safety behaviours that promote independence while maintaining caution in potentially risky environments (World Health Organisation, 2018; Martínez & Bonilla, 2019).

4. Understanding Personal Boundaries and Body Safety:

Children must be taught to understand bodily autonomy and recognise the difference between appropriate and inappropriate touch. Introducing concepts such as safe and unsafe touch through age-appropriate discussions and visuals helps preschoolers build awareness of their rights over their own bodies. Educators and caregivers play a crucial role in reinforcing the idea that any form of touch that makes them feel uncomfortable should be reported immediately to a trusted adult. Teaching children to shout, resist, and report inappropriate contact is a critical step in preventing child abuse and building early self-protection skills (Finkelhor& Dziuba-Leatherman, 2014; UNICEF, 2020).

5. Digital Safety Awareness:

As the world is getting increasingly digitalised, children are not left out from being exposed to online platforms and internet devices. Children should be introduced to foundational internet safety practices, such as not sharing personal information (full name, address, or school) to online predators, avoiding conversations with strangers online, and immediately informing a trusted adult if they encounter anything confusing or uncomfortable. Early digital safety education helps children develop responsible habits for navigating virtual environments and reduces their vulnerability to cyber risks (Livingstone *et al*., 2017; Akpan, 2021). Livingstone et al. (2017) further submitted that preschoolers were found to progressively access digital content, but most lacked basic knowledge about privacy, safe browsing, and the risks of communicating with strangers online. Many were unaware of the consequences of sharing personal information.

6. Protecting Personal Information:

Security education at the early childhood level should include lessons on safeguarding personal information. Children should be discouraged from disclosing their full name, home address, or contact details to strangers, unless under emergency circumstances with guidance from a trusted adult. This practice is vital in preventing abduction, identity misuse, and other forms of child-targeted exploitation (Martínez & Bonilla, 2019; National Centre for Missing and Exploited Children [NCMEC], 2020). Role-playing and repetitive reinforcement help children internalise these safety rules effectively.

7. Listening to their Instincts and Saying No:

It is essential to empower children to trust their instincts and say no when faced with uncomfortable or unsafe situations. Children should be taught that they are not obligated to participate in activities that make them feel anxious or pressured, even if their peers are involved, or the request comes from a familiar adult. Encouraging them to speak up fosters self-confidence, assertiveness, and the development of critical personal boundaries. As Akpan (2021) argues, helping children recognise and respond to uncomfortable feelings is foundational to building lifelong security consciousness.

8. Promoting Home Safety Awareness: Security education at the preschool level must incorporate basic home safety practices. Children should be taught to avoid hazardous behaviours such as playing with electrical outlets, handling sharp objects, or encountering fire or hot appliances. Early guidance in identifying dangerous items within the home environment fosters a proactive sense of caution and helps prevent common accidents. Safety rules can be reinforced through age-appropriate demonstrations, storytelling and visual cues placed in strategic areas of the home or classroom (UNICEF, 2020).

Strategies for Inculcating Security Education into the Early Childhood Curriculum

1. Use of storytelling and picture books
2. Integrating security themes into daily activities
3. Role-play and drama
4. Use of songs, dance, rhymes and visual aids
5. Partnering with parents and caregivers
6. Collaborating with security experts and agencies
7. Training teachers and caregivers
8. Developing and implementing safety policies for children
9. Using technology and media wisely
10. Demonstrating safe behaviours
11. Repeating safety rules consistently
12. Encouraging safe play

Conclusion

The integration of security education into early childhood education (ECE) settings has significant implications for classroom practice. A meaningful and sustainable approach to security education must be holistic, moving beyond isolated lessons to become an integral part of the early learning environment. Educators and caregivers are encouraged to embed safety concepts into core areas of the curriculum. This cross-curricular strategy enables children to encounter and apply security knowledge in a variety of real-life and play-based contexts.

Educators and caregivers must be adequately trained to deliver security content in age-appropriate ways and to respond to children's safety concerns with competence and sensitivity. Additionally, practice must actively involve parents and caregivers through home-school partnerships. Encouraging consistent safety messaging at home reinforces what children learn in the classroom, creating a protective network around the child.

Finally, practitioners should employ child-centred teaching methods to make safety lessons both engaging and accessible. When taught consistently and thoughtfully, security education helps children develop lifelong habits of self-awareness, personal responsibility, and proactive decision-making in relation to their safety. These practices not only contribute to child well-being but also support the broader goals of peace, safety, and resilience in society.

Suggestions

1. Security education should be integrated into the preschool curriculum.
2. Training and retraining of preschool teachers and caregivers for effective delivery of security education content.
3. Use child-centred teaching approaches to teach security education.
4. Teacher education programmes should also include security education topics.
5. Textbooks on security education for preschools need to be developed in line with the new arrangement in the curriculum structure.
6. There is a need for continuous sensitisation of teachers, parents and the general public on security education.
7. Develop and implement school safety policies.
8. Introduce trusted community helpers to children.
9. Children should also be helped with safety precautions when using the internet or online.

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THE CONTRIBUTIONS OF SCIENCE PROCESS SKILLS ON WASTE-TO-WEALTH SKILL ACQUSITION OF PRIMARY SCHOOL PUPILS IN OYO TOWN

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Abstract
Improper waste management poses a global threat, negatively impacting public health and creating unsightly environments. While governments are making efforts, a truly significant impact requires a collective responsibility. It is crucial to instil a sense of ownership in everyone, starting with comprehensive education for school children and extending to those who currently disregard waste issues. Embracing the "waste-to-wealth" concept offers an inclusive approach, engaging individuals from households to the broader community. This study, therefore, determined the contributions of science process skills and gender on waste-to-wealth skill acquisition in Oyo Central Senatorial District. A pre-test post-test control quasi-experimental design was adopted. Two hundred primary school pupils were purposively selected from eight schools in Afijio and Oyo West Local Government Areas. A self-designed instrument of Pupils' Performance on Waste-to-Wealth Project Rating Scale (PPWWPRS), which has a reliability index of 0.80, Cronbach's alpha, was used to collect data from 200 primary school pupils. Data were organized and analysed using frequency count, percentage, mean, and analysis of covariance. The findings revealed that science process skills contributed to high performance in waste-to-wealth skill acquisition of primary school pupils. Gender has no significant contribution to science process skills on waste-to-wealth skill acquisition ($F(1;172) = 3.15$; $p>0.05$; Partial $\eta 2 = 0.02$). It was therefore recommended that the primary school curriculum needs to place a stronger emphasis on science process skills (SPS) and provide pupils with more opportunities for practical application. Primary school teachers should be encouraged to adopt a hands-on approach to teaching. This will empower them to develop and implement practical activities, ultimately fostering critical thinking and creativity in their pupils.

Keywords: Science Process Skills; Gender; Waste-to-Wealth; Primary School Pupils; Skill Acquisition

Introduction

The shift in global climate patterns stands as a primary environmental hurdle for the modern world. This arises as a result of overexploitation of resources, pollution, and waste mismanagement, which continue to pose a threat to human health and the environment. The indiscriminate disposal of waste (plastics, nylon, papers, animal dungs, faeces, leaves, unused wood, metal scraps, PET bottles, and others) makes the environment unattractive at a glance. It is also unhealthy to the well-being of both human, terrestrial, aquatic animals, and plants. A persistent challenge in developing nations is the inadequate coverage of solid waste collection relative to generation rates (Olamide *et. al*., 2024). Consequently, uncollected waste accumulates in public spaces, leading to road obstruction and drain blockage. This is a typical situation in most Nigerian cities, where roadsides have turned into a dumping ground despite the efforts of the government to make the roads free of any obstruction. Waste management is categorized as a local problem, but it has a global and greater effect (Maalouf

&Agamuthu, 2023). It was reported by the World Bank (2018) that rapid urbanisation, an increase in population, and economic development are the major causes of an increase in waste generation in most developing countries.

Waste is the unwanted and unused parts of a material that are discarded into dumping sites. The effective processing of waste streams for subsequent resource application is of significant importance in the pursuit of environmental sustainability and the development of a circular economy (Tanveer *et. al*., 2022). According to Ameer (2021), waste management involves waste prevention, reuse, and recycling wherever possible to avoid environmental hazards. Quality education with an appropriate teaching and learning approach is the only instrument that can be used to create awareness on how to transform most of the waste into valuable materials. This method of transforming waste to functional materials is referred to as waste-to-wealth, which has to be universal and make it an inclusive idea. Both adults and young people need to participate in the waste-to-wealth idea so as to achieve the sustainability of the environment. Ignorance and lack of quality education bring waste mismanagement. Mulak *et al*. (2024) affirmed that involving young people in waste-to-wealth is about nurturing environmentally responsible citizens, fostering creativity and problem-solving skills, introducing basic economic concepts, and encouraging community engagement. Involving school pupils in waste management is an excellent idea; this is referred to as inclusive waste management. Sulistyawati *et. al*. (2020) highlight the critical importance of instilling responsible waste management habits in young children as a significant long-term investment.

The use of appropriate methods and approaches in teaching is a pathway to quality education for sustainable development. Introducing a waste-to-wealth initiative as a means of managing waste in the environment involves creativity, critical thinking, and problem-solving skills. Waste-to-wealth is seen as a means of creating environmental awareness and a sense of responsibility among school pupils (Mulak *et. al*., 2024). The science process skills approach is an action exhibited when exploring the environment. This approach promotes critical thinking, creativity, problem-solving, and well-informed citizens. Science process skills is a pedagogical approach that stresses the methods of learning, incorporating student engagement and imaginative thinking to facilitate the acquisition of knowledge, abilities, ethics, and perspectives relevant to everyday situations (Depari &Hasrudin, 2019). Science process skills enhance hands-on learning among students. The development of science process skills and the provision of entrepreneurship education hold significant importance for societies pursuing a pathway towards self-reliance and sustainability (Akinbobola& Bada, 2022). Waste-to-wealth initiative through the science process skill approach is another important means of achieving sustainable development.

Dilek (2023) stated that science process skills enhance the effectiveness of learning and the acquisition of scientific attitudes. Science process skills encompass the cognitive and intellectual abilities used in science learning for understanding and problem-solving (Nwuba*et. al*., 2022). In some studies, it was posited that science process skills are not meant for use during science class teaching only (Hill, 2023). They are skills for both individual and societal development. Science process skills are learner-centered because the learner makes use of the senses during the teaching and learning process. Practical activities that involve science process skills make it easy for learners to develop the 21st-century skills (Tzobasa& Njoku, 2021; Apeadido*et. al*., 2024). Science process skills are divided into two: the fundamental, which are general for every individual and are called basic science process skills, and the integrated science process skills, which are displayed in secondary and tertiary institution sciences (Ugwuanyi & Nwafor, 2021; Chinda &Achigbe, 2024). The core science process skills of observing, communicating, measuring, and classifying are fundamental tools utilised in many scientific disciplines. This study focuses on the contributions of three basic science process skills to the waste-to-wealth project among primary school pupils. The justification for selecting these three skills (observing, classifying, and measuring) was that they are concrete skills. In contrast, others are abstract and may be challenging for primary school pupils to demonstrate.

This research examines the relationship between scientific process skills and gender in the context of a waste-to-wealth project among primary school students. Gender is a significant aspect influencing education, as noted by several experts. There are varied opinions on how gender influences students' performance in the acquisition of knowledge and skills. Research conducted by researchers such as Okoye andOsuafor (2021), Pius

and Okoli (2021), Ibe & Nwosu (2017), and Anchor et al. (2018) indicated that male students showed superior science process skills, but other studies revealed that females exhibited enhanced science process abilities (Mbonu-Adigwe*et. al*., 2019; Okafor, 2020). Statistical analyses usually indicate that gender does not significantly influence the development of science process skills among students. Studies conducted by Ekon and Eni (2015); Irungu *et. al*. (2019); Ihejiamazu*et. al* (2020) and Okoye and Osuafor (2021) jointly demonstrated that gender did not significantly influence students' development of science process abilities. Zuba (2022) indicated that the interaction of gender and instructional styles did not significantly affect the development of science process abilities among students. This indicates that student gender did not substantially affect the efficacy of the teaching approaches. The absence of interaction corroborates the conclusions of Ibe and Nwosu (2017); Mbonu-Adigwe*et. al*. (2021), Pius and Okoli (2021), all of whom noted no synergistic effect of gender and instructional methods on the learning of science process skills in science education. Okoye and Osuafor (2021) have differing views regarding the substantial interaction between gender and instructional methods on the development of science process skills. Fisher *et. al*. (2020) emphasised the ongoing under-representation of women in Science, Technology, Engineering, and Mathematics (STEM) disciplines as a significant obstacle to tackling Africa's developmental challenges. This necessitates the organisation of inclusive activities, the utilisation of suitable instructional techniques and materials, and the demonstration of expertise in implementing gender-responsive policies (Mhewa *et al*., 2020; Lee, 2021;Ekine *et al*., 2023).

Theoretically, this study is grounded in the works of Lev Vygotsky's Social Constructivism Theory, which posits that children build knowledge through social interaction and active engagement. This framework is relevant because developing science process skills (observing, classifying, and measuring) requires pupils to use their senses and cognitive tools to solve problems. By interacting with waste materials, learners do not merely receive information; they actively develop the critical thinking and creativity needed to transform discarded items into valuable resources. This theory supports the study's findings that a learner-centred, hands-on approach is more effective than conventional teaching for acquiring 21st-century skills and fostering environmental responsibility.

The indiscriminate disposal of waste in Nigerian cities creates significant environmental and health challenges despite the enormous efforts from the government. Waste management is an important issue throughout the world. People's ability to convert waste into valuable resources through waste-to-wealth ideas has not been given proper attention, especially in the education sector. There are many studies on science process skills, gender, and waste management in institutions of learning, but much has not been done on science process skills and waste-to-wealth among primary school pupils as a way of achieving sustainable development.
The main objectives of the study are to:

1. Determine the main effect of treatment (observing, classifying, measuring, and conventional method) on primary school performance on waste-to-wealth skill acquisition.
2. Examine the main effect of gender on the performance of pupils in waste-to-wealth skill acquisition
3. Investigate the interaction effect of treatment and gender on primary school pupils' performance in waste-to-wealth skill acquisition.

Hypotheses

The following hypotheses were tested at the 0.05 level of significance:
H01: There is no significant main effect of treatment (observing, classifying, measuring, and conventional) on pupils' performance in waste-to-wealth skill acquisition.
H02: There is no significant main effect of gender on the pupils' performance in waste-to-wealth skill acquisition.
H03: There is no significant interaction effect of treatment and gender on the pupils' performance in waste-to-wealth skill acquisition.

Methodology

This study is a 4 x 2 factorial matrix of a pretest-posttest control group quasi-experimental design. Science process skills approach (observing, classifying, and measuring skills and conventional method being the control group) was crossed with gender (male and female) in primary school pupils of Afijio and Oyo West Local Government of Oyo Central Senatorial District of Oyo State. The multi-stage sampling technique was employed to select participants for this study. At first, purposive sampling was employed to choose two local government areas (Afijio and Oyo West) from the eleven local government areas within the Oyo Central Senatorial District. Subsequently, four schools were purposively chosen from each of the two LGAs based on the criteria of geographical distance, co-educational status, and public designation. Making a total of eight public primary schools' participants. In each LGA, the four chosen schools were randomly allocated into four treatment groups (Experimental Group I, Experimental Group II, Experimental Group III, and the Control Group) by a balloting process. A purposive sampling strategy was employed to select an entire Primary III class from each of the eight schools. Primary III was chosen because it represents the mid-level of elementary education in Nigeria. With a target of 25 pupils per class, the final sample consisted of 200 Primary III pupils from the Oyo Central Senatorial District. Data was collected using a self-designed instrument titled "Pupils' Performance on Waste-to-Wealth Project Rating Scale" (PPWWPRS). This instrument contained the characteristics of the project, such as beauty, value, market value, and completion with finishing touches. The instrument was rated on a 5-point Likert scale, which was (1=poor, 2=Fair, 3=good, 4=Very Good, 5=Excellent). The instrument measured the performance of pupils on waste-to-wealth skill acquisition. Early childhood education experts validated the instrument, and corrections were made. The instrument was taken to a school in the Atiba Local Government, which was not part of the study, for field testing. The reliability index of the instrument was calculated and yielded a 0.80 Cronbach's alpha. The researcher prepared instructional guides for the experimental and control groups.

The participants were subjected to the use of waste to produce valuable resources before the introduction of the treatment, and this was referred to as the pre-intervention phase. The projects produced were collected for rating, using the research instrument of PPWWPRS, and the performance of the pupils was taken as a pre-test. The researcher, class teachers, with the help of research assistants, used the treatment on the participants at the intervention phase, which lasted for six weeks. At the end of the intervention phase, pupils were allowed to convert waste to valuable resources, and these projects were rated with the instrument. The results of the pupils were regarded as posttest performance. The data collected were analysed through the use of frequency counts, percentage, mean, and F-test statistical tools, and analysis of covariance was used to test the hypotheses at a 0.05 level of significance.

Results

Hypothesis 1: There is no significant main effect of treatment (observing, classifying, measuring and conventional) on pupils' performance in waste-to-wealth project.

Table 1: Summary of 4X2X2 Analysis of Covariance on Waste-to-Wealth Performance

Tests of Between-Subjects Effects

Dependent Variable: Post Performance

Source	Type III Sum of Squares	Df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	9842.105[a]	16	615.132	5.092	.000	.321
Intercept	17804.815	1	17804.815	147.389	.000	.461
PrePerfm	35.566	1	35.566	.294	.588	.002
Treatment	4509.141	3	1503.047	12.442	.000	.178
Gender	380.873	1	380.873	3.153	.078	.018
treatment * gender	355.426	3	118.475	.981	.403	.017
Error	20777.810	172	120.801			
Total	808737.000	189				
Corrected Total	30619.915	188				

a. R Squared = .321 (Adjusted R Squared = .258)

Table 1 shows that there is a significant main effect of treatment on the waste-to-wealth performance of the pupils ($F_{(3;172)} = 12.44$; $p<0.05$; Partial $\eta^2 = 0.18$). Therefore, the null hypothesis 1 is rejected. To know the source of the magnitude of performance across the group, estimated marginal means of the ANCOVA is presented in Table 2.

Table 2: Estimated Marginal Means on Waste-to-Wealth Performance

Variable	Categories	Mean	Std. Error
Intercept (Grand mean)	Pre-performance	20.582	-
	Post Performance	64.171	0.890
Treatment	Expt. I	67.714 [a]	1.818
	Expt. II	62.396 [a]	1.856
	Expt. III	70.257 [a]	1.684
	Control	56.315 [a]	1.774
Gender	Male	62.588 [a]	1.182
	Female	65.754 [a]	1.332

Table 2 reveals that pupils in Experimental Group III, who were exposed to measuring as the leading skills, had the highest waste-to-wealth performance mean score (70.26); followed by those in Experimental Group I, who were exposed to Observing as the leading skills (67.71); followed by those in Experimental Group II, who were exposed to classifying as the leading skills (62.40). Pupils exposed to conventional group had the lowest performance mean score (56.32). To know the source of the significant effect, Scheffe's post hoc pairwise comparison was performed and Table 3 presents the summary.

Table 3: Summary of Scheffe's Post Hoc Pairwise Comparison of Performance

	Mean score	EXP I	EXP II	EXP III	Control
EXP I	67.714[a]		*		*
EXP II	62.396[a]	*		*	*
EXP III	70.257[a]		*		*
Control	56.315[a]	*	*	*	

Note: * implies s significant difference at 0.05 level

Table 3 shows that the significant effect reported in Table 4.2 was as a result of significant difference between:

1. Experimental I and Experimental II
2. Experimental I and Control
3. Experimental II and Experimental III
4. Experimental II and Control
5. Experimental III and Control

However, there is no significant difference between Experimental I and Experimental III in their waste-to-wealth performance.

Therefore, it can be inferred that measuring leading skill (Experimental group III) is the best to improve pupils' performance in waste-to-wealth, followed by observing leading skill (Experimental group I), followed by

classifying leading skill (Experimental group II), while the conventional method is the lowest in improving waste-to-wealth performance among pupils.

Hypothesis 2: There is no significant main effect of gender on the pupils' performance in waste-to-wealth skill acquisition.

Table 1 shows that there is no significant main effect of gender on pupils' performance in waste-to-wealth when exposed to scientific skills ($F(1;172) = 3.15$; $p>0.05$; Partial $\eta 2 = 0.02$). Therefore, hypothesis 2 is not rejected. Though Table 2, the estimated marginal means table, reveals that females had a higher waste-to-wealth performance mean score (65.75) than males (62.59), the difference between the two mean scores (3.17) is not significant.

Hypothesis 3: There is no significant interaction effect of treatment and gender on the pupils' performance in waste-to-wealth skill acquisition.
Table 1 shows that there is no significant interaction effect of treatment and gender on the waste-to-wealth performance of the pupils ($F(3;172) = 0.98$; $p>0.05$; Partial $\eta 2 = 0.02$). Therefore, hypothesis 4 is not rejected.

Discussion of Findings
The results of the study show that the science process skills approach has a positive effect on the experimental groups when compared with the control group. This dictates that science process skills make the participants in experimental groups develop critical thinking, creativity, and problem-solving skills needed to transform waste into valuable resources. This result is in line with the findings of (Tzobasa& Njoku, 2021; Apeadido *et al*., 2024) who posited that hands-on activities involved in science process skills make it easy for learners to develop the 21st-century skills, which allowed for better performance in the waste-to-wealth project performance. This implies that active engagement and hands-on experiences are important for effective learning and the acquisition of skills. This finding provides theoretical support for incorporating environmental education into early childhood curricula.

The findings also revealed that gender does not affect the performance in waste-to-wealth projects through the use of science process skills. This aligns with the studies of Ekon and Eni (2015); Irungu *et al*. (2019); Ihejiamazu*et. al* (2020) and Okoye and Osuafor (2021), whose results collectively indicated that gender was not a significant factor in students' acquisition of science process skills. The last finding indicates that the treatment's effect on performance does not differ significantly between boys and girls (and vice versa). This suggests that the treatment effect is independent of the pupils' gender, and conversely, the gender effect is independent of the treatment group. Furthermore, this implies that when the same interventions are applied to both male and female pupils concurrently, their projects are evaluated using the same PPWWPRS rating scale. In line with the results of Ibe& Nwosu (2017), Mbonu-Adigwe*et. al*. 2021); (Pius & Okoli, 2021), and this study found no evidence of a combined effect of gender and instructional approaches on the acquisition of science process skills among science students.

Conclusion
This study demonstrates that the integration of Science Process Skills (SPS), specifically observing, classifying, and measuring, significantly enhances the ability of primary school pupils to engage in waste-to-wealth activities. The empirical evidence indicates that pupils taught through these practical scientific methods outperformed those taught using conventional instructional styles. By utilising their senses and cognitive tools to interact with waste materials, learners successfully developed the critical thinking and creativity necessary to transform discarded items into valuable resources. Furthermore, the study confirms that these gains in skill acquisition are gender-neutral, as both male and female pupils achieved similar levels of performance when provided with the same hands-on opportunities. Ultimately, the science process skills approach serves as an effective pedagogical bridge between classroom learning and practical environmental sustainability. Teaching science through hands-on activities (like observing and measuring) helps children learn how to turn trash into

valuable items. This method works equally well for both boys and girls. By using this practical approach, schools can help students develop creative thinking and a sense of responsibility for the environment.

Recommendations

Based on the outcomes of the findings, the following recommendations were made:

1. The primary school curriculum needs to place a stronger emphasis on science process skills (SPS) and provide pupils with more opportunities for practical application. This exposure is crucial for developing their critical thinking, creativity, and problem-solving capacities.
2. Primary school teachers should be encouraged to adopt a hands-on approach to teaching. This will empower them to develop and implement practical activities, ultimately fostering critical thinking and creativity in their students.
3. To build the capacity of Basic Science and Technology teachers, school administrators are advised to organise training programmes centred on child-centred, activity-based teaching approaches and the waste-to-wealth concept, ultimately fostering pupils' comprehension of science process skills.

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EXAMINING THE ROLE OF STORYTELLING IN LANGUAGE DEVELOPMENT AMONG PRESCHOOLERS IN LAGOS STATE

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Abstract
The preschool years are a critical stage for language development, during which children acquire foundational skills in vocabulary, comprehension, oral expression, and narrative competence. This study examined the role of storytelling in enhancing language development among preschool children in Lagos State, Nigeria. Guided by a quasi-experimental pre-test, post-test control group design, the study sampled 120 preschoolers from six schools across three local government areas. Participants were divided into an experimental group and a control group, with the experimental group exposed to structured storytelling activities. Data were collected using the Language Development Assessment Checklist (*LDAC*) and *Teacher's Rating Scale (TRS), with reliability established at 0.76. Statistical analyses included paired and independent t-tests at a 0.05 level of significance. Findings revealed that preschoolers in the experimental group showed significant improvement across all measured variables: vocabulary acquisition (Mean Difference = +13.47), listening comprehension (+14.46), oral expression (+13.63), and narrative skills (+13.82), with these improvements being statistically significant ($p < 0.05$), compared to minimal gains in the control group. Independent t-test results further confirmed statistically significant differences ($p < 0.05$) between the groups across all variables, leading to the rejection of the null hypothesis. It recommends the systematic integration of storytelling into early childhood curricula, teacher training programs, and home-based learning practices to maximise its benefits.*
Keywords: Storytelling, Language Development, Vocabulary, Listening Comprehension, Oral Expression, Narrative Skills

Introduction

The early years of childhood are a critical period for language development, as children acquire the foundational skills necessary for communication, literacy, and cognitive growth. Among the various pedagogical approaches used in early childhood education, storytelling has remained a timeless and effective strategy for promoting language skills (Isbell *et. al.*, 2004). Storytelling, whether oral, visual, or interactive, offers preschool children opportunities to engage with vocabulary, sentence structures, and narrative forms in ways that enhance their linguistic competence, particularly through interactive and culturally relevant methods such as oral narratives and folktales (Nicolopoulou, 2010).

Particularly in Lagos State, preschool education is influenced by cultural diversity, urbanisation, and varying socio-economic conditions that affect children's exposure to language and literacy experiences (Akinbote, 2007). Storytelling, deeply embedded in African traditions, not only entertains but also teaches values, fosters creativity, and enhances social interaction (Adeyemi, 2016). Its role in language development, however, requires deeper academic exploration, especially as contemporary preschools face increasing pressure to prepare children for formal literacy in a rapidly globalising world.

Research evidence suggests that storytelling improves vocabulary acquisition, listening comprehension, phonological awareness, and expressive language skills in preschoolers, particularly in settings where children face linguistic and socio-economic challenges, such as those in Lagos State (Haven & Ducey, 2007; Jalongo, 2014). In addition, stories provide a natural context for children to practice active listening and retelling, which are essential precursors to reading and writing (Wright, 2010). In multilingual environments such as Lagos,

storytelling may also serve as a bridge between home languages and English, the official medium of instruction, thereby fostering bilingual or multilingual proficiency (Ogunnaike, 2015).

The potential benefits of storytelling in Nigerian preschools face challenges, such as limited instructional time, inadequate training for teachers in oral narrative methods, and the growing dominance of digital media that competes for children's attention (Okonkwo, 2018). Understanding the specific contributions of storytelling to language development within Lagos State is therefore essential for informing curriculum design, teacher training, and policy implementation in early childhood education.

Language development in the preschool years is foundational to later literacy, academic achievement, and social communication (Snow *et. al.*, 1998). In Nigeria, particularly in Lagos State, where cultural and linguistic diversity is high, ensuring effective language acquisition during early childhood is both a necessity and a challenge (Ogunnaike, 2015). Many children enter preschool with varying levels of exposure to English, indigenous languages, and digital media, leading to disparities in vocabulary, comprehension, and expressive abilities (Bamgbose, 2011). This disparity creates an urgent need for instructional strategies that can bridge linguistic gaps and support equitable language growth.

Storytelling, a long-standing oral tradition in African societies, has been recognised globally as a powerful pedagogical approach for enhancing young children's linguistic competence (Isbell *et. al*., 2004; Nicolopoulou, 2010). It provides a natural and culturally relevant medium through which children can acquire vocabulary, grasp narrative structures, and improve listening and speaking skills (Haven & Ducey, 2007). However, despite its potential, research indicates that storytelling is often underutilised in formal preschool classrooms in Nigeria due to factors such as inadequate teacher training, lack of structured integration into curricula, and the increasing preference for rote learning methods (Adeyemi, 2016; Okonkwo, 2018).

The rise of digital technologies and media-based learning in Lagos state has shifted children's engagement from oral storytelling to screen-based narratives (Lillard *et. al.*, 2015). While digital tools may enhance visual literacy, they often reduce opportunities for interactive oral exchanges that foster deeper linguistic development. This raises critical questions about how traditional storytelling can be effectively adapted and sustained in modern preschool education.

Empirical studies on the impact of storytelling in Nigerian preschools remain limited, and most existing research focuses on general literacy practices rather than the specific role of storytelling in fostering vocabulary, comprehension, and expressive language (Ogunnaike, 2015; Okonkwo, 2018). There is insufficient evidence to guide educators, curriculum planners, and policymakers in harnessing storytelling as a structured pedagogical tool in Lagos State preschools.

Storytelling has been described as the art of using words, images, and gestures to communicate narratives that convey meaning, values, and cultural traditions (Haven & Ducey, 2007). In early childhood education, storytelling functions as both a pedagogical strategy and a developmental tool that stimulates imagination, creativity, and communication (Wright, 2010). Unlike story reading, which relies on written text, storytelling emphasises oral interaction and performance, making it a dynamic medium for promoting language skills in preschool contexts (Isbell et al., 2004).

In African societies, storytelling occupies a central position in traditional education systems. Folktales, proverbs, and myths have historically been used to transmit cultural knowledge, morals, and linguistic skills (Adeyemi, 2016). This indigenous orientation situates storytelling as not only an instructional tool but also a cultural practice that connects children to their community heritage (Okonkwo, 2018). Storytelling in early childhood education refers to the deliberate use of oral narratives, dramatized tales, and story-based interactions as instructional strategies to promote language, cognitive, social, and cultural development (Haven & Ducey, 2007). Unlike passive story reading from a text, storytelling emphasises formative and dialogic elements, voice modulation, gestures, repetition, and improvisation that invite active participation from young listeners (Isbell *et. al*., 2004). This interactive quality makes storytelling particularly well suited to preschool settings where children learn through social engagement and multimodal experience.

Listening is a foundational component of language development, and storytelling provides an engaging platform for strengthening children's comprehension skills (Snow *et al*, 1998). Through attentive listening to stories, children learn to follow sequences, interpret events, and derive meaning from oral discourse

(Nicolopoulou, 2010). Storytelling also promotes active listening behaviours such as predicting outcomes and asking clarifying questions, which are essential for academic success (Haven & Ducey, 2007).

Listening comprehension is a foundational skill in early language development: it underpins the ability to follow instructions, understand narratives, infer meaning, and later decode and comprehend written text (Snow *et al*, 1998). Storytelling is an interactive, contextualised, and multimodal activity that creates an ideal context for strengthening preschoolers' listening comprehension by engaging attention, supplying meaningful discourse, and prompting higher-order processing such as prediction and inference (Isbell *et. al*., 2004; Haven & Ducey, 2007).

Storytelling enhances listening comprehension through several interrelated mechanisms. First, stories provide coherent, temporally ordered input (setting → event → resolution) that helps children learn to track causal sequences and narrative structure (Nicolopoulou, 2010). Second, storytelling often includes repetition, rhythm, and formulaic language, which aid memory and facilitate the retrieval of story elements. Third, multimodal supports intonation, gesture, facial expression, props, and dramatisation supply nonverbal cues that make implicit meaning explicit and reduce cognitive load for young listeners (Wright, 2010). Finally, interactive features of effective storytelling (questioning, predicting, clarifying) actively engage children in meaning-making rather than passive reception, promoting comprehension processes such as inferencing and summarising (Isbell *et al.,* 2004; Haven & Ducey, 2007).

Experimental and classroom studies show that participatory storytelling (teacher-led oral narration with interactive elaboration) improves children's ability to recall story events, answer literal and inferential questions, and produce coherent retells compared with non-interactive exposure to stories or isolated vocabulary instruction (Isbell *et al.,* 2004; Jalongo, 2014). Repeated storytelling sessions strengthen comprehension gains by allowing children to consolidate mental models of the narrative and to practise higher-level listening skills (Snow et al., 1998). Although much of the rigorous intervention literature stems from Western contexts, the underlying cognitive and social mechanisms apply across cultural settings and are supported by research on oral narrative traditions in Africa (Ogunnaike, 2015; Adeyemi, 2016).

Storytelling does not only develop receptive skills but also expressive language abilities. When children retell stories, dramatise narratives, or create their own tales, they practice fluency, sentence formation, and communicative competence (Wright, 2010). Studies have shown that children who participate in storytelling activities display greater confidence in oral expression compared to peers exposed primarily to rote learning methods (Isbell *et al.,* 2004; Okonkwo, 2018).

Storytelling is a potent catalyst for developing preschoolers' expressive language and broader communicative competencies. Beyond receptive outcomes such as vocabulary and comprehension, storytelling actively cultivates the skills children need to produce extended discourse, negotiate meaning with others, and adapt language to different social contexts (Isbell *et. al.,* 2004; Wright, 2010). Studies comparing interactive storytelling interventions with less dialogic approaches report gains in measures of expressive language, including increased mean length of utterance (MLU), greater variety of sentence types, and more coherent narrative retells (Isbell *et. al*., 2004; Jalongo, 2014). Classroom-based observations further show that children engaged in drama, puppet play, and group retell activities use more descriptive language and complex sentence constructions during free play and structured tasks than peers who experience primarily teacher-centered instruction (Wright, 2010).

Storytelling contributes to the development of narrative competence, which is essential for literacy acquisition. Narratives provide structural models that help children understand story elements, such as setting, characters, conflict, and resolution (Miller & Pennycuff, 2008). These structures prepare preschoolers for later reading and writing tasks by enhancing their ability to organise thoughts coherently and construct sentences (Snow *et. al.*, 1998).

Narrative skills is the ability to construct, comprehend, and retell coherent stories, are central to early literacy because they organise experience into meaningfully sequenced discourse and provide a bridge between oral language and written text (Snow *et al.*,1998). In preschool children, well-developed narrative competence predicts later reading comprehension, spelling, and written composition because narratives require supra-sentential organisation (macrostructure) as well as lexical and syntactic precision (microstructure) capacities

that underpin conventional literacy (Miller & Pennycuff, 2008; Nicolopoulou, 2010).

Research shows that storytelling significantly enhances children's vocabulary growth by exposing them to both familiar and unfamiliar words within meaningful contexts (Jalongo, 2014). Oral narratives provide opportunities for word repetition, contextual cues, and semantic associations that enrich children's lexical repertoire (Isbell *et. al*., 2004). For preschoolers in multilingual environments like Lagos, where English often functions as a second language, storytelling can facilitate smoother vocabulary acquisition by bridging indigenous languages and English (Bamgbose, 2011; Ogunnaike, 2015).

Storytelling is a powerful vehicle for vocabulary development in early childhood because it presents words in rich, meaningful contexts rather than as isolated items (Jalongo, 2014). Unlike decontextualised word lists, narratives embed new lexical items within plots, character actions, and situational cues, which help children infer meanings, form semantic networks, and retain words through repeated exposure and varied usage (Isbell *et. al*., 2004; Miller & Pennycuff, 2008).

Empirical studies in diverse contexts have found that regular storytelling activities increase both receptive and expressive vocabulary in preschool children compared with instruction that lacks narrative context (Isbell *et. al*., 2004; Jalongo, 2014). Practically, this suggests that teachers who intentionally select stories with target vocabulary, pause to explicate meanings, invite children to dramatise scenes, and encourage retelling will produce stronger vocabulary gains than those who rely solely on direct instruction or rote memorisation.

Lagos's linguistic diversity makes storytelling particularly valuable: indigenous folktales and proverbs are culturally resonant vehicles for introducing academic vocabulary while validating home language knowledge (Adeyemi, 2016). Teachers can leverage culturally familiar narratives to scaffold English vocabulary, using code-switching strategically to make semantic links transparent (Ogunnaike, 2015). However, realising these benefits requires teacher training in interactive storytelling techniques and curriculum time allocated for narrative-rich activities rather than exclusively teacher-centred lessons (Okonkwo, 2018).

Therefore, this study seeks to address the underexplored role of storytelling in language development among preschool children in Lagos State. Without rigorous inquiry into how storytelling practices influence children's oral expression, comprehension, and vocabulary acquisition, Nigerian preschool education risks neglecting a culturally embedded and pedagogically sound method of enhancing early language skills.

This study seeks to examine the role of storytelling in language development among preschool children in Lagos State. By investigating the extent to which storytelling enhances vocabulary, sentence formation, comprehension, and oral expression, the study aims to provide empirical evidence that will strengthen the use of culturally relevant and pedagogically sound practices in Nigerian preschools.

Objectives of the study

The specific objectives of the study are to:

i. Determine the extent to which storytelling influences the vocabulary development of preschoolers in Lagos State.

ii. Examine the effect of storytelling on the listening and comprehension skills of preschool children in Lagos State.

iii. Assess the role of storytelling in improving the speaking and expressive language abilities of preschoolers in Lagos State.

iv. Investigate the influence of storytelling on the narrative and sentence construction skills of preschool children in Lagos State.

Research Questions

1. What is the effect of storytelling on vocabulary acquisition among preschoolers in Lagos State?
2. What is the effect of storytelling on listening comprehension among preschoolers?
3. How does storytelling influence oral expression and communication among preschoolers?
4. What is the effect of storytelling on narrative skills and literacy foundations of preschoolers?

Hypothesis

H0: There is no significant difference in the post-test mean scores of the experimental and control groups across all language development variables

Methodology

This study employs a quasi-experimental research design, specifically the pre-test, post-test control group design. This design is chosen because it allows the researcher to establish a cause-and-effect relationship between the use of storytelling as an instructional strategy and the language development of preschool children. The population of this study consists of all preschool children aged 3–5 years enrolled in public and private nursery schools across Lagos State. A sample of 120 preschoolers was selected for the study using a multistage sampling technique, which involved stratifying schools into public and private categories to ensure a diverse representation of socio-economic backgrounds. Schools were stratified into public and private categories to ensure representation from different socio-economic backgrounds. From the selected schools, children were randomly assigned to two groups: the experimental group and the control group. A total of six schools across three local government areas in Lagos wereselected. From each school, 20 pupils (10 for experimental and 10 for control) were sampled, for a total of 120 children. Two research instruments were used for the study: "Language Development Assessment Checklist" (LDAC) and Teacher's Rating Scale (TRS), for teachers to evaluate the oral communication and vocabulary growth of pupils before and after the intervention. Reliability was established using the Cronbach Alpha technique, with a reliability coefficient of 0.76. Data collected was **descriptive and inferential statistics of**Paired Sample t-test and independent t-test at a 0.05 level of significance.

Result

Research Question 1: What is the effect of storytelling on vocabulary acquisition among preschoolers in Lagos State?

Table 1: Mean and Standard Deviation Scores of Vocabulary Acquisition

Group	N	Pre-Test Mean (SD)	Post-Test Mean (SD)	Mean Difference
Experimental	60	24.35 (3.41)	37.82 (4.20)	+13.47
Control	60	23.91 (3.55)	26.43 (3.68)	+2.52

Table 1 shows that preschoolers in the experimental group had a substantial improvement in vocabulary acquisition after exposure to storytelling (Mean Difference = +13.47), compared to the control group (Mean Difference = +2.52). This improvement is statistically significant, indicating that storytelling is an effective method for enhancing vocabulary acquisition in preschool children. This suggests that storytelling significantly enhanced children's vocabulary growth.

Research Question 2: What is the effect of storytelling on listening comprehension among preschoolers?

Table 2: Mean and Standard Deviation Scores of Listening Comprehension

Group	N	Pre-Test Mean (SD)	Post-Test Mean (SD)	Mean Difference
Experimental	60	21.14 (2.95)	35.60 (3.77)	+14.46
Control	60	20.85 (3.02)	24.30 (3.18)	+3.45

Table 2 results reveal that the experimental group's listening comprehension improved by +14.46 points, while the control group improved by only +3.45 points. This indicates that storytelling fosters attentive listening and comprehension skills among preschoolers more effectively than conventional teaching methods.

Research Question 3: How does storytelling influence oral expression and communication among preschoolers?

Table 3: Mean and Standard Deviation Scores of Oral Expression

Group	N	Pre-Test Mean (SD)	Post-Test Mean (SD)	Mean Difference
Experimental	60	22.78 (3.12)	36.41 (4.05)	+13.63
Control	60	22.35 (3.25)	25.21 (3.43)	+2.86

Table 3 above shows that the experimental group recorded a significant gain in oral expression and communication skills after storytelling activities (Mean Difference= +13.63), while the control group showed minimal improvement (Mean Difference= +2.86). This finding suggests that storytelling provides children with opportunities to practice verbal expression, improve pronunciation, and construct meaningful sentences.

Research Question 4: What is the effect of storytelling on narrative skills and literacy foundations of preschoolers?

Table 4: Mean and Standard Deviation Scores of Narrative Skills

Group	N	Pre-Test Mean (SD)	Post-Test Mean (SD)	Mean Difference
Experimental	60	20.95 (2.88)	34.77 (3.95)	+13.82
Control	60	21.05 (2.96)	23.89 (3.20)	+2.84

Table 4 indicates that preschoolers exposed to storytelling demonstrated a remarkable improvement in narrative skills (+13.82), compared to the control group (+2.84). This demonstrates that storytelling serves as a foundation for literacy by enabling children to structure ideas, sequence events, and retell stories effectively.

Testing Hypothesis

H_0: There is no significant difference in the post-test mean scores of the experimental and control groups across all language development variables

Table 5: Independent Samples t-test of Post-Test Scores Between Groups

Variable	t-value	df	p-value (Sig.)	Decision at 0.05
Vocabulary Acquisition	11.24	118	0.000	Reject H
Listening Comprehension	12.02	118	0.000	Reject H
Oral Expression	10.88	118	0.000	Reject H
Narrative Skills	11.57	118	0.000	Reject H

The results in table 5 show that there is a statistically significant difference in the post-test mean scores of the experimental and control groups across all language development variables ($p < 0.05$). Hence, the null hypotheses are rejected. This implies that storytelling has a significant positive effect on vocabulary acquisition, listening comprehension, oral expression, and narrative skills among preschoolers in Lagos State.

Discussion of Findings

The findings of this study revealed that preschoolers in the experimental group who were exposed to storytelling activities showed significant improvement in vocabulary acquisition compared to their peers in the control group. This supports the argument that storytelling serves as a rich medium for introducing children to new words, phrases, and expressions within meaningful contexts.

This outcome is consistent with the work of Isbell, Sobol, Lindauer, and Lowrance (2004), who found that storytelling significantly enhances children's vocabulary development because words are presented in narrative contexts that make them easier to understand and remember. However, future research could explore how storytelling methods can be adapted to diverse linguistic backgrounds in Lagos State. Similarly, Wright (2010) notes that repeated exposure to stories provides young learners with opportunities to encounter and internalise new vocabulary. By listening to stories and later retelling them, preschoolers expand their lexical repertoire and apply these words in their everyday communication.

The study also found that storytelling had a strong positive effect on children's listening comprehension skills. Children in the experimental group demonstrated significantly higher post-test scores than those in the control group. This suggests that storytelling activities encourage children to focus, pay attention to details, and process spoken information more effectively.

This finding resonates with Berkowitz (2011), who emphasised that storytelling develops auditory discrimination and comprehension as children learn to identify main ideas, recall details, and make inferences from the stories they hear. In addition, Haven and Ducey (2007) argued that storytelling fosters active listening because it engages children's imagination and requires them to follow a sequence of events.

The results showed that preschoolers exposed to storytelling demonstrated greater improvement in oral expression and communication skills compared to those in the control group. This suggests that storytelling provides children with opportunities to practice speaking, articulate thoughts clearly, and engage in verbal interactions.

This finding is consistent with Ellis and Brewster (2014), who observed that storytelling encourages children to retell stories, role-play characters, and respond to questions, thereby strengthening their speaking abilities. Similarly, Nguyen (2013) reported that children engaged in storytelling developed better sentence structure, pronunciation, and expressive skills than those who only participated in rote learning or drill-based lessons.

The study found that narrative skills improved significantly among children exposed to storytelling. Participants in the experimental group demonstrated greater ability to retell stories, organise events sequentially, and construct coherent narratives than their peers in the control group. This highlights storytelling as a critical tool for developing early literacy foundations.

This finding agrees with Paris and Paris (2003), who found that storytelling supports the development of narrative competence, which is closely linked to later reading and writing proficiency. In addition, Nicolopoulou (2002) emphasised that storytelling allows children to internalise narrative structures, including plot, setting, and characters, which contribute to literacy development.

The improvement in narrative skills observed in this study also aligns with the work of Miller and Pennycuff (2008), who argued that storytelling fosters children's ability to create and share personal stories, thereby strengthening their identity as emerging readers and writers. This supports the notion that storytelling is not only an oral activity but also a preparatory stage for formal literacy development.

Conclusion

Based on the findings, the study concludes that storytelling is an effective pedagogical tool for enhancing language development among preschoolers in Lagos State. Unlike conventional teaching approaches, storytelling provides a meaningful, interactive, and engaging learning experience that stimulates vocabulary

growth, strengthens listening comprehension, fosters oral expression, and builds narrative competence.
The results align with socio-cultural and constructivist learning theories, which emphasise that children acquire language best through social interaction, cultural mediation, and active participation in meaningful contexts. These findings suggest the need for a curriculum that integrates storytelling as a core instructional strategy to enhance language development in preschool classrooms. Storytelling, therefore, not only enriches linguistic skills but also prepares preschoolers for future literacy and academic success.

Recommendations

In light of the conclusion, the following recommendations are made:

1. Preschool teachers should integrate storytelling into daily classroom activities as a core instructional strategy.
2. Storytelling should be incorporated into the Early Childhood Education curriculum as a structured component for developing language skills.
3. Parents should be encouraged to tell or read stories to their children at home to reinforce language skills learned at school.
4. The Lagos State Ministry of Education should provide capacity-building programs for teachers on innovative language development strategies, with special emphasis on storytelling.

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INFLUENCE OF DIGITAL TOOLS DEVICES AND INTERACTIVE MEDIA IN FACILITATING LEARNING AMONG PRESCHOOL CHILDREN IN LAGOS STATE

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Abstract
The rapid advancement of digital technology in the 21st century has significantly reshaped educational practices, particularly in early childhood education. This study examined the influence of digital tools, devices, and interactive media on preschool children's learning outcomes in Lagos State, Nigeria, with a focus on cognitive, socio-emotional, literacy, numeracy, and fine motor development. Adopting a cross-sectional survey research design, the study involved 360 preschool children aged 3–5 years, their teachers, and parents drawn from 18 public and private preschools across six Local Government Areas in Lagos State. Data were collected using a Teacher Questionnaire, Parent Questionnaire, and an Early Learning Achievement Test (ELAT). Descriptive statistics, independent samples t-tests, Pearson correlation, and multiple regression analyses were employed at a 0.05 level of significance. Findings revealed significant disparities between public and private preschools, with children in private schools demonstrating higher learning outcomes, attributable to better access to and more frequent use of digital resources. While parental education level had a modest but significant moderating effect, teacher qualification did not significantly predict learning outcomes. The study concludes that developmentally appropriate and well-facilitated digital integration can enhance preschool learning, but unequal access risks widening educational disparities. It recommends targeted government investment in public preschool digital infrastructure, professional development for teachers in digital pedagogy, and parental sensitisation on guided digital use. These measures are critical for maximising the benefits of digital learning while ensuring equity in early childhood education.
Keywords: Digital Tools, Interactive Media, Preschool Education, Early Childhood Development

Introduction

The world is changing rapidly in the 21st Century, and digital technology is likelyto have a major impact on every area of human life. In fact, the illiterate in this century will not be those who can neither read nor write alone, but those who cannot learn, unlearn and relearn. The rapid and widespread adoption of online and open-access services and technologies is a consequence of evolving media narrative in which human interaction and engagement have evolved from traditional face-to-face conversations through symbolic representation systems (Print and books) to audio-visual transmissions (Radio and television) into digital networked formats (Computers). The traditional telephone is being replaced by alternative modes of communication; analogue radio and television broadcast ha been replaced by digital networks, which allow personalised choice, and face-to-face meetings have shifted to human-to-machine interfaces(Dabaghand, 2021). The impact of Information and Communication Technology (ICT), a term used to describe any hardware and software in use, was recognised in 2022 by the World Economic Forum (WEF). Since then, the term digital technology has been used to describe not only desktop computers but also portable mobile devices such as smartphones, game consoles, digital cameras, media players, notebooks, and hand-held computers (Traxler, 2022). Almost everyone owns one, uses one, and as he points out, often has more than one. Such devices, he suggests, are pervasive, ubiquitous, conspicuous, unobtrusive, noteworthy and taken-for-granted. Their roles are new and completely different from older, static, and less personal information technologies, such as desktop computers. Within this period of change is the internet, which has been predicted to transform learning in the 21st century, in the same way that electrification transformed learning in the 21st century (Brown & Duquid, 2022).

The discussion about the use of digital technology in education has shifted, therefore, from an approach based on whether they are 'good' for children to 'how' they can be used in order to enhance children's learning. In support of this view, Resnick (2022) questioned the way education views learning and suggested that in education, there is a need to rethink learning in this digital age. Resnick (2022) proposed that it is essential to re-conceptualise school classrooms, claiming that instead of a centralised control mode (with the teacher delivering information to a room full of students, researchers should re-examine teaching approaches, curriculum subjects and methods, sizes of classrooms, and places that learning takes place. Researchers echo the vision of bridging the global digital divide (World Economic Forum, 2022); that the internet will open up new learning opportunities, enabling new types of knowledge-building communities in which children and adults around the globe collaborate on projects and learn from one another (Resnick, 2002).

The integration into the daily lives of children and its influence on their cognitive, emotional, and social development continues to increase day by day. Technology offers many opportunities for children to play, explore, and learn (Linebarger & Piotrowski, 2023). Since the brains of children are extremely flexible at this period, these learning opportunities constitute a critical developmental point in children through the natural exploration of their own world, new connections between neurons are formed and existing connections are strengthened (Blanchard & Moore, 2022).

Olaniyi (2022) defined digital learning as all about learning that occurs at the use of network technologies to create, foster, deliver and facilitate learning anytime, and anywhere. Oduolowu et al. (2023) refers to digital learning as self-paced, provides consistent content, faster and works anywhere and anytime for learners. The instructional materials are easily updated and permit the use of multimedia, which leads to video, audio, quizzes and other forms of interaction. Olaojoet. al.(2022) describe e-learning as any technological mediated learning using computers, whether from distance or in face-face classroom (computer assisted learning). Researchers went further to describe it as a shift from traditional education or training to ICT-based personalised, flexible, individual, self-organised, collaborative learning based on a community of learners, teachers and facilitators.

With reference to Ebeh (2022), there are different forms of digital learning. These include:

1. Web-Based Learning, which is a form of learning that is accessed through web browsers or through the corporate intra-net. It is a user-friendly medium to deliver training because of the compatibility of web browsers with videos, audios, animation and other media elements. Its advantage is that the learner can access it at their own pace, within a set time, without travelling to the learning centres to attend the training.
2. Mobile Learning, which is in the form of digital learning, is accessed by learners through mobile devices like mobile phones, Ipad, tablets, anywhere, any time with just a few taps. It is a breakthrough in the e-learning world. This form of digital learning allows students or individuals to discuss, collaborate and learn with their peers across the globe.
3. Computer-Based Training, which is a form of digital learning that is accessed offline on computers. It uses various multimedia elements to engage the learner. Computer-based training allows learners to learn at their own pace, and the training progress is tracked by the computer, which assigns grades instantly. The instructor can also track the training progress.
4. A webinar, which is a form of digital learning delivered over the web, using video conferencing software. Different sorts of training can be delivered through this form. The advantage of this mode is that one can host a large group, interact and brainstorm, and share applications with other participants.
5. CD-ROM Based Learning by which the training is recorded onto compact discs and accessed on the system without any internet connection. It is an outdated mode of digital learning. However, in recent times, digital learning has progressed a long way from CD-ROM to mobile learning.
6. Virtual Classroom, by which learners can access training right from the comfort of their own places or even homes and or offices. This mode adopts various synchronous technologies such as web conferencing, video conferencing, and so on, to enable global learners to participate, communicate with one another and view videos at the same time. Being an e-learning programme, the learners do not need to travel to attend the session, thus saving transport costs.

7. Collaborative Learning, by which both the instructor and learners share knowledge, either online or offline. The learner gains knowledge through interaction, and those who could not make it to the online session can partake in online forums, live chats, instant messaging and used message boards.
8. Custom E-Learning whereby one can develop course content to suit one's requirements. No license is needed to access the courses with limited system requirements and gain personalized learning experiences. This mode delivers what the learners expect.
9. Off-the-Shelf Digital Learning, which comprises training materials that are already developed and ready to be used by the end users. The best part of the catalogue in e-learning courses is that they fulfil the urgent training requirements and deliver content in multiple languages. They are also cost-effective to train small departments (Ebeh, 2022).

The effect of the use of digital technology on the development of young children is ever-increasing in the world around us today. Digital learning offers many opportunities for children to engage positively in imaginative, active learning. It motivates them, provides them room for practice, reassures them, builds confidence in them and encourages children to persist in taking the next steps in learning, and builds their self-esteem.

A programmable toy could be used to develop a range of skills. Children learn that pressing buttons causes an action, that they can control the action left, right, forwards, backwards, and that the number of presses equals the number of moves. Critically, a programmable toy can put the child at the centre of the learning process as they learn how to programme a toy to perform a particular action. An overhead projector introduces children to shadows and patterns, while also being a motivating tool to display and share learning. Musical keyboards can encourage moving to reading and creating patterns with sound. Metal detectors can help children identify differences in materials, particularly useful for encouraging children to explore the outdoor environment (Ruth & Paul, 2022).

Walkie-talkies can encourage children's use of language, and they can use this equipment to share experiences, connect ideas, explain what is happening and recall and relive past experiences. The use of a digital camera can encourage children to reflect on past experiences, observe details, share personal likes and dislikes, sequence events, record and share a significant event. An interactive whiteboard brings a new dimension to a learning environment. It immediately captures children's attention by the impact of the images, the colour and the control that it gives children. As a very good motivating tool, children can use it independently to paint, draw and explore their environment. An interactive whiteboard is particularly effective for sharing experiences; for example, small groups of children can all collaborate and, importantly, can all partake in the activities (Kara, 2022).

Software can bring in different environments for children to explore, which otherwise may be impossible for them to gain experience of. With a computer, other applications become possible access to the Internet and its widening range of resources for learning, webcams for seeing themselves, and their activities through digital microscopes to investigate with and digital camcorders. Cassette recorders and MP3 devices can encourage children to listen to and retell stories (Mitofani et al., 2023). Information and communication technology is particularly enabling for children with special educational needs; it can provide access to experiences that might be hard for some children to access through any other means and thereby aid children's learning and development. It is also highly motivating, can help build children's confidence in their abilities is an excellent focus for social interaction (Mitofani et al.,2023).

Information and communication technology added to role play reflects the real world, builds on children's experiences, and allows them opportunities to understand how, why, when and where different forms of technology are used in everyday life. Environments such as shops, cafes or offices can be set as role play areas, making use of ICT to record and access information with a real purpose in mind (Palaiologou, 2024). In the 21st-century learning environment, digital transformation has significantly altered pedagogical approaches, especially in early childhood education. With the increasing proliferation of digital tools, interactive media, and smart devices, educators now have access to a wide range of innovative resources that can enhance teaching and foster comprehensive development in preschool learners. Early childhood is a critical

period of rapid brain development, during which children acquire foundational cognitive, emotional, and social skills that set the stage for lifelong learning. As such, integrating developmentally appropriate digital resources into preschool education can be a powerful means of supporting learning outcomes, provided such integration is thoughtful, intentional, and pedagogically sound (Palmer, 2024).

Digital tools such as tablets, learning apps, and interactive whiteboards have been found to support cognitive development by offering multisensory experiences that enhance memory, attention, and problem-solving skills (Hirsh-Pasek et al., 2015). According to Neumann and Neumann (2014), literacy apps can significantly improve phonemic awareness and early reading skills among preschoolers. In Lagos, similar technologies are being integrated into some private preschools, but their effectiveness remains under-researched.

The use of interactive media in early childhood has both positive and negative implications. While collaborative digital games and storytelling apps can enhance empathy and cooperation (Plowman & McPake, 2013), excessive screen time may hinder interpersonal interactions and emotional regulation (Radeskyet. al., 2024). Lagos preschools may vary in their moderation of screen exposure, and this study seeks to understand how such practices affect learners. Children tend to exhibit higher levels of engagement when learning experiences are interactive and visually stimulating (Zilka, 2020). Touchscreen devices and educational games can captivate attention and provide instant feedback, promoting intrinsic motivation. However, factors such as app quality, teacher facilitation, and content relevance significantly determine learning outcomes (Marsh et. al., 2015). Educators' digital literacy and attitudes toward technology play a pivotal role in how effectively these tools are employed (Donohue & Schomburg, 2023). In Nigeria, studies have indicated that many preschool teachers lack adequate training in digital pedagogy (Ogunlade & Ojo, 2020).

Statement of the Problem

In Lagos State, where urbanisation and technological integration are rapidly evolving, the application of such digital solutions in preschool education is both timely and necessary. Lagos, as Nigeria's commercial and technological hub, is witnessing an increased emphasis on modernising educational practices to meet global standards. However, there remains a need to examine whether and how digital tools are being employed in preschool settings, and what impact they are having on learners at this critical stage of development. This study examines the role of digital tools and interactive media in facilitating learning experiences for preschool children, aiming to understand their effectiveness in promoting cognitive, emotional, and social development in early learners.

Purpose of the Study

The primary purpose of this study is to examine the influence of digital tools, devices, and interactive media in facilitating learning among preschool children in Lagos State. Specifically, the study seeks to:
i. Assess the availability and frequency of use of digital tools and devices in preschool classrooms in Lagos state.
ii. Determine the relationship between the use of digital tools, devices, and interactive media and children's learning outcomes across literacy, numeracy, fine motor, and socio-emotional domains.
iii. Compare the influence of digital integration between public and private preschools in Lagos State.
iv. explore teachers' and parents' perceptions of the role of digital resources in enhancing preschool children's learning experiences.

Hypotheses

H01: There is no significant difference in the learning outcomes of children in public and private preschools based on access to and use of digital tools, devices, and interactive media.

H02: There is no significant relationship between the use of digital tools, devices, and interactive media and preschool children's learning outcomes in Lagos State.

H03: Teacher qualifications and parental education levels have no significant moderating effect on the relationship between digital media use and preschool children's learning outcomes

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Methodology

This study adoptsa cross-sectional survey research design. The study captures measurable data on the extent of digital tool usage and its association with children's learning. The population of this study consists of preschool children aged 3–5 years enrolled in both public and private preschools in Lagos State. The study included preschool teachers in the selected schools and the parents of the sampled children. A Multistage sampling technique was employed to ensure representativeness across diverse demographics and school types in six Local Government Areas (LGAs) were purposively selected to capture urban, peri-urban, and semi-rural contexts from Lagos State out of 20 LGAs.Within each selected LGA, three preschools were randomly chosen, ensuring an equal balance between public and private institutions. These were 18 preschools in total. From each school, two preschool classes, Nursery 2 and Kindergarten, were selected. Ten children from each class were randomly sampled, resulting in an estimated 360 children. All teachers of the selected classes and two parents from each class participated in the study. Threeinstruments were employed for the study title "Teacher Questionnaire: Structured questionnaire containing demographic items, availability and use of digital resources, teaching practices, and attitudes toward digital media, measured on Likert-type scales. Parent Questionnaire: Structured and semi-structured items on household access to devices, parental mediation practices, and socioeconomic background and Early Learning Achievement Test (ELAT): Adapted instrument with tasks in literacy (letter recognition, vocabulary), numeracy (counting, shape recognition), fine motor skills (drawing, tracing), and socio-emotional domains (story recall, peer interaction).

Reliability Internal consistency of scales will be measured using Cronbach's alpha, with a target threshold of 0.78, 0.72 and 0.85, respectively. Scoring was assessed using Cohen's kappa or intraclass correlation coefficients, targeting values of 0.75. Data analysis was conducted with the use of descriptive statistics (frequency, means and standard deviations). Inferential statistics of t-tests, Pearson correlation,and multiple regressions at the 0.05 level of significance was used for the study.

Results

Descriptive Statistics

Table 1: Demographic Characteristics of Respondents (Teachers and Parents)

Variable	Category	Frequency	Percentage (%)
Teacher Qualification	NCE/Diploma	14	38.9
	B.Ed/B.Sc. + PGDE	17	47.2
	M.Ed	5	13.9
Parent Education	Primary/Secondary	28	38.9
	Tertiary	44	61.1
School Type	Public	18	50.0
	Private	18	50.0

Table 1 above depicts demographic characteristics of the respondentsfor the teacher qualifications; 47.2% were the majority of the respondents who has B.Ed/B.Sc/PGDE qualification, 38.9% were having NCE/Diploma qualification while 13.9% were having M.Ed certification. For the Parent Education; majority of the respondents are 61.1% have tertiary education, and 38.9% have primary/secondary education. For the school type; both public and private school have 50% each.

$H_0$1: There is no significant relationship between the use of digital tools, devices, and interactive media and preschool children's learning outcomes in Lagos State.

Table 4.2: Independent Samples t-Test of Learning Outcomes by School Type

School Type	N	Mean	SD	t	df	p-value
Public	171	72.45	9.84			
				-7.15	340	0.000
Private	171	80.19	8.95			

Table 2 shows that private school children scored significantly higher on learning outcomes than their public school counterparts ($p < 0.001$).

$H_0$2: There is no significant relationship between the use of digital tools, devices, and interactive media and preschool children's learning outcomes in Lagos State.

Table 4.3 Pearson Correlation between Digital Tool Use and Learning Outcomes

Variable	Learning Outcomes (r)	p-value
Frequency of Device Use	0.42	0.000***
Availability of Tools	0.35	0.001**
Interactive Media Score	0.53	0.000***

Table above shows that there is a strong positive relationship between interactive media engagement and children's learning outcomes ($r = 0.53$, $p < 0.001$).

$H_0$3: Teacher qualifications and parental education levels have no significant moderating effect on the relationship between digital media use and preschool children's learning outcomes.

Table 4.4 Multiple Regression Predicting Learning Outcomes

Predictor Variable	B	SE B	Beta	t	p-value
Frequency of Device Use	1.25	0.41	0.18	3.05	0.002**
Availability of Tools	1.68	0.52	0.21	3.23	0.001**
Interactive Media Score	0.49	0.08	0.41	6.13	0.000***
Parent Education Level	2.10	0.87	0.14	2.41	0.016*
Teacher Qualification	0.85	0.69	0.07	1.23	0.221

Model Summary: $R^2 = 0.41$, $F(5, 336) = 46.88$, $p < 0.001$.

Discussion of Findings

The descriptive analysis revealed that while most preschools possessed some digital tools and devices, there was variation in frequency of use across schools. Private preschools demonstrated greater access to interactive whiteboards, tablets, and digital learning applications compared to public preschools. This finding aligns with prior studies (e.g., UNESCO, 2022; Adeyemi & Alabi, 2021), which highlight the digital divide between private and public educational institutions in Nigeria. The disparity suggests that access remains a critical factor in ensuring equitable learning opportunities.

The independent samples t-test indicated that children in private preschools significantly outperformed their counterparts in public preschools. Qualitative insights from teachers and parents attributed this gap to better infrastructure, more consistent device use, and greater parental involvement in digital learning at home. This finding reflects earlier research by Okeke (2020) that emphasised structural inequalities in Nigeria's educational system. It also highlights the risk of deepening educational disparities if digital learning resources remain unevenly distributed. Thus, the null hypothesis 1 was rejected, establishing that the type of school significantly influences the impact of digital media on learning outcomes.

The results of correlation and regression analyses showed a significant positive relationship between interactive media engagement and preschool children's learning outcomes. Among the predictors, interactive media had the strongest influence on literacy, numeracy, and socio-emotional development. This supports the constructivist view of learning, which posits that interactive and engaging environments enhance children's cognitive growth. It also corroborates findings by Plowman and McPake (2019), who reported that interactive media promotes active learning, problem-solving, and creativity in early childhood education. The rejection of the null hypothesis 2 confirms that digital tools, devices, and interactive media play a measurable role in enhancing preschool learning outcomes.

Regression analysis revealed that teacher qualifications did not significantly predict children's learning outcomes, while parental education levels showed a modest but significant effect. Parents with higher education levels were more likely to provide digital learning resources at home and to supervise children's digital use. This partially supports earlier work by Livingstone and Blum-Ross (2020), who stressed the role of "parental mediation" in children's digital experiences. However, the non-significant role of teacher qualifications suggests that access and institutional resources may outweigh teacher credentials in shaping children's outcomes. Hence, the null hypothesis (H_{03}) was partially rejected, with parental education emerging as a relevant factor but teacher qualifications not showing a significant effect.

Conclusion

The conclusions are based on the findings discussed in the preceding chapter. Furthermore, actionable recommendations are provided for policymakers, educators, parents, and future researchers to enhance the role of digital media in early childhood education. Digital tools and devices are present in many preschools, but their availability and frequency of use differ markedly between public and private schools. Private preschools enjoy greater access and more consistent integration of digital tools than public preschools. The use of digital tools, particularly interactive media, has a significant positive influence on preschool children's learning outcomes. Children exposed to interactive media demonstrated higher performance in literacy, numeracy, and socio-emotional domains. A significant disparity exists between public and private preschools, with private school children outperforming their public school peers due to better access to digital resources and greater parental involvement.

Parental education level was found to significantly influence children's digital learning experiences, while teacher qualification showed a limited effect. This highlights the importance of the home environment in reinforcing school-based learning. Teachers and parents generally perceive digital tools and media as beneficial for enhancing engagement, creativity, and skill development. However, they also identified challenges, including limited resources, lack of teacher training, concerns about screen time, and unequal access.

Recommendations

In light of the conclusions, the following recommendations are proposed:

i. Teacher professional development programs should include mandatory training on the integration of digital tools and interactive media in early childhood pedagogy.

ii. Schools should adopt blended learning approaches, where digital resources complement traditional play-based and face-to-face learning strategies.
iii. Parents should be sensitised on the importance of supervised digital use, ensuring that children engage with educational rather than purely recreational content.
iv. Awareness programs should be organised to guide parents on striking a balance between screen time and traditional play activities.
v. The Lagos State Government should invest in equipping public preschools with adequate digital infrastructure, including tablets, interactive whiteboards, and internet access.

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INCLUSION OF COGNITIVE ENHANCEMENT BASIC SEWING ACTIVITIES IN PUPILS TEACHERS PERCEPTION AND ENGAGEMENT

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Abstract
Cognitive development is a central goal of early childhood education, particularly in contemporary knowledge-driven societies that prioritise skills such as critical thinking, creativity, problem-solving, and metacognition. Despite global advocacy for hands-on and activity-based pedagogies, Nigerian lower basic classrooms remain largely dominated by rote learning practices, limiting opportunities for higher-order cognitive engagement. This study investigated teachers' perceptions, levels of engagement, challenges, and improvement strategies regarding the integration of basic sewing activities as a means of enhancing cognitive development among lower basic pupils in Ojo, Lagos Metropolis. The study adopted a descriptive survey research design. A sample of 400 lower basic teachers was selected using simple random sampling. Data were collected using two validated instruments: the Teachers' Perception of Lower Basic Pupils' Cognitive Enhancement through Basic Sewing Activities questionnaire and an observational schedule on teachers' engagement. Reliability coefficients of 0.82 and 0.76 were obtained using Cronbach's alpha. Descriptive statistics were employed for data analysis. Findings revealed that teachers held a moderately positive perception of the cognitive relevance of basic sewing activities, particularly in fostering creativity and imagination. However, actual classroom engagement was largely limited to basic sewing tasks, with minimal linkage to explicit cognitive goals, reflective practices, or differentiated instruction. Major challenges identified included inadequate teacher training, limited instructional time, insufficient administrative support, and pupil frustration. The study concludes that while basic sewing activities are present in classrooms, their cognitive potential is underutilised due to pedagogical and systemic constraints. The study recommends targeted teacher training, resource provision, and curriculum reforms to promote holistic, cognitively enriching early childhood education.
Keywords: Basic Sewing Activities; Cognitive Enhancement; Engagement; Lower Basic Pupils; Teachers' Perceptions

Introduction

Cognitive development dominates early childhood education in today's fast-changing environment. As knowledge-based economies and technologically driven societies emerge, teachers, legislators, and curriculum developers have focused more on cognitive skills like critical thinking, problem solving, creativity, divergent thinking, pattern recognition, design thinking, and metacognition. Cognitive skills are crucial for academic success and give young students the tools to handle real-world challenges, adapt to change, and learn for life (Bindu & Saravanakumar, 2023). Thus, encouraging these competencies in basic education, especially in lower basic classrooms, has become a priority.

Traditional Nigerian classrooms still emphasise rote learning, memorisation, and standardised tests (Suleiman *et. al.*, 2022). This traditional method sometimes excludes cognitively stimulating, hands-on, skill-based activities that promote higher-order thinking. Sewing projects in class are a fun and creative way to improve lower-level students' cognitive development. Although considered a vocational or extracurricular skill, sewing is cognitively valuable. Fine motor coordination, logical sequencing, problem identification and resolution, attention to detail, and pattern conceptualisation are all important cognitive development skills that children learn through simple sewing tasks.

Many cognitive processes benefit from simple sewing projects. Planning a basic design may inspire strategic thinking and creativity, but threading a needle or sewing a pattern requires concentration, spatial awareness, and hand-eye coordination (Burman, 2023). These exercises can also be customised to promote cooperative learning, where students work in pairs or small groups to improve social cognition and

communication. These benefits make sewing a rewarding hobby that supports early childhood development. This approach has great potential, but most Nigerian classrooms, especially public elementary schools, where resources, teacher preparation, and creative teaching strategies are lacking, underutilise it.

Based on Vygotsky's socio-cultural theory, the study stressed the need for interactive, student-centered pedagogy to improve conceptual comprehension in multilingual contexts.

A multiple case study by Nwani (2021) examined teacher effectiveness and student learning in five Lagos State private primary schools. The study identified professional knowledge, instructional planning, differentiated instruction, formative assessment, care, and practical wisdom as essential teacher practices and personal attributes through interviews and unstructured observations. The findings showed that pedagogical content knowledge, success criteria, and formative assessment improve teacher effectiveness. The study also stressed teacher autonomy as essential for practical wisdom (phronesis), which sustains effective teaching and learning.

Adewale and Oyibo-Ubido (2024) examined how Activity-Based Learning (ABL) affected primary school math performance in Eti-Osa, Lagos State. A descriptive survey of 50 students in traditional, ABL, and combined method groups found that ABL students outperformed traditional students. However, the three groups performed similarly when compared. ABL combined with conventional pedagogy could improve mathematics education, so the authors recommended integrating ABL into teaching, along with educator training and more research into its long-term effects.

Darling-Hammond (2017) assert that teachers' instructional competence is strongly influenced by the quality of professional preparation and ongoing training. Time constraints and lack of administrative support further compound these challenges, echoing findings by Fullan (2007), who argued that curriculum innovations often fail when institutional support and scheduling flexibility are lacking. Pupils' frustration with sewing tasks may also reflect insufficient differentiation and scaffolding, which are essential for maintaining learner motivation and persistence (Vygotsky, 1978).

Therefore, teacher involvement is crucial to cognitive-enhancing activities. Teachers are the main agents of curriculum delivery, so their impressions, attitudes, and participation directly affect whether such activities are included in the classroom (Jenkins, 2020). Unfortunately, current research suggests that many Nigerian lower basic classroom teachers may lack the exposure, training, or tools to engage students in cognitive sewing activities (Ede *et. al.*, 2021). Low participation in such activities poses a gap between teachers' knowledge of sewing's cognitive benefits and their classroom practices (Mpofu *et. al.*, 2023).

Children learn best through active engagement with materials and meaningful tasks (Piaget, 1972). Sewing activities require pupils to plan, sequence actions, recognise patterns, and correct errors, all of which support cognitive development. Dewey (1938) asserts that learning through practical and creative activities enhances reflective thinking and intellectual growth. However, the noticeable proportion of teachers who disagreed or strongly disagreed with some items indicates uncertainty about the direct cognitive benefits of sewing. This lack of consensus may stem from limited pedagogical understanding of how practical activities translate into cognitive outcomes, as noted by Kolb (1984), who emphasized that experiential learning must be intentionally structured to yield cognitive gains.

Vygotsky's (1978) sociocultural theory emphasises the role of guided instruction, scaffolding, and reflective dialogue in transforming activities into meaningful cognitive experiences. Without explicit connections to cognitive goals or reflective discussions, the potential of sewing activities to enhance higher-order thinking remains underutilised. The results suggest that teachers may lack the pedagogical skills to embed cognitive objectives into practical lessons, thereby limiting learning outcomes.

Government provision of sewing kits and resources was available in experiential learning environments (Kolb, 1984). Although collaboration with vocational instructors received mixed responses, literature suggests that interdisciplinary collaboration can enrich classroom practice by bridging theory and practice (UNESCO, 2015). Additionally, allocating time for creative activities and promoting peer learning align with Dewey's (1938) view that social interaction and creative expression are central to meaningful learning.

Furthermore, although studies from around the world support hands-on, project-based learning as a means of promoting cognitive development, there is a large research void on how best to include basic sewing into the Nigerian lower basic educational setting. Few studies have examined how teachers in densely populated Ojo, Lagos Metropolis, with diverse socioeconomic issues and educational disparities, view and use cognitive enhancement through basic sewing (Mohammed, 2021).

This disparity presents a challenge and an opportunity to rethink early learning to combine cognitive enrichment and skill development. It is of interest to this study, therefore, to find out the teachers' opinions and levels of involvement in integrating cognitive enhancement sewing activities into lower basic classrooms in Ojo, Lagos Metropolis. This provides empirical data to inform curriculum, policy, and teacher professional training. More importantly, it emphasises the need for a more holistic and pragmatic approach to early childhood education that integrates academics and life skills to develop well-rounded, cognitively agile learners ready for the future (Mekhridinovna *et al.*, 2023; Bindu & Saravanakumar, 2023).

Statement of the Problem

In today's fast-paced digital world, it's important to have planned ways to help young children develop their brains. Every student needs to learn skills like critical thinking, creativity, problem-solving, and pattern recognition. This is especially true in lower basic classrooms, where cognitive growth happens quickly (Ginsburg, 2020; Wilson & Conyers, 2020). Basic sewing activities naturally cultivate these skills through practical engagement; however, they are significantly underutilised in Nigerian classrooms, especially in Ojo, Lagos (Salau, 2023; Idowu, 2023). Despite evidence supporting the role of craft-based activities in cognitive development (Bukhave *et. al*., 2025), there is limited empirical data on teachers' perceptions and engagement with basic sewing in Nigerian lower basic schools. This study examines teachers' perceptions and involvement in basic sewing activities within Ojo's lower basic schools to enhance educational practices and policies.

The purpose of this study is to examine the role of basic sewing activities in enhancing cognitive development among lower basic pupils, with particular emphasis on teachers' perceptions, classroom practices, and implementation challenges. Specifically, the study seeks to:

i. Investigate teachers' perceptions of the relevance of basic sewing activities as a pedagogical tool for fostering cognitive skills.

ii. Determine the extent to which teachers actively engage lower basic pupils in basic sewing activities designed to enhance cognitive development within the classroom setting.

iii. Assessing the level of teachers' involvement and instructional practices, and how effectively these activities are utilised in lower basic education.

iv. Identify the challenges faced by teachers in integrating basic sewing activities into the lower basic curriculum.

Research Questions

1. What are teachers' perceptions of the relevance of basic sewing activities in enhancing cognitive development among lower basic pupils?
2. To what extent do teachers engage lower basic pupils in cognitive enhancement through basic sewing activities?
3. What challenges do teachers face in integrating basic sewing activities into the lower basic classroom?
4. What strategies can be adopted to improve teachers' engagement and the effective integration of basic sewing activities in lower basic education?

Methodology

A descriptive survey research design was adopted for this study. The population of the study comprised all the lower basic classroom teachers in Ojo metropolis, Lagos, Nigeria. A survey of 400 teachers in Ojo, Lagos Metropolis, was sampled. A Simple random sampling was used to get a representative sample of the larger teaching population involved in this important developmental process. Participants were selected using a simple random sampling method to ensure that all teachers had an equal chance and to reduce sampling bias. Two instruments was used titled "Teachers' Perception of the Lower Basic Pupils' Cognitive Enhancement Basic Sewing Activities (TPLBPCEBSA)" and the observational schedule "Teachers' Engagement of Lower Basic Pupils in Cognitive Enhancement Basic Sewing Activities Observational Schedule (TELBPCEBSAOS)" were validated by the expert for face and content of the instruments to ensure instrument measure what its purpose to

measure. Reliability of the instruments was checked to assess the internal consistency of the two instruments using Cronbach's alpha, and the reliability coefficient of 0.82 and 0.76, respectively. The data collected were analysed using descriptive statistics to analyse the questionnaire and observational schedule data. Frequency counts, percentages, means, and standard deviations were used to describe teachers' feelings and engagement.

Results

Research Question 1: What are teachers' perceptions of the relevance of basic sewing activities in enhancing cognitive development among lower basic pupils?

Table 1. Teachers' Perception of Cognitive Enhancement through Basic Sewing Activities

ITEMS	SD	D	A	SA	Mean	Std. Dev.
Basic sewing activities can enhance pupils' cognitive development.	115 (28)	104 (26.0)	86 (21.)	95 (23)	2.40	1.137
Sewing activities help pupils develop critical thinking skills.	112 (28.)	83 (20.7)	101 (25)	104 (26.)	2.49	1.155
Engaging in sewing promotes creativity and imagination.	90 (22)	97 (24.3)	95 (23)	118 (29)	2.60	1.133
Pattern recognition during sewing enhances problem-solving abilities.	92 (23)	102 (25.5)	107 (26)	99 (24)	2.53	1.099
Basic sewing should be part of the lower basic curriculum.	82 (20)	105 (26.3)	104 (26)	109 (27)	2.60	1.095

Table 1 shows that teachers generally have a moderate opinion about how useful basic sewing activities are for helping lower basic pupils develop their cognitive skills. The average scores for all items were between 2.40 and 2.60 on a 4-point Likert scale, which means that the view was obviously positive. For example, 23.8% of those who answered agreed that simple sewing tasks can help students learn more, while 28.7% strongly disagreed. Also, about 26.0% agreed that sewing helps people think critically, but a large 28.0% strongly disagreed. The items that got the most positive responses were about encouraging creativity and imagination and adding sewing to the curriculum, both with mean scores of 2.60. A significant number of teachers, however, disagreed or strongly disagreed with all of the items. This suggests that there is some uncertainty or lack of agreement about the cognitive benefits of basic sewing activities. This revealed that the teachers had a positive perception of the lower basic pupils' cognitive enhancement in basic sewing activities.

Research Question 2: To what extent do teachers engage lower basic pupils in cognitive enhancement basic sewing activities?

Table 2: Indicators of Teacher Engagement in Sewing Activities

ITEMS	N	R	O	VO	Mean	Std. Dev.
Teacher introduces basic sewing tasks (e.g., threading, knotting, simple stitches)	0 (0.0)	0 (0.0)	163 (40.8)	237 (59.3)	3.59	.492
Teacher explains sewing concepts using simple tools/materials	0 (0.0)	0 (0.0)	163 (40.8)	237 (59.3)	3.59	.492
Teacher organizes hands-on sewing tasks for individuals or groups	0 (0.0)	0 (0.0)	156 (39.0)	244 (61.0)	3.61	.488
Pupils are actively engaged in sewing-related tasks during class	0 (0.0)	0 (0.0)	163 (40.8)	237 (59.3)	3.59	.492
Pupils provides materials and are availble during activities	0 (0.0)	0 (0.0)	161 (40.3)	239 (59.8)	3.60	.491
Teacher connects sewing tasks to cognitive goals (e.g., problem-solving, planning)	169 (42.3)	195 (48.8)	36 (9.0)	0 (0.0)	1.67	.635
Classroom materials (needles, thread, cloth, etc.) are made available and used	153 (38.3)	198 (49.5)	49 (12.3)	0 (0.0)	1.74	.662
Teacher encourages reflection or discussion after activities (e.g., "What did we learn?")	165 (41.3)	201 (50.2)	34 (8.5)	0 (0.0)	1.67	.625
Pupils show evidence of enjoyment, focus, or persistence in the task	167 (41.8)	197 (49.3)	36 (9.0)	0 (0.0)	1.67	.633
Teacher adapts sewing tasks to pupil ability (e.g., simplifies tasks for struggling pupils)	160 (40.0)	206 (51.5)	34 (8.5)	0 (0.0)	1.68	.622

Table 2 shows that level of teachers' engagement of lower basic pupils in cognitive enhancement basic sewing activities was low with a mean score of 1.67.Though the teachers often teach basic sewing tasks like threading, knotting, and simple stitches. Most (59.3%) say they do this very often, which is shown by a high mean score of 3.59 (SD = 0.492). Mean scores above 3.5 show that pupils make provision and teachers teach but are not involved. For example, they often use simple tools to explain sewing concepts and set up hands-on sewing tasks. The students' active participation and the teacher's guidance during activities were also highly rated, which shows that these cognitive enhancement practices are used on a regular basis. However, there is a big difference in the areas that got low mean scores (around 1.67 to 1.74) and were mostly rated as happening rarely or never by respondents. These areas include connecting sewing tasks to cognitive goals, making materials available, encouraging reflection, making tasks fun for students, and adapting tasks to each student's level of ability.There is a big difference between deeper cognitive engagement and resource support, even though basic tasks are done often. This shows where improvements are needed to make the most of sewing activities for cognitive development in lower basic classrooms.

Research Question 3: What challenges do teachers face in integrating basic sewing activities into the lower basic classroom?

Table 3. Teachers' Responses to Challenges in Implementing Sewing Activities

ITEMS	SD	D	A	SA	Mean	Std. Dev.
Lack of materials and resources limits my ability to teach sewing.	111 (27.8)	100 (25.0)	98 (24.5)	91 (22.8)	2.42	1.121
I do not feel adequately trained to teach sewing activities.	101 (25.3)	97 (24.3)	87 (21.8)	115 (28.7)	2.54	1.154
There is limited time in the school timetable for practical activities.	95 (23.8)	110 (27.5)	97 (24.3)	98 (24.5)	2.50	1.104
There is little or no administrative support for sewing in classrooms.	106 (26.5)	88 (22.0)	97 (24.3)	109 (27.3)	2.52	1.152
Pupils find sewing too difficult or frustrating to attempt.	100 (25.0)	104 (26.0)	83 (20.8)	113 (28.2)	2.52	1.148

Table 3 shows that teachers have a lot of problems when they try to include basic sewing activities in lower basic classrooms. A considerable number of teachers concurred or strongly concurred that the deficiency of materials and resources constrains their capacity to instruct sewing; however, this was the challenge with the lowest level of agreement, reflected by a mean score of 2.42 (SD = 1.121). The most agreement was about not getting enough training, with 28.7% strongly agreeing and a mean of 2.54 (SD = 1.154). This shows that many teachers don't feel ready to teach sewing activities. The school schedule's time limits were also a problem, as shown by a mean of 2.50 (SD = 1.104) and mixed levels of agreement among respondents. Also, a lack of administrative support was seen as a problem, with 27.3% strongly agreeing and a mean score of 2.52 (SD = 1.152). Lastly, a similar percentage of teachers (28.2%) strongly agreed that students often find sewing too hard or frustrating, which shows that students also have problems with learning. The moderate mean scores indicate that these challenges are common and may impede the effective incorporation of sewing activities in the classroom.

Research Question 4: What strategies can be adopted to improve teachers' engagement and effective integration of basic sewing activities in lower basic education?

Table 4. Suggested Strategies for Enhancing Integration of Basic Sewing Activities

ITEMS	SD	D	A	SA	Mean	Std. Dev.
Professional development training in sewing would improve my competence.	90 (22.5)	99 (24.8)	106 (26.5)	105 (26.3)	2.57	1.106
Government provision of sewing kits and resources would enhance delivery.	94 (23.5)	99 (24.8)	103 (25.8)	104 (26.0)	2.54	1.114
Collaboration with vocational instructors can support classroom practice.	113 (28.2)	112 (28.0)	91 (22.8)	84 (21.0)	2.36	1.104
Allocating time for creative activities in the curriculum is essential.	108 (27.0)	98 (24.5)	95 (23.8)	99 (24.8)	2.46	1.134
Peer learning and team teaching would make sewing integration easier.	95 (23.8)	109 (27.3)	102 (25.5)	94 (23.5)	2.49	1.094

Table 4 reveals the results regarding strategies to enhance teachers' engagement and the successful incorporation of fundamental sewing activities in lower basic education indicated a moderate consensus among educators. Professional development training was viewed as a pivotal strategy, achieving a mean score of 2.57 (SD = 1.106), signifying that numerous educators believe this training would augment their proficiency. People also liked the idea of the government giving out sewing kits and other resources, with a mean of 2.54 (SD = 1.114).

This shows that teachers need enough materials to do their jobs. The mean score for working with vocational instructors was a little lower at 2.36 (SD = 1.104), which means that people had mixed feelings about how useful it might be. The average score for giving students time for creative activities in the curriculum was 2.46 (SD = 1.134), which shows that people understood how important it is to set aside time for sewing activities. Finally, peer learning and team teaching were thought to be good methods, with a mean score of 2.49 (SD = 1.094). Overall, the results show that teachers mostly agree on these strategies, but there is still room for more support and use of them to make sewing a bigger part of the classroom.

Discussion of Findings

The findings from research question 1 revealed that teachers generally hold a moderately positive perception of the relevance of basic sewing activities for enhancing the cognitive development of lower basic pupils. The mean scores across all items (2.40–2.60) suggest that teachers recognise the cognitive potential of sewing activities, particularly in fostering creativity, imagination, and problem-solving skills. This aligns with constructivist learning theory, which posits that children learn best through active engagement with materials and meaningful tasks (Piaget, 1972). Sewing activities require pupils to plan, sequence actions, recognise patterns, and correct errors, all of which support cognitive development.

The relatively higher agreement on items related to creativity and curriculum inclusion further supports Dewey's (1938) assertion that learning through practical and creative activities enhances reflective thinking and intellectual growth. However, the noticeable proportion of teachers who disagreed or strongly disagreed with some items indicates uncertainty about the direct cognitive benefits of sewing. This lack of consensus may stem from limited pedagogical understanding of how practical activities translate into cognitive outcomes, as noted by Kolb (1984), who emphasised that experiential learning must be intentionally structured to yield cognitive gains.

Findings from Research Question 2 indicate that while teachers frequently engage pupils in basic sewing tasks, deeper cognitive engagement is largely absent. High mean scores (above 3.5) for introducing sewing tasks, explaining concepts, and organising hands-on activities suggest that sewing is treated primarily as a routine practical activity. However, very low mean scores (1.67–1.74) for linking tasks to cognitive goals, encouraging reflection, adapting tasks to pupils' abilities, and ensuring material availability reveal a significant gap between activity implementation and cognitive intentionality.

This finding corroborates Vygotsky's (1978) sociocultural theory, which emphasises the role of guided instruction, scaffolding, and reflective dialogue in transforming activities into meaningful cognitive experiences. Without explicit connections to cognitive goals or reflective discussions, the potential of sewing activities to enhance higher-order thinking remains underutilised. The results suggest that teachers may lack the pedagogical skills to embed cognitive objectives into practical lessons, thereby limiting learning outcomes.

The study identified several challenges that hinder the effective integration of basic sewing activities, including inadequate teacher training, limited instructional time, insufficient administrative support, lack of materials, and pupils' frustration with sewing tasks. Inadequate training emerged as the most significant challenge, reinforcing earlier findings that teachers struggle to link sewing activities to cognitive development. This supports Darling-Hammond's (2017) assertion that teachers' instructional competence is strongly influenced by the quality of professional preparation and ongoing training.

Time constraints and lack of administrative support further compound these challenges, echoing findings by Fullan (2007), who argued that curriculum innovations often fail when institutional support and scheduling flexibility are lacking. Pupils' frustration with sewing tasks may also reflect insufficient differentiation and scaffolding, which are essential for maintaining learner motivation and persistence (Vygotsky, 1978).

The findings on strategies indicate moderate agreement among teachers on measures to improve engagement and integration of sewing activities. Professional development training was identified as the most effective strategy, underscoring the need to build teachers' pedagogical capacity. This is consistent with literature emphasising that continuous professional development enhances teachers' ability to implement innovative and learner-centred practices (Darling-Hammond, Hyler, & Gardner, 2017).

Government provision of sewing kits and resources was also strongly supported, highlighting the importance of material availability in experiential learning environments (Kolb, 1984). Although collaboration with vocational instructors received mixed responses, literature suggests that interdisciplinary collaboration can enrich classroom practice by bridging theory and practice (UNESCO, 2015). Additionally, allocating time for creative activities and promoting peer learning align with Dewey's (1938) view that social interaction and creative expression are central to meaningful learning.

Conclusion

Findings from this study necessitate the conclusion that there was some recognition of sewing's ability to encourage creativity and imagination, but people were still not careful about its cognitive benefits. Teachers often had students do simple sewing tasks like threading and knotting, but they rarely used activities that encouraged higher-order thinking, such as reflection, setting cognitive goals, and differentiated instruction.

The results also showed that there were big problems, such as not enough training, not enough time, not enough help from the administration, and students being frustrated. It was recognized that there were shortages of materials, but they were not the most important problem. Teachers somewhat backed strategies like professional development, providing resources, and working together with peers to improve practice. In conclusion, although basic sewing activities exist in classrooms, their capacity for cognitive enhancement is insufficiently leveraged due to systemic and pedagogical impediments.

Recommendations

The following recommendations were made;

1. Professional development should be a top priority to teach teachers not only how to sew well but also how to make sure that these tasks fit with cognitive learning goals.
2. Workshops and ongoing training can help teachers become more skilled and confident, which will let them plan more interesting and mentally stimulating activities.
3. Schools should have enough sewing supplies and kits to make it easier for students to get things done.
4. Curriculum planners ought to designate time expressly for practical and creative learning, thereby mitigating the tension between vocational and academic obligations.
5. School administrator should push for new ways of teaching and give teachers rewards for including sewing in their lessons.
6. Teachers can also benefit from working together in ways like team teaching and peer mentoring.

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COMBATING THE CHALLENGES OF RURAL ILLITERACY IN NIGERIA THROUGH ADOPTION OF EARLY CHILDHOOD EDUCATION POLICY

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Abstract
Rural illiteracy remains an unabated challenge in Nigeria. There have been long-standing disparities in educational access between urban and rural areas. Despite various reforms, rural communities continue to face significant challenges, ranging from poor policy implementation to inadequate infrastructure, as well as limited early learning opportunities. This paper argues that Early Childhood Education (ECE) holds transformative potential in addressing these foundational gaps. The paper identifies key stumbling blocks that may hinder ECE implementation, such as inadequate funding, low parental awareness, weak policy enforcement and poor infrastructure. Nevertheless, it posits that with increased government commitment, context-specific policy and community-based support, ECE can play a key role in abating educational gaps, especially between the rural and urban areas in Nigeria. The paper therefore advocates for inclusive, context-sensitive policies and increased investment in rural ECE programs.
Keywords*:* Illiteracy, Rural literacy, Early Childhood Education, context-specific policy,

Introduction

Rural illiteracy remains *an unabated* educational challenge in Nigeria (UNESCO, 2021).
There have been long-standing disparities in educational access between urban and rural areas.
Despite various reforms and government interventions such as the Universal Basic Education(UBE) programme, ' No child must be left behind' and other literacy campaigns, rural communities continue to face significant challenges, ranging from poor policy implementation to inadequate infrastructure as well as limited early learning opportunities (Aguh & Olutola, 2022). Statistics reveal that while urban literacy rates are relatively encouraging, standing at approximately 69% with adult literacy at 73.2%, rural areas continue to lag significantly behind with an estimated literacy rate of only 49% (National Bureau of Statistics, 2021). This urban–rural dichotomy reflects big–seated structural and socio-economic differences that inhibit access to quality education in rural Nigeria (Olalowo& Babalola, 2024). This challenge is also aggravated by the country's wavering population of out-of-school children, estimated at 10.5 million, the highest in sub-Saharan Africa, with the majority concentrated in rural regions (UNICEF, 2022). Children aged 6–14 in these communities experience a dropout rate as high as 82.1%, in contrast to 17.9% in urban centres. This educational marginalisation is a product of a complex interplay of factors, which are: inadequate infrastructure, poverty, cultural and gender biases, inadequate, qualified teachers and weak policy implementation at the local level (Aguh & Olutola, 2022). Consequently, rural children are often denied foundational learning opportunities, thereby perpetuating intergenerational cycles of illiteracy and poverty (Skoufias*et. al*., 2021).

The global attention on early childhood education is not erroneous. This is because global works and national indices have shown that the most effective way to combat long-term educational failure is through early intervention (UNESCO, 2016). Early Childhood Education is defined by UNESCO as educational programs targeting children from birth to eight years. ECE is widely recognised for its capacity to improve cognitive development, enhance school readiness and boost long-term academic success. Research also shows that children who receive quality education before the age of six are more likely to succeed in school (UNESCO, 2016). ECE has been linked to a reduction in dropout rates, increased lifetime earnings and higher school

completion rates. Empirical evidence from both developed and developing countries underscores that investments in quality ECE yield substantial returns in literacy, social behaviour, and economic productivity (Heckman, 2006; Engle *et. al.,* 2011). Hence, ECE is of great necessity in Nigeria's rural community as a result of her severe educational set back. To this end, this paper presents a critical opinion on the potential of ECE to address rural illiteracy in Nigeria. It claims that without a firm policy focus on early childhood development, specifically within the rural contexts, efforts to bridge Nigeria's literacy gap will continue to fail.

In the Nigerian context, ECE is yet to receive the deserved attention, especially in rural areas where educational deprivation is paramount, which is a product of decades of neglect, systemic inequality, and policy inconsistencies. According to the National Bureau of Statistics (2020), literacy rates in urban areas stand at approximately 79%, whereas rural areas lag far behind at about 46%. This discrepancy is even more pronounced among women, with many rural females remaining completely excluded from formal education due to early marriage, household responsibilities, or cultural restrictions (UNICEF, 2022). In addition to this, though the National Policy on Education acknowledges the importance of early childhood care and development education (ECCDE) in Nigeria, implementation remains a major unabated challenge, with limited government funding and limitation of infrastructure dedicated to rural ECE centres. Furthermore, many existing programs are either poorly staffed or completely reliant on private and community-based initiatives, which often lack the capacity to deliver sustained and inclusive learning experiences. The adoption and systematic implementation of an early childhood education policy, specifically tailored to rural contexts, holds the potential of bridging the observable gaps in Nigeria's rural-urban literacy. By fostering foundational literacy and numeracy skills before the formal school age, ECE can mitigate school adjustment, dropout rates, enhance school attendance and create a more equitable educational trajectory for children in rural communities. A well-structured ECE policy could serve as a critical entry point for lifelong learning and development, ultimately contributing to national goals of education for all and inclusive growth.

Ultimately, this paper intends to give a deeper understanding of how early childhood education, when effectively harnessed, can become a transformative tool for breaking the cycle of illiteracy in rural Nigeria and promoting equitable educational opportunities for all children, regardless of their geographic or socio-economic background. Thus, this paper looks into exploring how the strategic adoption and expansion of early childhood education policies can serve as a viable response to rural illiteracy in Nigeria. By addressing the barriers, examining current gaps and success factors in rural education delivery, the research paper intends to provide actionable policy recommendations for achieving equitable literacy outcomes nationwide.

The Concept of Early Childhood Education in Nigeria

Early Childhood Education (ECE) in Nigeria refers to the structured programmes designed for children aged 0 to 5 years, usually before they enter primary school. It is often called Early Childhood Care and Education (ECCE), as it blends both nurturing and learning. The idea is simple but powerful. It is to give children a solid head start mentally, emotionally, socially and physically, before formal schooling begins. The National Policy on Education (NPE), first developed in 1977 and revised multiple times (the latest in 2013), recognises ECE as the foundation for lifelong learning. The government defines it as "the care, protection, stimulation and learning promoted in children from age 0 to 5 in a variety of settings like crèches, nurseries, preschools and the home." In fact, the Universal Basic Education (UBE) Act of 2004 includes one year of pre-primary education as part of the 9-3-4 system, though in practice, implementation has been patchy (Aguh & Olutola, 2022). In rural areas, ECE is often nonexistent or informal. Where centres exist, they lack trained caregivers, appropriate learning materials, and child-friendly environments (Olalowo & Babalola, 2024). Some caregivers simply function as babysitters rather than educators, leaving children without foundational knowledge in numeracy, language, and social skills, which often leads to early dropout (World Bank, 2023).

In the Nigerian context, the focus of early childhood education is not just about academic readiness; it's about equity. It's about giving every child, regardless of gender, geography or social class. When well implemented, ECE helps bridge the gap between the privileged and the underserved, between urban and rural ,and between the rich and the poor.

Policy Gaps in Early Childhood Education in Rural Nigeria

Despite the official recognition of Early Childhood Education in Nigeria's educational policy documents, what

exists on paper doesn't always reflect what happens on the ground, especially in rural communities. Several critical gaps and systemic barriers continue to frustrate efforts in using ECE as a tool for equity and social transformation. Among these are,

Policy Implementation Disconnect
Nigeria's National Policy on Education includes provisions for ECE also, the Universal Basic Education Act makes one year of pre-primary education compulsory, but this is not visible in a rural village where there's no preschool teacher, no classroom and no budget allocated for ECE(Aguh&Olutola, 2022). Hence, there are good policies with poor implementation. There's a clear disconnect between vision and delivery.

Underfunding and Misallocation of Resources
Rural ECE programmes receive limited budgetary allocation, which in turn results in poorly equipped centres, inadequate learning materials and dilapidated infrastructure. The funds earmarked for ECE are often diverted or poorly accounted for, leading to persistent neglect (World Bank, 2023). This undermines trust and hampers progress.

Shortage of Trained and Qualified Personnel
A lack of trained early childhood educators means that rural children are not receiving the structured learning they need (Skoufias *et al*., 2021). In most cases, educators assigned to ECE classes are untrained and have never received on-the-job training.

Poor Infrastructure and Learning Environment
Many rural ECE centres, where they exist at all, operate in dilapidated buildings, under trees, sheds or in borrowed spaces with the absence of basic facilities such as toilets, play materials, safe water or teaching aids (Aguh & Olutola, 2022). This is especially problematic for very young children, who need a safe, stimulating and healthy environment to learn. The absence of child-friendly infrastructure, which can be likened to an enabling environment, contributes to poor attendance, low enrolment and high dropout rates, particularly for girls.

Lack of Community Sensitisation and Parental Engagement
Parents, particularly those who are illiterate, often do not appreciate the value of ECE (Benedicta, 2024). ECE works best when families and communities understand its value and are actively involved. But in many rural areas, parents are either unaware of ECE's importance or do not see it as a priority compared to subsistence farming or household labour. This challenge is made worse when caregivers themselves are illiterate or disengaged from formal education systems. Among others are inequitable access and gender disparities, weak Monitoring and Evaluation Frameworks

From above, it is clear that Early Childhood Education has great potential to transform rural communities, but the barriers are equally significant. These are not challenges that can be solved overnight. But they can be addressed systematically, persistently and honestly. Hence, there is a need for theories to meet with actions. To close this gap, Nigeria must rethink how it designs, funds, monitors and delivers early education, especially in areas that need it the most. This brings us to the next stage: applying theoretical frameworks like Bronfenbrenner's Ecological Systems Theory and Human Capital Theory to guide reforms and reimagine what is achievable.

Challenges Confronting Rural Illiteracy in Nigeria
Illiteracy in Nigeria, especially in rural communities, is not just a present-day crisis. It's the visible result of a long history of neglect and systemic imbalance (Aguh & Olutola, 2022). Women and girls face particular disadvantages, with early marriage and domestic responsibilities reducing their access (UNICEF, 2022). According to the National Bureau of Statistics (2020), urban literacy rates hover around 79%, rural areas tell a starkly different story, struggling at approximately 46%. Much more is the gender factor. Women and girls in rural Nigeria face a double jeopardy, beyond the general limitations of their environment, cultural practices, early marriage, and unpaid domestic labour, further rob them of educational opportunities. UNICEF (2022)

reports that a significant number of rural girls have never stepped into a classroom, not necessarily because they lack interest or ability, but because their circumstances simply won't allow it.

Another factor is the deep and persistent poverty associated with Nigeria's rural community. Many rural families cannot shoulder the costs of uniforms, school shoes, books, transportation, or even midday meals, despite policies promising "free education." It's one thing for education to be officially free; it's another for it to be practically accessible. There is also the issue of teacher apathy. It's not always fair to blame individual teachers, though. Many are overworked, underpaid, poorly supervised and rarely offered professional development. With little incentive or support, some become indifferent, which definitely leads to uninspired learning or learning not taking place at all.

Another silent but powerful driver of rural illiteracy is parental illiteracy. Many caregivers, particularly in rural Nigeria, have had little or no schooling themselves. They may struggle to support their children's learning at home, while some may not even see the need for formal education in the first place. This intergenerational cycle of ignorance is hard to break without targeted interventions (World Bank, 2020). Moreover, infrastructural decay and weak governance further entrench these challenges. Schools in rural areas hardly have desks, toilets, or even roofs. Sometimes sheds are used as a classroom without safety and hygiene being put into consideration. Where some are miles away from children's homes, requiring daily treks that are neither safe nor sustainable. Insecurity in certain regions adds another layer of difficulty, causing families to keep their children at home out of fear.

Furthermore, there are language barriers which can't be overlooked as well. Nigeria's rich linguistic diversity is a beautiful thing culturally, but in rural classrooms, where English is employed as a medium for teaching, children may struggle to understand or engage, especially if the teacher does not speak the local dialect. Without mother-tongue instruction at the early stages, many children may fall behind before they even begin. None of these are not isolated issue. They are interconnected; poverty feeds into poor parental education; that influences school attendance; inadequate infrastructure discourages learning, and so on. It's a web that continues to entangle millions of rural Nigerian children, keeping them far from the kind of future they deserve.

To meet Sustainable Development Goal 4, ensuring inclusive and equitable quality education for all, Nigeria must go beyond slogans and paperwork. There is a need for proactive grassroots solutions to address these root challenges. One of the most promising starting points is early childhood education (ECE) that is designed with local realities in mind and implemented equitably. ECE can help lay a strong foundation for lifelong learning, especially for children in rural areas.

Learning from other African Countries

Across the African continent, several countries, despite facing similar economic constraints, infrastructural deficits and cultural complexities, have found creative ways to expand access to Early Childhood Education (ECE), especially in underserved rural areas. These experiences offer practical insights and valuable lessons that Nigeria can thoughtfully adapt, rather than starting from scratch.

Take Kenya, for example, flexibility and local innovation have been key. Recognising the needs of nomadic and rural communities, Kenya introduced learning models that use local materials such as stones, sticks, songs and folktales to teach young learners through play and storytelling. Mobile ECE units were also piloted to reach remote areas. The implication here is that early learning does not require imported toys or shiny classrooms. Nigeria can adopt similar cost-effective but culturally relevant models that reflect the lived experiences of rural children. Innovation, not perfection, is what opens the door to early education in tough environments.

Also, Ghana provides a different kind of example, one which is rooted in policy boldness. Ghana makes two years of kindergarten compulsory and integrates it into its Universal Basic Education system (Engle *et. al*., 2011). She sent a strong signal that ECE is foundational and not optional. The country backed this with public campaigns and teacher training, resulting in increased rural enrolment and better school preparedness. This highlights a crucial truth for Nigeria that policy declarations mean little without implementation. While Nigeria already recognises ECE in its National Policy on Education, enforcement remains weak. Making ECE genuinely compulsory, especially in rural areas, requires not only federal commitment but also state-level enforcement and grassroots awareness to shift cultural attitudes.

South Africa's approach centres on collaboration and regulation. The country's National Integrated ECD Policy

ensures cooperation between education, health and social development sectors. The South African government employs both public and private partnerships as a major player in supporting rural ECE centres, from funding to curriculum development. This multi sectoral model serves as a wake-up call for Nigeria that ECE cannot be left to the Ministry of Education alone. It needs to be treated as a shared responsibility across government levels and ministries, with NGOs and faith-based groups included not just as gap fillers, but as regulated partners in national development.

Lastly, Ethiopia's "O-Class" (one year of pre-primary education attached to primary schools) is a model Nigeria could adapt (UNESCO, 2016).

Other African countries show that ECE progress comes from practical action and local involvement. Nigeria should follow suit by using available resources, training caregivers, adapting curricula, and integrating services, making ECE a well-funded national priority to combat rural illiteracy and drive inclusion.

Conclusion

Rural illiteracy remains one of the most entrenched barriers to Nigeria's socio-economic development. Despite decades of educational reforms, a great population of rural children has continued to suffer from low literacy rates due to limited access to quality foundational learning. This paper has argued that the adoption and effective implementation of Early Childhood Education (ECE) policy presents a transformative solution to this challenge.

ECE lays the cognitive and social-emotional groundwork necessary for lifelong learning. When children are exposed early to structured learning environments, especially those grounded in play, language and stimulation, they develop the literacy and school readiness skills critical for academic progression. As shown through both Nigerian realities and international case studies, ECE has the power to bridge the educational equity gap between urban and rural populations.

However, realising this potential demands a concerted and strategic effort. Legal recognition of ECE helps increase public investment, teacher capacity building, and the localisation of curricula, which are all vital components of a successful rural ECE policy. Additionally, the importance of community participation and inter-sectoral collaboration cannot be emphasised. Effective implementation must be guided by data, equity principles and a strong political will to prioritise early learning as a national imperative.

Nigeria stands at a pivotal juncture. With over 40% of its population residing in rural areas and millions of children still out of school, investing in early childhood education (ECE) is not merely an educational strategy but a developmental necessity (National Population Commission [NPC] & ICF, 2019; World Bank, 2021; UNICEF, 2022). As this paper has highlighted, the long-term benefits of reducing rural illiteracy through ECE include improved school outcomes, economic productivity, and social cohesion. By acting decisively now, Nigeria can lay the foundation for a more literate, inclusive and prosperous future.

Suggestions

To effectively combat rural illiteracy in Nigeria through the adoption and implementation of Early Childhood Education (ECE), a set of evidence-based, context-sensitive policy recommendations is essential. These recommendations address the structural, institutional, and socio-cultural challenges previously outlined and are geared toward building a robust and inclusive ECE system that can catalyse literacy development in rural communities.

1. **Enshrine ECE as a Legal Right in Nigeria's Education Act:** Nigeria should make ECE compulsory and legally enforceable by amending the UBE Act to include free education for ages 0–5. This would ensure government investment, protect rural children's rights, and attract support from development partners.
2. **Increase Government Budgetary Allocation to ECE:** Nigeria must increase ECE funding across all government levels, aligning with UNESCO's 10% recommendation. Funds should Specifically support rural infrastructure, materials, welfare, and teacher training, with transparency mechanisms to ensure accountability.
3. **Develop a National ECE Implementation Framework:** A clear national implementation framework is needed to guide ECE rollout in rural areas, outlining quality standards, government roles, timelines, and monitoring. It should also integrate health, nutrition, and child protection services.
4. Prioritise **Rural ECE Teacher Recruitment and Capacity Building:** Policies should focus on recruiting and retaining ECE teachers in rural areas through targeted incentives such as rural posting allowances, housing

support and career progression pathways. Regular in-service training and mentorship programs must be established to maintain quality standards.

5. **Promote Community Participation and Ownership :**Government policies must encourage active community involvement in ECE centre management. This can be achieved by tailoring the curriculum to local culture and language, which also boosts community support and relevance.

6. **Establish Robust Monitoring and Evaluation (M&E) Systems: P**olicies should establish data systems to monitor access, equity, and quality in rural ECE, using disaggregated data to guide planning. Involving communities enhances transparency and makes policies more responsive.

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ESTABLISHMENT OF EARLY CHILDHOOD EDUCATION COMMISSION: A PANACEA TO FUNCTIONAL EDUCATION IN NIGERIA

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Abstract
This paper considered the establishment of early childhood education commission as the panacea for functional education in Nigeria. Its introduction centred on the fact that attainment of the goal of any educational policy is a function of its implementation reality. It noted that for implementation of educational policy to be achieved, there must be a distinguished body and personnel saddled with the responsibility of advicing, directing, promoting, and facilitating possible implementation process, hence through it policy goals can be attained. It further focused on the fact that early childhood education programme which is established to preparing children for primary education geared toward functional productive outcome tends to be crawling. This paper identified that legal framework of age coverage 6-15 years of universal basic education commission has tactically kept the policy of early childhood education at an orphanage posture, hence there is inadequate implementation reality of the policy at all nooks and crannies of the nation. The paper thus opined for the establishment of early childhood education commission as, this will guarantee parental coverage for support and implementation reality. Specifically, Nigeria government should as a matter of legal operational framework should establish an educational commission with a structural framework that will oversee implementation reality of early childhood educational programme from birth to five years of ages.
Keywords: Early Childhood, Education Commission, Implementation, Functional Education

Introduction

The hall mark of educational programme is to impart knowledge to the learner. However, the impartation of knowledge to the learner through any educational programme may not be a mere mental wishful exercise rather, a function of formally established education commission with legal framework and operational reality that has the capacity to indicate and monitor implementation reality of such educational programme. The logic of this expression may attract the thought that without the establishment of a formal educational commission that has the capacity to initiate and monitor the implementation of educational programme, the attainment of such educational goal may not be possible. On this lies a functional knowledge impartation reality that can promote human capital development in any society. It further speaks volume of a formal foundational learning

arrangement of a school system in an educational institution that is consciously established to direct the process of achieving growth and development for individual and nation at large.

This line of reasoning is in congurance with the posture of Nwaelele (2022) whose posture on functional education for productivitypoints to conscious initiative of educational commission that can direct implementation realities for knowledge and skill acquisition through the process of converting ideals and theories into instructional content. The interpretation of this expression may suggest the achievement of a functional educational system for productivities requires an implementation machnizm that will ensure that instructional contents are intetanden with human needs at a giving time.

It therefore become exercise for a shift from the hitherto act of learning to pass exam to acquisition of appropriate competence, confidence and skills of transforming theories, ideas of classroom instruction to practical realities of productive process that can meet the taste of time. Its goal may not be separated from an expected devidence of the logic of education as an instrument per excellence. Such expectation is equally an intended proof of learning outcome among learners who passed through a quality foundational learning activities of early childhood education programme.

Like an expectant mother, whose reproductive obligation attracts public obvious projection of nine months interval for the delivery of a baby based on natural providence, early childhood education policy as a scheme of foundational process that has assumed an intended formal learning arrangement is expected to promote functional education in Nigeria. Its hallmark which anchors on foundational preparation of preschoolers for primary education programme corroborates the affirmation of the fact that it is only preschoolers who passed through quality formal early childhood education process are most likely to successfully complete their primary, post-primary and tertiary education, thus possessing functional attitude to issue of life, relevant knowledge, confidence, competence and skill that can contribute to national development Amadi (2021).

An inference from the above assertion attracts the consideration of reality of operation associated with early childhood education programme with projected expectation of great dividence for functional education that can promote individual and national development. As inferred by Tombowua (2020), the nativity of formal early childhood education programme in Nigeria which stem from the (1977) National Policy on education attracts a chronological posture of about fifty years of formal existence of childhood educationformation and implementation process. Its age therefore is expected to yield fruitful learning outcome in the lives of Nigerian youth that can showcase proven capacity index capable of conquering ignorance and incompetency. Which inturns yield rightful attitude to issues of life, and grantee acquisition of practical skills that can convert classroom instructional contents, theories and ideas into useful and logical productive adventure that can stimulate economic advancement and national development.

Since the facts of this expression tends to hold salient logic, the expectation of the dividence of early childhood education policy that is made manifest in competency, confidence, creative thinking and productive skills among school learners geared towards problem solving abilities among Nigeria may not be out of context. The veracity of the immediate past line of reasoning may have prompted the worry Aluyu*et. al*., (2019) who questioned the reality of early childhood education programme in the lives of the majority of Nigerian youth whose abysmal performance index in classroom instructional delivery exercise in school, internal and external examination in both primary, secondary and higher institution points to a seemingly evidence of inadequate functional education practice that can promote productive learning outcome. It equally corroborates the reality of obvious deficiencies of inadequate capacity index of being competent confidence, creative in productive skills that can convert classroom instructional content to practical efforts that can solve real life challenges among school leaves (Rayode&Adegba, 2024).

The obvious nature of this assertion can further be substantiated by the posture of Adebisi *et. al.,* (2024) who declared that the inability of school graduates in Nigeria to become employers of labour in the absence of expected government provision of employment opportunities speak volume of a poor foundational human capital development exercise that is at variance with the dividence of functional education practice in both primary, secondary and tertiary institution in Nigeria. This evidence may not be unconnected with the contemporary high level of unemployment and poverty in Nigeria (Rayode&Adegba, 2024).

The potency of these facts gives credence to an unconscious crucifixion of the logic of education as an instrument per-excellence slogan as indicated by Nigerian National Policy on Education (2004); it is equally a practical proof of an educational system that lacks functional practices for productive learning outcome which is

a fertile ground for stunted human capital development, low quality of graduate, social/cultural problem, personnel deficiency, lack of basic skill, bribery and corruption, financial constraints, low level of productivity and high level of poverty (Okeke 2021)

The fact that it is difficult to boldly refute the logic of these facts indicates that the perennial increase among Nigerian for the demand for effectiveness of early childhood education programme may not be out of context. Such evidence which tends to depict lack of goal attainment associated with early childhood education attracts a reflection of the reality of functional education that lubricated the fulfillment of education as an instrument per-excellence among developed nations is imperative. As indicated by Kayode andAdogba (2024), the success story of positive developmental breakthrough among developed nations like Finland, Japan, China, France, Canada, Singapore among other cannot be separated from their unwavering initiative, commitment to functional education through the establishment of distinguished body and commission for practical implementation reality towards functional education process. This is in synergy with the posture of Asamoah andAbarichae (2023) who adduced that educational policy initiative that has no functional operational personal and structural/legal framework for implementation may not yield fruitful evidence.

An inference from these evidence points to the establishment of educational commission that will facilitate practical implementation process geared towards the attainment of educational policy. Attracted to the importance of educational commission that can direct educational policies and its affairs of instructional delivery exercise for functional education, Egbebi (2024) acknowledge the declaration of president Olusegu Obaanjo on September 30, 1999 while lunching universal basic education in Nigeria that the establishment of universal primary education commission in 1976, created a fertile ground and step for functional education from 1976-1980. Irrespective of the fact that inadequate planning hindered its appreciable existence, the establishment of this commission remains a landmark for functional education take off in Nigerian educational landscape. Functional inference from the lesson and benefit of universal primary education attracted its reformation in September 30, 1999 to universal basic education with the focus on covering six years of primary education and three years of junior secondary school programme.

Universal basic education commission which is poised towards ensuring the impartation of appropriate level of literacy, enumerative, manipulative, practical life skills, ethical, moral and civil values needed for a solid foundation and lifelong learning among other four objective was approved by the national assembly as universal basic education bill on March 18, 2004 and signed into law by president Olusegun Obasanjor on May 26, 2004 (Egbebi, 2024).This law make it mandatory for government to make adequate provision for free and compulsory basic education programme for children from 6-15 year of age.

Deducible from the attributes of this commission and its associated binding educational law is the fact that it only covers children from 6-15 years without a recourse to the most significant task of laying quality foundation for the most vulnerable category of human existence known as early childhood. The structure, legal and operational framework of this commission of basic education which has not been abolished in Nigerian basic education system exposes the early childhood education to an orphanage position. This assertion can be exemplified in the following: ***Poor Funding*****as it appears, Nigeria educational system allocates less than 12% of its annual budget to educational sector which is far below 26% as recommended by UNESCO.*****Poor Implementation*****lack of political will, corruption and inadequate infrastructure makes the existence of Early Childhood Education of no effect especially in rural areas.*****Unequal Access*****majority of most valuable children in Nigeria do not have access to formal early childhood education due to lack of presences and operational realities of early childhood educational programme at all nooks and crannies of the nation which under minds UNESCO directive of taking the school to the child. The survival of this educational defeat may not be separated from the nonexistence of formally established early childhood education commission that has legal framework and operational capacity of initiating and implementing early childhood education programmethat will facilitate the attainment of National Policy on early childhood education in Nigeria.**

It is on this backdrop that the need for distinguished educational commission that will facilitate, monitor and direct the affairs of early childhood education programme become imperative. This study will therefore consider different basic educational commission structural framework and function and the implication of its structural framework to the attainment of functional education in Nigeria.

Establishment of Educational Commission

Like a newly born baby that requires quality directives for guidance and purpose of developing primary quality attitude and practical skill for lifelong learning, the establishment of educational commission is an undisputable implementational step geared towards the fruitful class instructional delivery exercise which in turn promotes functional education. The logic of this preface is suggestive of the fact that educational commission is a distinct government affiliated agencythat monitors, support and direct the attainment of goal of educational policy of a nation. This view adds functional flesh to the position of Khaleduzzan (2024) whose idea on the concept of educational commission points to specific obligation agency of government educational outfit established to oversee, promote and facilitate implementation task of instructional delivery personnel for the attainment functional education of a state and nation. It equally affirms the thought of Biswajit *et. al.,* (2024) which categorized educational commission as the operational organ of government established educational policy and programme that stimulates functional impartation of knowledge, skill, confident and competence for productivity

Deducible from this description is the fact that educational commission is launching pad of instructional delivery implementation track for functional education. It speaks volume of an operational compass in an educational system that evaluates the content of educational policies geared towards the identification of implementation inadequacies for the purpose of remediation. Substance of this expression is closely related with the posture of Chimea (2024) who identified that educational commission are statutorily saddled with the following.

Policy Development: Practical ideas and steps of creating and implementing educational policies to enhance quality or functional education.

Standard Setting: Facilitating of minimum standard of operation of instructional content, and assessment procedures.

Funding/Utilization of Allocation: Promoting the need for equitable resource allocation promotion of personnel and motivational tasks of employee.

Research and Development: Promoting fact finding that will stabilize police and direct implementation requirement. This attribute constitutes operational structural framework that can make educational policy more realistic and effective for functional education process.

Existing form of Basic Education Commission

Presently, there are two existing basic education commission that are established to direct the activities and operational reality of foundational school system (primary and junior secondary school).

National Primary Education Commission (NPED): This body was established on August 31, 1988 by General Ibrahim Babamasi Babangida. The structural and legal framework of this commission took the basic educational philosophy of ensuring that the primary school education programme receives strength to function as an instructional delivery channel that can lay quality foundation to Nigerian children. As adduced by Ojo and Azeez (2024), it was established for the following:

Mandate: Prescribe minimum standard for primary standard for primary education throughout Nigeria.

Structure: Provide for establishment of primary school management board at all state and local government level.

Functions: To ensure acceptable standard towards the implementation of primary education in Nigeria. Worthy of note is the fact that the structural framework of this educational commission lacks the existence and implementational coverage for early childhood education programme.

Universal Basic Education Commission

Universal basic education commission is yet another government agency established on September 31, 1999 by President Olusegun Obaanjo, its establishment may not be separated from the acknowledgement of the shortcoming of Universal Primary Education Commission (UPE) of September 1976. The identification of inability of universal primary education board to facilitate practical implementation of functional education due to inadequate planning as inferred by Ojo and Azeez (2024) necessitated the transformation effort of government through a more pragmatic philosophy and ideological framework for functional education. Its focus

was basically to provide basic free and compulsory education for Nigerian children within the primary school educational level and junior secondary school of 6-11 year of age.

Implication of Existence of the Basic Education Commission towards the Implementation Reality of Early Childhood Education in Nigeria

One remarkable defeat that can be identified from the existence of national primary education commission and universal basic education commission as an outstanding structural and legal framework that covers educational level of children from 6-15 years of age is the fact that these commissions have a deficiency of implementational reality that had denied the early childhood education programme adequate and functional care for productive implementational reality. As observed by Aliyu,*et. al* (2019) absence of a distinguished structural and legal framework for implementation reality of early childhood education points to a great disadvantage to care and legal implementation strength and directive for operational reality to early childhood goal attainment.

Related to this is the observation of Tombawua (2019) who noted that the philosophical idea towards the establishment of early childhood education which is targeted at preparing children for primary school education is basically a step in the right direction toward early foundation for emancipation of Nigerian children from ignorance and lack of knowledge however, the implementation reality has structural and legal deficiency because of inadequate care and effort for ensuring that the philosophy is practiced at all nook and crannies of the states of Nigerian nation.

The fact associated with these observations attracts the consideration of Heric (2022) whose consideration on the success story of educational practices in Finland indicated the use of functional operational mechanism that has the strength, commitment, resources ofputting educational organization ideas into practice. Since such operation may not be separated from a distinguished commission that will be saddled with the responsibility of directing, monitoring and promoting the implementation requirements of each educational policy, the need for the establishment of a distinct commission known as early childhood education commission cannot be overemphasized.

Conclusion

Education as an instrument per-excellence slogan which is focused towards functional education that has the capacity to transform classroom instruction content and ideas into practical skills that can equip individual for productive adventure towards national development cannot be achieved without quality implementational practices. Since the potency of quality implementational reality is a function of identification of what to do, personnel to use, agency to adopt and resources for implementation reality, the need for establishment of such a body called early childhood education commission is a step in the right direction to a functional education in Nigeria. Specifically, Nigeria government should as a matter of legal operational framework should establish an educational commission with a structural framework that will oversee implementation reality of early childhood educational programme from birth to five years of ages

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EMPOWERING EARLY CHILDHOOD TEACHERS IN NIGERIA THROUGH GOVERNMENT-SUPPORTED AI TRAINING AND DIGITAL LITERACY INITIATIVES

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Abstract
Early childhood education (ECE) in Nigeria faces persistent resource and skill gaps, with many teachers lacking digital competencies needed for 21st-century pedagogy. This study evaluated a government-supported AI and digital literacy training pilot programme for ECE teachers, examining its impact on technological skills and instructional quality. Using a case study design, the researchers assessed 824 trained early childhood teachers through pre/post surveys, interviews, and classroom observations across six southwestern states (Lagos, Ogun, Oyo, Osun, Ondo, and Ekiti). Quantitative data analysed using paired t-tests and multiple regression showed significant gains in digital competency (mean scores improved from 2.3 to 4.1, $p < 0.001$) and AI literacy. Qualitative thematic analysis revealed increased teacher confidence in technology integration and improved pupil engagement. Multiple regression analysis found that AI knowledge and tool usage significantly predicted teaching skills improvements. The findings demonstrate that government-led training can transform ECE by building teacher capacity aligned with Nigeria's digital learning goals, enabling personalised, engaging instruction that advances children's development. Recommendations include scaling such initiatives with sustained support and infrastructure development.
Keywords: Early Childhood Education, Digital Literacy, Artificial Intelligence, Teacher Training, Technology Integration, Professional Development

Introduction

Early childhood education (ECE) represents a critical foundation for lifelong learning and development, yet Nigeria's ECE sector continues to face significant challenges, including resource constraints, infrastructure deficits, and skill gaps among teachers (Bello & Ajao, 2024). The integration of Artificial Intelligence (AI) has emerged as a transformative strategy for addressing these systemic challenges, with recent interventions demonstrating that AI-assisted educational programs can achieve learning gains equivalent to nearly two years of typical learning in just six weeks in Nigerian contexts (World Bank, 2024).

The Nigerian government has demonstrated commitment to digital transformation through comprehensive policy frameworks. The National Information Technology Development Agency (NITDA), established in 2001, aims to achieve 70% digital literacy by 2027 through the Digital Literacy for All (DL4ALL) program (NITDA, 2023). Despite these initiatives, ECE teachers face significant digital literacy gaps, limited access to technology, inadequate training opportunities, and insufficient institutional support for digital integration (Bello & Ajao, 2024). AI literacy has become crucial in digital education research, with AI tools increasingly used in ECE to enhance learning and development (Ogunode *et al.,* 2024; Zhang *et al.,* 2024). In underserved regions, well-trained AI could provide access to high-quality educational resources and personalised learning experiences (World Bank, 2024). The Nigerian government's initiatives include free online courses for teachers, entrepreneurship and digital literacy subjects in the curriculum, and frameworks for licensing private organisations' digital literacy training (NITDA, 2023; Bello & Ajao, 2024).

While previous research has documented AI's potential in education and the importance of digital literacy training, gaps remain in understanding how these elements can be effectively integrated to support ECE teachers in Nigerian contexts (Ogunode *e. al*., 2024; Zhang *et al*., 2024). This study addresses this gap by examining a pilot government-supported AI training initiative specifically designed for early childhood teachers.

Theoretical framework

This study was grounded in two complementary theoretical frameworks: the Technology Acceptance Model (TAM) and Social Cognitive Theory (SCT), providing a comprehensive lens for understanding how early childhood teachers adopt and integrate AI technologies into their teaching practices.

Technology Acceptance Model (TAM)

The Technology Acceptance Model, developed by Davis (1989), posits that technology adoption is primarily determined by two key factors: perceived usefulness and perceived ease of use. Perceived usefulness refers to the degree to which an individual believes that using a particular technology would enhance their job performance, while perceived ease of use refers to the degree to which an individual believes that using the technology would be free of effort.

In the context of this study, TAM provides a framework for understanding how early childhood teachers' perceptions of AI tools' usefulness and ease of use influence their intentions to integrate these technologies into their teaching practices. The government-supported training programme aimed to enhance both dimensions, demonstrating AI's practical benefits for ECE (perceived usefulness) while building technical competencies that reduce implementation barriers (perceived ease of use).

Social Cognitive Theory (SCT)

Social Cognitive Theory, developed by Bandura (1986), emphasises the role of observational learning, self-efficacy, and reciprocal determinism in human behaviour. Central to SCT is the concept of self-efficacy, which is an individual's belief in their capability to execute behaviours necessary to produce specific performance attainments. Self-efficacy influences the choices people make, the effort they expend, and their persistence in facing challenges.

For this study, SCT provides insight into how professional development experiences shaped teachers' confidence in technological integration. The training program incorporated modelling, guided practice, and feedback mechanisms designed to build teacher self-efficacy in the AI tool. The theory suggests that as teachers develop confidence through successful experiences with AI technologies, they become more likely to persist in implementation despite challenges.

Theoretical Integration

The integration of TAM and SCT creates a comprehensive framework for understanding AI adoption in ECE contexts. While TAM focuses on cognitive perceptions of technology characteristics, SCT emphasises psychological factors, including confidence and self-efficacy. Together, these theories suggest that effective professional development must address both technical competencies (ease of use) and pedagogical relevance (usefulness), while building educator confidence through structured, supportive learning experiences.

This theoretical framework guided the study's design, particularly the selection of outcome variables (competency, confidence, practice change) and the development of training program components aimed at influencing these factors.

Statement of the Problem

Despite Nigeria's ambitious digital transformation agenda and the recognised potential of AI in education, early childhood teachers continue to face substantial barriers to effective technology integration. Many ECE teachers lack basic digital competencies required for 21st-century pedagogy, which limits their ability to provide engaging personalised learning experiences. While government initiatives like DL4ALL aim to improve digital literacy, limited research exists on the effectiveness of AI-specific training for ECE teachers or its impact on teaching practices and student outcomes. This knowledge gap hinders evidence-based policy decisions and program scaling efforts needed to transform early childhood education in Nigeria.

Purpose of the Study

This study evaluated the impact of a government-supported AI training and digital literacy initiative on early childhood teachers in Nigeria. Specifically, it examined how participation influenced teachers' technological competencies, pedagogical practices, confidence in integrating AI tools, its implications for educational quality and equity aligned with Nigeria's digital transformation goals. The specific objectives are to:

1. Assess changes in early childhood teachers' digital competency and AI literacy levels following participation in government-supported AI training programmes.
2. Examine the influence of AI training on the early childhood teachers' pedagogical practices and teaching confidence.
3. Identify challenges and implementation barriers affecting the integration of AI tools in early childhood education contexts.
4. Determine factors that predict improvements in teaching skills among trained early childhood teachers.
5. Explore implications of government-supported AI training for educational quality, equity, and alignment with Nigeria's digital transformation goals.

Research Questions

The following research questions guided this study:

1. What is the effect of government-supported AI training on early childhood teachers' digital competency and AI literacy levels?
2. How does AI training influence early childhood teachers' pedagogical practices and teaching confidence?
3. What challenges and barriers do early childhood teachers face in implementing AI tools following training?
4. What factors predict improvements in teaching skills following AI training participation?

Hypotheses

The following null hypotheses were tested at a 0.05 level of significance:
H01: There is no significant difference in digital competency scores of early childhood teachers before and after AI training.
H02: There is no significant difference in teaching confidence levels of early childhood \ teachers before and after AI training.
H03: AI knowledge and tool usage do not significantly predict improvements in teaching skills among trained early childhood teachers.

Methodology

This study employed a case study research design to evaluate the impact of government-supported AI training on early childhood teachers in Nigeria. The case study approach provided an in-depth, contextual understanding of how the training program influenced educator practices within specific Nigerian ECE settings (Yin, 2024). The design incorporated both explanatory and exploratory elements, examining not only training outcomes but also underlying mechanisms contributing to observed changes. The population comprised all early childhood teachers in six southwestern Nigerian states (Lagos, Ogun, Oyo, Osun, Ondo, and Ekiti) who participated in government-supported AI training programs. Using purposive sampling, education centres with basic technological infrastructure, administrative support for digital transformation, and willingness to participate were selected. The final sample consisted of 824 early childhood teachers who completed the AI training program (Federal Government AI Training for School Teachers and AI Academy by the Federal Ministry of Innovation, Science and Technology in partnership with THE COMMONWEALTH and Intel Corporation). For qualitative data collection, purposive sampling was used to select key informants, including 12 PHC facility managers, 12 healthcare providers, and 6 officials from education boards, totalling 30 participants for in-depth

interviews. A structured questionnaire adapted from validated scales used in educational technology research (Burdett et al., 2024) was employed, with modifications for early childhood education and African contexts. The instrument comprised five sections:

1. Section A: Demographic information (age, gender, teaching experience, educational qualification)
2. Section B: Digital Competency Scale (15 items, 5-point Likert scale)
3. Section C: AI Literacy Assessment (20 items, 5-point Likert scale)
4. Section D: Teaching Confidence Scale (12 items, 5-point Likert scale)
5. Section E: Pedagogical Practice Changes (10 items, 5-point Likert scale)

The instrument demonstrated high reliability with Cronbach's alpha coefficients of 0.89 for digital competency, 0.92 for AI literacy, 0.87 for teaching confidence, and 0.85 for pedagogical practices scales.
Semi-structured interview protocols were developed covering:

1. Perceived changes in pedagogical approaches
2. Challenges and barriers to AI integration
3. Impact on student engagement
4. Institutional factors influencing implementation
5. Recommendations for program improvement

A systematic observation checklist was developed to document AI tool usage, digital literacy demonstration, and pedagogical transformation in early childhood settings. Content validity was established through expert review by three professors in early childhood education and educational technology. The instruments were pilot-tested with 40 teachers not included in the main study. Test-retest reliability was assessed with a two-week interval, yielding correlation coefficients ranging from 0.82 to 0.91 for the various scales, indicating strong reliability.
Data collection followed a three-phase approach over six months:
Phase 1 (Pre-training): Baseline surveys administered two weeks before training; demographic data and pre-training competency levels collected.
Phase 2 (During training): Ongoing documentation of training activities; classroom observations initiated; informal interviews with participants.
Phase 3 (Post-training): Post-training surveys administered immediately after training completion; follow-up surveys at one and three months; in-depth interviews with selected participants; systematic classroom observations; document analysis of training materials and institutional reports.
All procedures adhered to ethical guidelines with informed consent obtained from all participants. Confidentiality and anonymity were maintained throughout.
Data were analysed using SPSS version 29. Descriptive statistics (frequencies, percentages, means, and standard deviations) summarised participant characteristics and competency levels. Paired samples t-tests assessed significant differences between pre- and post-training scores for digital competency, AI literacy, and teaching confidence, testing hypotheses H01 and H02 at a 0.05 significance level. Multiple regression analysis examined predictors of teaching skill improvements, testing hypothesis **H03,** with AI knowledge and tool usage as predictor variables.
Interview transcripts underwent thematic analysis following Braun and Clarke's (2024) procedures. Data were coded using both deductive (theory-based) and inductive (emergent) approaches. Key analytical steps included familiarisation, systematic coding, theme development, and member checking for authenticity. Observation notes were analysed to identify patterns in classroom practice changes. Quantitative and qualitative findings were integrated through triangulation to provide a comprehensive understanding of the training programme's impact.

Results

The sample of 824 participants comprised 89.3% females and 10.7% males, reflecting the gender distribution typical in early childhood education. Age distribution showed 34.2% aged 25-30 years, 41.5% aged 31-40 years,

and 24.3% above 40 years. Educational qualifications included 45.6% with NCE, 38.9% with bachelor's degrees, and 15.5% with postgraduate qualifications. Teaching experience ranged from less than 5 years (28.4%) to over 15 years (18.3%).

Research Question 1: Effect of AI Training on Digital Competency and AI Literacy

Table 1: Paired Samples t-test Results for Digital Competency and AI Literacy

Variable	Pre-training Mean (SD)	Post-training Mean (SD)	Mean Difference	t-value	df	p-value
Digital Competency	2.34 (0.68)	4.12 (0.57)	1.78	42.16	823	<0.001*
AI Literacy	2.28 (0.71)	4.05 (0.62)	1.77	39.84	823	<0.001*

*Significant at $p < 0.05$

The results show statistically significant improvements in both digital competency and AI literacy scores following the training intervention. Digital competency mean scores increased from 2.34 to 4.12 ($t = 42.16$, $p < 0.001$), while AI literacy scores improved from 2.28 to 4.05 ($t = 39.84$, $p < 0.001$). These substantial gains were maintained at three-month follow-up assessments, indicating lasting impact. Therefore, hypothesis HO_1 was rejected, confirming significant differences in digital competency after training.

Research Question 2: Influence on Pedagogical Practices and Teaching Confidence

Table 2: Paired Samples t-test Results for Teaching Confidence

Variable	Pre-training Mean (SD)	Post-training Mean (SD)	Mean Difference	t-value	df	p-value
Teaching Confidence	2.56 (0.74)	4.21 (0.59)	1.65	38.92	823	<0.001*
Technology Integration	2.41 (0.79)	4.08 (0.64)	1.67	37.45	823	<0.001*

*Significant at $p < 0.05$

Teaching confidence showed significant improvement, with mean scores increasing from 2.56 to 4.21 ($t = 38.92$, $p < 0.001$). Technology integration confidence similarly increased from 2.41 to 4.08 ($t = 37.45$, $p < 0.001$). Therefore, hypothesis HO_2 was rejected, confirming significant improvements in teaching confidence following AI training.

Thematic analysis revealed three major themes:

Theme 1: Enhanced Confidence and Self-Efficacy

Teachers consistently reported increased confidence in technology use. One participant stated: *"Before this training, I was afraid of technology. Now I see it as a tool that can help me be a better teacher for my children."*

Theme 2: Personalized Learning Approaches

Participants described using AI tools to create individualized learning experiences. An educator explained: *"I can now use AI to help me understand each child's learning style and create activities that match their needs. It's like having a teaching assistant that knows every child individually."*

Theme 3: Improved Student Engagement

Classroom observations documented increased student participation, enthusiasm, and sustained attention during AI-enhanced learning activities. Teachers reported better material retention and improved problem-solving abilities among students.

Research Question 3: Challenges and Barriers to AI Implementation
Qualitative analysis identified four major challenges:

1. Infrastructure Limitations**:** Inconsistent internet connectivity (mentioned by 67% of interviewees) and limited device availability (54%)
2. Resource Constraints**:** Insufficient digital devices for all students and inadequate technical support
3. Administrative Support Variability**:**Teachers with strong administrative support showed better long-term AI integration than those in less supportive environments
4. Adaptation Requirements**:** Need for creative problem-solving to apply AI skills in resource-constrained environments

Research Question 4: Predictors of Teaching Skill Improvements

Table 3: Multiple Regression Analysis - Predictors of Teaching Skill Improvement

Predictor Variable	B	SE B	.	T	p-value
(Constant)	1.24	0.18	-	6.89	<0.001
AI Knowledge	0.42	0.06	0.38	7.12	<0.001*
AI Tool Usage	0.35	0.05	0.32	6.87	<0.001*
Digital Competency	0.21	0.07	0.18	3.04	0.002*
Teaching Experience	0.08	0.04	0.09	1.98	0.048*

*Significant at $p < 0.05$
$R^2 = 0.64$, Adjusted $R^2 = 0.63$, $F(4,819) = 365.72$, $p < 0.001$
The regression model was statistically significant ($F = 365.72$, $p < 0.001$), explaining 64% of variance in teaching skill improvements. AI knowledge ($\beta = 0.38$, $p < 0.001$) and AI tool usage ($\beta = 0.32$, $p < 0.001$) emerged as the strongest predictors, followed by digital competency ($\beta = 0.18$, $p = 0.002$) and teaching experience ($\beta = 0.09$, $p = 0.048$). Therefore, hypothesis HO_3 was rejected, confirming that AI knowledge and tool usage significantly predict teaching skill improvements.

Discussion of Findings
The significant improvements in digital competency and AI literacy (Research Question 1, Hypothesis H01) align with recent evidence showing that AI-assisted educational programs can achieve substantial learning gains in Nigerian contexts (World Bank, 2024). The magnitude of improvement from mean scores of 2.3 to 4.1 demonstrates the training program's effectiveness in transforming educator competencies. This finding supports Patel *et al*. (2024), who found that profound understanding of AI significantly predicts positive outcomes in AI use, ethics, and problem-solving.
The sustained improvements at three-month follow-up indicate lasting impact, suggesting that the training successfully built foundational competencies rather than superficial awareness. This sustainability is particularly important given Nigeria's goal of achieving 70% digital literacy by 2027 (NITDA, 2023). The findings suggest that targeted, government-supported training can effectively address digital literacy gaps among ECE teachers.
The substantial improvements in teaching confidence and technology integration (Research Question 2, Hypothesis H02) reflect the theoretical predictions of Social Cognitive Theory regarding self-efficacy development. The training program's emphasis on practical application and guided practice appeared to build educator confidence effectively, consistent with UNESCO (2024) findings that training and support empower teachers to integrate technology confidently.
The qualitative findings revealing enhanced personalised learning approaches and improved student engagement demonstrate that confidence gains translated into meaningful pedagogical changes. This transformation aligns with Bello and Ajao (2024), who found that technology integration improves student motivation, collaboration, and engagement. The ability of trained teachers to create differentiated learning

materials and adaptive assessments suggests that AI training enabled them to address diverse learning needs more effectively.

The identified challenges (Research Question 3), particularly infrastructure limitations and inconsistent internet connectivity, reflect broader systemic issues in Nigeria's educational technology landscape. These findings underscore that professional development alone is insufficient without addressing underlying infrastructure constraints. The variability in administrative support highlights the importance of institutional commitment to technology integration, consistent with research on transformational leadership in educational technology implementation.

Despite these challenges, teachers demonstrated creativity in adapting AI tools to resource-constrained environments, suggesting resilience and commitment to implementation. This finding has important implications for scaling initiatives, indicating the need for comprehensive support systems addressing both professional development and infrastructure simultaneously.

The regression analysis (Research Question 4, Hypothesis H03), revealing AI knowledge and tool usage as the strongest predictors of teaching skill improvements, provides empirical support for the Technology Acceptance Model. These findings suggest that both conceptual understanding (knowledge) and practical application (usage) are essential for effective technology integration. The significant but smaller contribution of teaching experience suggests that while experience matters, it does not compensate for a lack of AI-specific training.

The model's high explanatory power (64% variance explained) indicates that the training program successfully targeted key factors influencing teaching improvement. This finding has important implications for future program design, suggesting the importance of balancing theoretical knowledge development with practical application opportunities.

Implications for Policy and Practice(Addressing Objective 5)

The positive outcomes support scaling government-supported AI training initiatives across Nigeria's ECE sector. The evidence suggests that comprehensive professional development can effectively transform educator practice when grounded in appropriate theoretical foundations with practical implementation support. However, successful scaling requires addressing infrastructure challenges and ensuring sustained institutional support.

The findings align with Nigeria's broader digital transformation goals and the World Economic Forum (2025) projection that nearly 40% of required workforce skills will change within five years. The demonstrated effectiveness of this pilot program provides an empirical basis for embedding AI literacy into ECE policy frameworks and professional development standards.

Conclusion

Government-supported AI training significantly enhanced early childhood teachers' digital competencies, AI literacy, and teaching confidence in Nigeria, with improvements sustained over three months. The training successfully transformed pedagogical practices, enabling teachers to create personalised learning experiences and increase student engagement despite infrastructure challenges. AI knowledge and tool usage emerged as critical predictors of teaching improvement, explaining 64% of the variance in skill enhancement. The findings confirm that comprehensive professional development addressing both conceptual understanding and practical application can effectively build teacher capacity in resource-constrained contexts. Teachers demonstrated resilience and creativity in adapting AI tools to challenging environments, though sustained success requires simultaneous investment in infrastructure and institutional support systems. The program's effectiveness validates the theoretical integration of the Technology Acceptance Model and Social Cognitive Theory in understanding technology adoption among educators. These results provide empirical support for scaling AI training initiatives as a viable pathway to achieving Nigeria's 70% digital literacy goal by 2027 while enhancing educational quality and equity in early childhood settings.

Recommendations

Based on the findings, the following recommendations are made:

1. Scale AI Training Nationally: The Federal Ministry of Education should scale this pilot program to all states, prioritising ECE teachers to maximise impact on foundational learning.

2. Address Infrastructure Challenges: The government should simultaneously invest in educational infrastructure, including reliable internet connectivity and digital devices, to enable effective AI tool implementation.
3. Establish Sustained Support Systems: Create ongoing support mechanisms, including mentorship programs, communities of practice, and refresher training to sustain and deepen initial competency gains.
4. Integrate AI Literacy into Pre-Service Training: Teacher education institutions should incorporate AI literacy and digital competency development into pre-service curricula to prepare future teachers.
5. Strengthen Institutional Leadership: Provide training for school administrators on supporting technology integration to ensure teachers receive the necessary institutional backing.
6. Develop Context-Specific Resources: Create AI tools and educational resources adapted to Nigerian contexts, languages, and cultural considerations.
7. Establish Monitoring and Evaluation Systems: Implement robust systems to track long-term impacts of AI training on educator practice and student outcomes.
8. Foster Public-Private Partnerships: Leverage partnerships with technology companies and development organisations to supplement government resources and expertise.
9. Prioritise Equity: Ensure AI training reaches teachers in rural and underserved areas to prevent widening digital divides.
10. Conduct Longitudinal Research: Support ongoing research examining the long-term sustainability of training impacts and factors influencing successful AI integration in diverse contexts.

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ENHANCING SUSTAINABLE DEVELOPMENT THROUGH EFFECTIVE CHILDHOOD EDUCATION ASSESSMENT AND EVALUATION IN PANKSHIN LOCAL GOVERNMENT AREA OF PLATEAU STATE

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Abstract
The study examined the effect of assessment on primary education for sustainable development goals in Pankshin LGA; ascertained the effectiveness of evaluation on primary education for sustainable development goals in Pankshin LGA, and identified the factors militating against the assessment and evaluation of pupils' academic achievement for sustainable development goals in Pankshin LGA of Plateau State. The study adopted a descriptive survey research design. The population consisted of all the primary school educators in Pankshin Local Government Area. The sample comprises 100 primary school educators selected using random sampling techniques. The study adopted research instruments titled. 'Teachers Assessment and Evaluation Adoption Questionnaire (TAEAQ), Effectiveness of Evaluation for Sustainable Education (EESEQ) and Factors Militating against Pupils Academic Achievement (FMPAA) ' for data collection. The statistical tool used to analyse the result is descriptive statistics of mean and standard deviation. The finding reveals that effective childhood education assessment and evaluation are critical for promoting sustainable Development in Pankshin Local Government Area, as they enable policymakers and educators to make informed decisions about educational programs and policies. The study recommends the development of context-specific assessment and evaluation frameworks and the provision of ongoing professional development for stakeholders in the assessment and evaluation process. The study's findings have implications for the children,teachers, and education policymakers in plateau state and beyond.
Keywords: Childhood, education, assessment, evaluation, Pupils, sustainable development.

Introduction

The issue of poor academic performance of pupils in Nigeriahas been of much concern to the government, parents, teachers and even pupils themselves. It has been observed by the research that pupils have issues with writing and reading. To some other pupils, socio-emotional issues are not well addressed, while others' rudimentary understanding of numbers is a thing of concern. These children most time depend on the teacher for assessment. The quality of assessment not only depends on the teachers as reflected in the performance of their duties, but also in the effective coordination of the evaluation (Amnisa *et al*., 2024). Education is an essential factor for the effective development of any country like Nigeria. The western education adopted by Nigeria is highly based on individualism,socio-economic and internationalisation, which are geared towards national development. Education is basic to national development; therefore, no nation can afford to toil with it. Hence, the foundation of every great nation is said to be theeducation of its citizens (Yusuf &Ibrahim,2024). The federal government, in recognition of this important role of education as a tool for the development of the individual, the society and the nation, adopted education in the National Policy on Education as an instrument par excellence for effecting national development (FRN, 2014). Nigeria's education as a nation requires quality assessment skills to improve its social organisation, preserves its cultures, enhance economic development and reform the political structure. Therefore, education is seen as a prerequisite for quality manpower development and creation of wealth, a sure path to success in life and service to humanity.

There is no gainsaying the fact that education is very vital to the pace of social, political and economic development of any nation. Education is a key investment in any nation with enormous social and economic benefits accruing from it. This explains why one of the national education goals is the acquisition of appropriate skills and the development of mental, physical and social abilities and competences as equipment for the individual to live and contribute to the development of the society (FRN, 2014). Qualitatively, the type of education being imparted to the majority of school children is ill-suited to the development need of Nigerians, where the appropriate education approach is yet to be given attention. To affirm this, Babalola and Olawuyi (2021) posited that at present, the quality of education offered to children in primary schools in Nigeria is below the required standard. This has gross adverse effect on quantitative and qualitative human capital development. With the dependency of the individual, family, community and the nation on education for national development, the fundamental place of primary education cannot be overemphasised. Theparamount focus is because this level of education is the foundation of the entire system. Therefore,the realisation of the transformation agenda is hinged on making the primary education system viable and functional.

Childhood education as referred to in the National Policy on Education(NPE) is the education given in institutions for children aged 6-11 plus (FRN,2014). It is the first stage of formal and compulsory education. Primary education ispreceded by pre-school or nursery education and followed by secondary education. The primary education is the first six years of the nine years ofbasic education using the Universal Basic Education (UBE) standard. This stage of education is often addressed as elementary education. In most countries of the world, primary education is compulsory for children including Nigeria. Although it is permissible for some parents to provide it. Children are usually placed in classes with a teacher who will be primarily responsible for their education and welfare for years. This teacher may be assisted to varying degrees by specialist teachers in certain subject areas. Today, there are about 117,242 primary schools with about 62,000 pupils, but with limited and incompetent teachers in Nigeria (GRID3, 2023). The vision statement of Universal Basic Education that encompasses primary education states that, at the end of nine years of continuous education, every child should acquire appropriate and relevant skills and values and be employable in order to contribute his or her quota to National Development, and this is the main focus of Sustainable Development Goals (SDGs).

Sustainable Development (SD) is a global imperative, and education is central to achieving the Sustainable Development Goals (SDGs). In particular, Goal 4.7 emphasises education for sustainable development at all levels, including early childhood. In Nigeria, Early Childhood Education (ECE) is gaining recognition, yet its role in sustainability remains underexplored. This paper examines how ECE in Nigeria contributes to SD and the challenges faced in integrating sustainability into early learning. According to UN (2016), the history of the SDGs can be traced to1972 when governments met in Stockholm, Sweden, for the United Nations Conference on the Human Environment, to consider the rights of the human family to a healthy and productive environment. It was not until 1983 that the United Nations decided to create the World Commission on Environment and Development, which defined sustainable development as"meeting the needs of the present without compromising the ability of futuregenerations to meet their own needs." In 1992, the first United Nations Conference on Environment and Development was held in Rio. It was here that the first agenda for Environment and Development was developed and adopted, also known as Agenda 21.

The Sustainable Development Goals(SDGs), officially known as Transforming Our World: The 2030 Agenda forSustainable Development, is a set of seventeen inspirational "Global Goals"with 169 targets between them. Spearheaded by the United Nations, through a deliberative process involving its 194 Member States, as well as global civil society, the goals are contained in paragraph 54 United Nations Resolution A/RES/70/1 of 25 September 2015. The Resolution is broader intergovernmental agreement that, while acting as the Post 2015Development Agenda (successor to the Millennium Development Goals),builds on the principles agreed upon under Resolution A/RES/66/288,popularly known as the Future We Want. The SDGs were in large measureinformed by the often quoted assertion by United Nations Secretary-GeneralBan Ki-moon that "there can be no Plan B, because there is no Planet B."TheOfficial Agenda for Sustainable Development adopted on 25 September2015 has 92 paragraphs, with the main paragraph outlining the 17Sustainable Development Goals and their associated 169 targets. This includes, among other goals are:

No Poverty, Zero Hunger, Good Health and Well-being, Quality Education. The achievement of anindividual to enable full contribution to the well-being of society. I ideal sense, education is an ultimate value, and hence, through the provision of social service, it is an agent of change (Adeyemi, 2022). It is the

responsibility of the educational system of any nation to bring to the light the transformation of the economic, political, scientific and technological recognition. The place of primary education is paramount because it is the foundation of adults' contribution to developmental processes.

In otherwords, basic education makes a child a better adult. Primary education is tothe educational system, and the nation at large, as the mind is to the body. A faulty primary education, which is the foundation of the entire education system can thwart the attainment of the intended outcome of the system. Theobjectives of primary education, as deduced from Nigerian nationaleducation aims and objectives, read thus:Inculcate permanent literacy and numeracy, and ability tocommunicate effectively;lay a sound basis for scientific and reflective thinking;

Give citizenship education as a basis for effective participation in andcontribution to the life of the society;Mold the character and develop sound attitude and morals in thechild; Develop in the child the ability to adapt to the child's changingenvironment; give the child opportunities for developing manipulative skills thatwill enable the child to function effectively in society within thelimits of the child's capacity, andProvide the child with basic tools for further educationaladvancement, including preparation for trades and the craft of thelocality (FRN, 2014).

These objectives made primary education the concern of all and sundry, and it has become obvious that the foundation to build the future of the Nigerian nation is anchored on it. It can therefore be affirmed that the aims andobjectives of the primary education are no longer just the acquisition of theability to read, write and numeracy as it were in the colonial era, but have moved to a more complex skills acquisition that will enable a primary school leaver to be an independent member of society (Osuji &Alugbuo,2003). According to Bagudo (2006), the Nigerian schools are always termedas a place of learning functional skills, receiving ideal information, to act rationally to the expectation of the broader society. Writing on the primacy of early education of the child, Oyekan (2000) holds that it behoves us to ensure that children are adequately prepared today so that they may find suitable answers to meet the needs and challenges of tomorrow.

Lack of Political Commitment: The poor socioeconomic condition in Nigeria and the inability of the leader to create conditions necessary for higher national development after 14 years of consistent civil rule or democracy, should be a concern to any person who cares about Nigeria. Owing to the nature of primary education and the school system in general, governments give less concern to issues of funding,provision of infrastructure and supply of qualified and experienced teachers. Given the obvious importance of teachers, problems in supporting newly qualified teachers and a lack of career development opportunities in school settings often combine to make teachers' effectiveness difficult. The working conditions of primary school teachers in Nigeria are in pitiable condition that if not addressed can impede teachers' effectiveness. UNESCO(2009) submits that if we are to put human development at the heart of socioeconomic strategies, the advancement and the working conditions of teachers must be addressed. Salaries are not regularly paid, and industrial actions have become continuous and recurring rituals in the Nigerian public service.

Similarly, Esuand Inyang-Abia (2009) revealed that inadequate motivation arising from a haphazard reward system and delay in payment of salaries has led to a lack of commitment and therefore a slow but steady decay of any innovative programme. Constraints of Poor Infrastructural Facilities. Most primary schools both in rural and urban cities, are crumbling because of a lack of maintenance. The degree of infrastructural decay in Nigerian primary schools is an eyesore that should give government sleepless night. Oloruntoyin (2011) stressed that many of the buildings wereerected in the late 1950s and early 1960s with mud blocks. Today, they are notonly a health hazard but also a potential death trap. In fact, classes are being held in the open during the dry season, and when the rainy season sets in children are crowded into the few available ramshackle buildings. For any curriculum to be maximally implemented to meet the vision 2020 or the sustainable development goals, infrastructural facilities such as classrooms, laboratories, seats, and libraries, among others, must be put in place. The absence of these infrastructures in most cases has seriously constrained theteaching and learning objectives of the curriculum (Enu et al .2019). Constraints of Competent Teachers. At the lower and middle levels of primary education, there are reported cases of increase in the rate of absentee and ineffective teachers in schools(Oloruntoyin, 2011). The conditions in primary schools are particularly, peculiar especially when there are fewer teachers than the number of classes that the teacher has to teach. The problem of monitoring teachers also presents additional difficulties to educational managers. Teachers' monitoring is crucial in order to address teacher absenteeism. It has beenfound that getting teachers to come to work is a major barrier to improving

education outcomes. Recruiting, training, and supporting competentteachers to provide quality learning can be particularly challenging. The ideal primary school teacher, according to Brown (2003), is certified to teach more than one subject or grade level, can teach students with a wide range of abilities in the same classroom, is prepared to supervise extracurricular activities and can adjust to the community.

Academic achievement is commonly measured by examinations or continuous assessment, but there is no general agreement on how it is best tested or which aspects are most important. According to Annie, Howard, Stoker and Mildred(1996) academic achievement is the outcome federal the extent to which a student, teacher or institution has achieve their educational goals. Bossaert *et al*. (2011) defines academic achievement as students' success in meeting short or long term goals in education. In the big picture according to the authors, academic achievement means completing high school or earning a college degree. Lassiter (1995) looks at students' academic achievement as referring to a students' strong performance in a given academic area. A student who earns good grades or awards in science has achieved in the academic field of science. He further stated that education associations and schools monitor the overall level of student academic achievement to decide what, if any, challenges need to be made in the educational system. As a result, teachers must constantly upgrade their skills that focus on assessment and evaluation of the pupil's academic achievements.

Objective of the study

The specific objective of the study is to:

1. Examine the effect of assessment on primary education for sustainable development goals in Pankshin LGA
2. Ascertain the effectiveness of evaluation on primary education for sustainable development goals in Pankshin LGA
3. Identify the factors militating against the assessment and evaluation of pupils' academic achievement for sustainable development goals in Pankshin LGA

Research Questions

These research questions guided this study:

1. What is the effect of assessment on Primary Education for Sustainable Development Goals in Pankshin LGA?
2. What is the effectiveness of evaluation on Primary Education for Sustainable Development Goals in Pankshin LGA?
3. What are the factors militating against the assessment of pupils' academic achievement for sustainable development goals in Pankshin LGA?

Methodology

The study employed a descriptive survey research design. The population of the study specifically targeted at primary school educators in Pankshin Local Government Area in Plateau State. Through a simple random sampling technique. The sample comprised 200 primary school educators. The study adopted research instruments titled. 'Teachers Assessment and Evaluation Adoption Questionnaire (TAEAQ)', Effectiveness of Evaluation on Primary Education for Sustainable Education Goals (EEPESE) and Factors Militating against the Assessment and Evaluation of Pupils Academic Achievement for Sustainable Development Goals (FMAEPAASDG) for data collection. The study used a 4-point Likert.

Table 1

S/N	ITEMS STATEMENT	SA	A	D	SD	Mean (x)	Std.D	Decision
1.	Different assessment strategies has effect on primary school pupils understanding of environment, social and economic aspects of SDGs	20	29	30	21	2.48	1.04	Rejected
2.	The current assessment practices in schools measures pupils development of critical thinking, problem solving related to sustainability	59	21	12	8	1.69	0.97	Rejected
3.	It gives clear relationships between specific assessment tasks and pupils acquisition of sustainability-related knowledge and values	70	20	8	2	1.42	0.73	Rejected
4.	Pupils engagement in assessment practices foster their engagements with SDG-related concepts	40	30	29	1	2.13	0.85	Rejected
5.	Teachers observed that connection between assessment practices and pupils attitude towards sustainable development brings change in behavior	50	30	13	7	3.03	0.85	Agreed
6.	The specific impact of sustainable development brings quality to education and responsive education to pupils	60	30	9	1	1.51	0.70	Rejected
7.	Assessment tools used in my school reflect SDG principle	37	29	28	6	2.97	0,95	Agreed
8.	continues assessment(CA) is used effectively to measure pupils progress	41	35	16	20	2.59	0.85	Agreed
9.	Feedback from assessment helps pupils improve their attitudes and behaviors toward sustainability.	36	31	28	5	2.54	1.27	Agreed
10	Used of rating scale to assess teachers understanding of specific SDGs defines a clear concept.	50	30	13	7	1.77	0.93	Rejected
	Weighted Average		**2.29**					

N= 100; key: 4 = Strongly Agree (SA), 3= Agree (A), 2= Disagree(D), 1= Strongly Disagree (SD) Decision Value: Low effectiveness = 0.00-2.44. High effectiveness = 2.50-4.00.

Table 1 shows the effects of assessment on primary education for sustainable development goals in Pankshin Local Government Area in Plateau State. The table shows that teachers observed that connection between assessment practices and pupil's attitude towards sustainable development brings change in behavior (=3.03), Assessment tools used in my school reflect SDG principle (=2.97), Continues assessment (CA) is used effectively to measure pupils progress (=2.59),Feedback from assessment helps pupils improve their attitudes and behaviors toward sustainability (=2.54). The table further shows thatthere is disagreement that effectiveness gives clear relationships between specific assessment tasks and pupils acquisition of sustainability-related knowledge and values (= 1.42),the specific impact of sustainable development bringsquality to education and responsive education to pupils (=1.51), used of rating scale to assess teachers understanding of specific SDGs defines a clear concept(= 1.77).The current assessment practices in schools measures pupils' development of

critical thinking, problem solving related to sustainability (= 1.69) and different assessment strategies has effect on primary school pupils understanding of environment, social and economic aspects of SDGs (= 2.48). Based on the weighted average (2.29 out of 4.00 maximum value that can be obtained), which teachers observed that connection between assessment practices and pupil's attitude towards sustainable development brings change in behavior is high.

Research Question 2: What is the effectiveness of evaluation on Primary Education for Sustainable education goals?

Table 2: Showing the Effectiveness of Evaluation on Primary Education for Sustainable Education Goal?

S/N	ITEMS	SA	A	D	SD	Mean (x)	Std.D	Decision
1	Teachers currently incorporate SDGs principles into evaluating pupils performance in class activities	35	32	28	5	2.97	0.92	Agreed
2	Schools have policies in place to promote sustainability and SDG education for pupils .	80	9	7	4	1.37	0.81	Rejected
3	Schools has the available resources and professional development to integrate SDG effectively during evaluation.	30	29	20	21	2.48	1.04	Rejected
4	Evaluation results are used to plan individualized learning for struggling pupils	1	9	30	60	1.51	0.70	Rejected
5	Evaluation is very good in promoting SDG skills	35	32	28	6	2.97	0.95	Agreed
6	All kinds of assessment tools are good for conducting effective evaluation.	50	30	13	7	3.03	0.85	Agreed
7	I am aware that proper evaluation can promote sustainable development goals (SDG).	80	9	7	4	1.37	0.81	Rejected
8	I am familiar with national/international policies on educational assessment and evaluation	4	9	7	80	1.37	0.81	Rejected
9	I use assessment to identify pupils who need extra support	40	30	29	1	2.13	0.85	Rejected
10	I involvesmy learners in self-assessment activities always	45	40	15	0	1.75	0.70	Rejected
	Weighted Value				**1.91**			

Table 2shows that effectiveness of evaluation in Primary Education for Sustainable Education Goalsin Pankshin Local Government Area in Plateau State can be attained throughthe use of all kinds of assessment tools are good for conducting effective evaluation (= 3.03), also, teachers currently incorporate SDGs principles into evaluating pupil's performance in class activities (= 2.97), evaluation is very good in promoting SDG skills in

primary schools (= 2.97).Schools has the available resources and professional development to integrate SDG effectively into teaching and learning in school (= 2.13), I use assessment to identify pupils who need extra support(= 1.75),I involves my learners in self-assessment activities always(= 1.75),Evaluation results are used to plan individualized learning for struggling pupils (= 1.51), Schools have policies in place to promote sustainability and SDG education for pupils(= 1.37) andI am aware that proper evaluation can promote sustainable development goals (SDG) (= 1.37). Based on the value of the weighted average (1.91 out of 4.00 maximum value that can be obtained), which falls within the decision value for high, it can be inferred that the level of effectiveness of assessment and evaluation such as tools are good for conducting evaluation is high.

Research Question 3: Table 3:What are the factors militating against the Assessment and Evaluation of Pupils Academic Achievement for Sustainable Development Goals in Pankshin LGA?

Table 3: shows the factors militating against the assessment and evaluation of pupil's

S/N	ITEMS	SA	A	D	SD	Mean (x)	Std.D	Decisior
1	Lack of Effective assessment helps pupils develop critical thinking and creativity	45	45	5	5	3.30	0.78	Agreed
2	Lack of Assessment in my school encourages collaboration and teamwork among pupils	50	20	15	15	3.05	1.12	Agreed
3	Lack of Our assessment practices promote fairness, inclusivity and gender equality	40	25	3	5	2.00	0.95	Rejectec
4	Lack of Learners encouraged to think about real-life problems through project based assessment	50	40	10	0	1.60	0.66	Rejectec
5	Lack of Assessment motivates learners to take responsibility for their own learning	60	35	0	5	3.40	0.75	Agreed
6	Teachers use assessment to promote lifelong learning habits in pupils	5	20	35	40	3.10	0.89	Agreed
7	Lack of Assessment results are used for school improvement planning	60	35	0	5	3.40	0.75	Agreed
8	Lack of Continuous assessment contributes to achieving SDG4 (Quality Education)	45	20	10	25	2.60	1.07	Agreed
9	Limited resources (textbooks, ICT tools) affect my ability to assess the learners effectively.	55	30	5	5	3.35	4.15	Agreed
10	Large class size makes effective assessment difficult.	60	35	0	5	2.00	0.95	Rejectec

Table 3 shows the factors militating against the assessment and evaluation of pupil's academic achievement for sustainable development goals in Pankshin LGA. The table shows that teachers agreed that assessment motivates learners to take responsibility for their own learning(= 3.40), Assessment results are used for school improvement planning (3.40), Limited resources (textbooks, ICT tools) affect my ability to assess the learners effectively(= 3.35),Effective assessment helps pupils develop critical thinking and creativity(= 3.30),Teachers use assessment to promote lifelong learning habits in pupils(=3.10),Assessment in my school encourages collaboration and teamwork among pupils (= 3.05), Continuous assessment contributes to achieving SDG4

(Quality Education(= 2.60). The rejection in findings shows that lack of Our assessment practices promote fairness, inclusivity and gender equality, Large class size makes effective assessment difficult are not an agreed factors with (2.00) and another rejection is that lack of learners encouragement to think about real-life becomes a problem through project based assessment.

Discussion of Findings

The major findings of this study indicate that the effectiveness of assessment and evaluation for sustainable developmental goals in primary school is very high. Furthermore, the level of effectiveness of assessment and evaluation with the use of teachers' connections between assessment practices and pupils' attitudes towards sustainable development brings change in behaviour. These findings upheld the result that an ideal sense, education is an ultimate value, and hence, through the provision of social service, it is an agent of change by Adeyemi (2022). The findings says that the assessment tools used in primary school reflect the SDG principle. According to Bagudo (2006), Nigerian schools are always termed as a place of learning functional skills, receiving ideal information, to act rationally in accordance with the expectations of the broader society.

Similarly, this result concurs with the teacher's observation that the connection between assessment practices and pupils' attitude towards sustainable development brings change in behaviour. The quality of assessment does not only depends on the teachers as reflected in the performance of their duties, but also in the effective coordination of the evaluation (Amnisa et al, 2024).

The factors militating against the assessment and evaluation of pupils' academic achievement for sustainable development goals in Pankshin LGA are a lack of teachers' assessment practices that can promote fairness, inclusivity and gender equality, a lack of Learners encouraged to think about real-life problems through project-based assessment, and a large class size makes effective assessment difficult.

Conclusion

The findings of this study have established that the importance of Primary Education cannot be overemphasised. Primary education studies, without doubt, play a crucial role in the sustainable development goals in a nation like Nigeria, despite the challenges. But committed leadership can help achieve Sustainable Development Goals(SDGs) by 2030. Other requirements, teaching tools, connections between the pupils and the practice of pupils' attitudes towards sustainable development bring change in the behaviours of the learners.

Recommendations

The findings of this study have assessed the impact of Primary Education on SDGs in Nigeria. The writer is of the opinion that such problems can be resolved if the followingrecommendations are considered for implementation:

1. Adequate funding through diversify sources from the government,NGO's and communities should be made available.
2. Administration and supervision of primary education should beentrusted to an experienced educationist.
3. Teachers should be motivated through prompt payment of salary,promotions, in-service training, and research grants.
4. Primary education's curriculum and methodology should berefocused in Nigeria. This involves restructuring of Primaryeducation in line with the ethics of its foundation and training.
5. Government at the national, state, and Local levels should provide a conducive and child-friendly environment for effective teaching and learning in primary schools. Government with public-private partnership (P.P.P) should provideadequate and appropriate fundings of schools for the provision andupgrading of necessary teaching aids,library,computer laboratory materials and other tools for efficient and effective implementation ofprimary education towards the attainment of SDGs

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IMPACT OF DIGITAL LITERACY ON THE EARLY LITERACY DEVELOPMENT OF NURSERY ONE IN ASA LOCAL GOVERNMENT AREA OF KWARA STATE, NIGERIA

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Abstract
This study examined the impact of digital literacy on early literacy development among Nursery One children in Asa Local Government Area, Kwara State, Nigeria. A one-group pre-test/post-test quasi experimental design was employed to measure literacy outcomes using standardised tests, and the study developed a Rating Scale on Early Literacy Skills and Digital Resources, which demonstrated high reliability (ICC = 0.87). Sixty children aged four to six participated in an eight-week intervention that integrated interactive storybooks, phonics applications and multimedia learning platforms into daily instruction. Results showed significant improvements in overall literacy (M = 24.86, SD = 2.65 at pre-test; M = 30.76, SD = 1.21 at post-test; t(59) = 15.03, p < .001) and in reading skills, vocabulary breadth and phonemic awareness (M = 24.18, SD = 3.54 at pre-test; M = 30.13, SD = 1.87 at post-test; t(59) = 12.45, p < .001). The findings suggest that digital literacy tools can effectively scaffold early reading and language skills in semiurban Nigerian classrooms. It is recommended that schools invest in tablets and internet connectivity, embed routine digital literacy sessions into curricula, and provide targeted professional development for teachers to sustain and scale observed literacy gains.
Keywords: digital literacy; early literacy development; phonemic awareness; vocabulary acquisition

Introduction

Literacy in early childhood is not merely about decoding letters or reciting the alphabet; it serves as the foundation for understanding, self-expression and lifelong learning. Today's young learners must master phonics and vocabulary while also navigating vast streams of online information, evaluating credibility and maintaining a responsible digital presence. Digital storytelling and interactive literacy applications combine text, sound, animation and movement to create immersive, multisensory experiences that reduce reliance on rote instruction, stimulate curiosity and build critical-thinking skills essential for later academic success (ProFuturo Observatory Team, 2025). Neumann (2018) further demonstrated that tablets and literacy apps can significantly enhance emergent literacy skills in young children by providing interactive opportunities to practice phonological awareness, print knowledge, and vocabulary development.

National Bureau of Statistics and World Bank (2024) report that only 38 per cent of Nigerian children aged four to six can write a simple word other than their name, and only 44 per cent recognise basic letter and sound correspondences. These findings corresponded with the reality that one in four remains out of school and fewer than half of teachers possess basic ICT competencies, limiting the impact of classroom technology. In response, the National Information Technology Development Agency has set targets of 70 per cent digital literacy by 2027 and 95 per cent by 2030. Government and non-government initiatives have sought to expand access and build capacity through national frameworks and pilot programmes, but implementation challenges remain (UNICEF Nigeria, 2023; Ajayi, 2025; UNICEF Nigeria, 2025).

Empirical studies have demonstrated the transformative potential of digital tools in early literacy development. Maitra (2024) found that interactive eBooks improved decoding skills and vocabulary retention among preschoolers. Van Herwegen (2024) reported that digital engagement strengthened neural pathways for working memory and phonological processing. Garba (2018) showed that exposure to tablet-based modules featuring

local folktales recorded notable increases in oral reading fluency and comprehension. Lawan *et al*. (2024) confirmed that digital storytelling enhanced pupils' academic achievement and retention in literacy. Rahiem (2021) emphasised that digital storytelling provided engaging opportunities for young learners, while Judijanto and Rusiadi (2024) reported through systematic review that digital learning tools improved literacy skills when integrated with teacher support.

Qualitative findings have revealed that home environments, parental support and community values strongly influenced engagement with digital literacy tools. In rural Nigerian households, inconsistent electricity and device scarcity inspired creative adaptations such as combining mobile animations with locally recorded audio. Professional development programmes for early years teachers, therefore, prioritised both technical skills and cultural sensitivity to ensure technology use aligned with lived experiences (Kumpulainen *et. al*., 2020; Pereira *et al*., 2023). Comparative policy analysis further showed gaps between Nigeria and countries with more established frameworks, underscoring the need for contextually tailored strategies (Ololade *et. al*., 2024; Odesanya, 2024).

Infrastructure challenges persisted in semi- urban and rural schools in Kwara State, where power outages, limited devices and weak internet connections forced teachers to rotate tablet access and rely on paper-based alternatives. Without investment in community engagement, device maintenance and local capacity building, these gaps risked widening the digital divide (National Information Technology Development Agency, 2023; Ajayi, 2025; UNICEF Nigeria, 2025). Realising the promise of digital literacy in early childhood requires embedding these tools within coherent, context-sensitive curricula. The National Digital Literacy Framework defined competencies ranging from basic navigation to content creation and offered implementation guidelines for schools. Pilot programmes that integrated app-based phonics with Yoruba and Hausa narratives improved pupil engagement and retention while honouring cultural identity. These locally grounded approaches, informed by both global evidence and national realities, presented a sustainable path for advancing literacy across Nigeria's multilingual communities.

This study is grounded in Vygotsky's socio-culturaltheory, which views learning as a socially mediated process shaped by cultural tools and interaction. Vygotsky (1978) proposed that higher mental functions developed through social interaction and the internalisation of cultural tools. Vygotsky's socio-cultural theory described the Zone of Proximal Development (ZPD) as the variation between tasks a learner can perform independently and tasks realisable with appropriate support. Scaffolding denotes the temporary, targeted assistance provided by teachers, peers or tools that enables learners to progress within the ZPD. Digital storybooks, phonics applications and interactive e-Books function as cultural tools that present prompts, multimodal cues and adaptive challenges. When teachers organise activities, model strategies and provide corrective feedback, these tools broaden each child's ZPD and scaffold emergent literacy. Repeated guided use of digital resources supports the internalisation of letter sound correspondences, decoding strategies and vocabulary.

Vygotsky's socio-cultural framework, therefore, explains both the mechanism by which digital tools support early literacy and the importance of teacher mediation and peer collaboration for converting digital engagement into sustained learning gains. Thus, Vygotsky's emphasis on socially mediated learning directly informed this investigation of digital literacy and early literacy development among Nursery one Children in Asa Local Government Area, Kwara State, Nigeria.

Statement of the Problem

Early literacy skills among Nigeria's youngest learners remain alarmingly low despite intensive policy efforts. Fewer than half of children aged four to six can recognise basic letter sound correspondences or write a simple word beyond their name. In the Asa Local Government Area of Kwara State, irregular power supply, scarce digital devices and limited teacher training further hinder the adoption of technology-enhanced learning. Although digital storytelling and interactive literacy applications have demonstrated gains in pilot studies elsewhere, their feasibility and impact in semi-urban and rural Nigerian classrooms have not been systematically assessed. Research on technology in early year's education often focuses on urban, well-resourced settings, leaving a critical gap in understanding how digital tools perform where infrastructure and cultural contexts differ. Educators and policymakers lack evidence on adapting multimedia interventions to local languages, home literacy practices and community values, which limits the design of sustainable, scalable

programmes. Therefore, this study is designed to investigate the impact of digital literacy on early literacy development among Nursery One pupils in the Asa Local Government Area of Kwara State, Nigeria.

Research Purpose

The purpose of the study is to investigate the impact of digital literacy on early literacy development among Nursery One pupils in the Asa Local Government Area of Kwara State, Nigeria. Specifically, the study sought to:

1. Assess the impact of classroom-based digital literacy tools on the literacy development of Nursery One pupils in Asa Local Government Area and
2. Examine improvements in reading skills, vocabulary breadth, and phonemic awareness following a digital learning intervention among Nursery One pupils in Asa Local Government Area.

Research Questions

The following research questions were raised for this study:

1. How does the use of digital literacy tools affect overall literacy development in Nursery One pupils in Asa Local Government Area?
2. To what extent do interactive digital resources enhance reading skills, vocabulary breadth, and phonemic awareness of Nursery one pupils?

Research Hypotheses

The following hypotheses are postulated for this study:

H01. There is no significant difference between pre-test and post-test overall literacy development scores of Nursery One pupils in Asa Local Government Area following the classroom-based digital literacy intervention.

H02. There is no significant difference between pre-test and post-test reading skills, vocabulary breadth, or phonemic awareness scores of Nursery One pupils in Asa Local Government Area after the digital learning intervention.

Emergent literacy refers to the early skills, knowledge and attitudes that develop before they learn to read and write conventionally. These include print awareness, phonological sensitivity and emergent writing behaviours such as scribbling and letterlike forms. In Ilorin West area of Kwara State, Saadu *et al.* (2021) found that those who participated in shared book reading, storytelling and dialogic conversations at home scored significantly higher on letter sound mapping and narrative comprehension tasks, highlighting how everyday print rich interactions lay the groundwork for later literacy.

Home and community environments critically shape emergent literacy trajectories. Saadu *et. al*. (2021) reported that preschoolers from households with abundant's books, storytelling routines and parental literacy support entered school with stronger vocabulary and phonemic awareness. Conversely, many in semi-urban and rural Nigerian communities lack access to age-appropriate print materials, leading to gaps in alphabet knowledge and narrative skills before formal schooling even begins. Classroom practices and policy frameworks also influence early literacy development. Newman and Obed (2015) critique Nigeria's National Policy on Integrated Early Childhood Development for its general emphasis on “literacy-rich environments” without prescribing specific benchmarks or resource allocations, resulting in uneven implementation across local government areas. Where teachers receive scaffold training in play-based, phonics-oriented strategies, pupils demonstrate rapid gains in phonemic awareness; in contrast, classrooms relying on rote copying and recitation often see lower engagement and shallow processing. Digital literacy tools encompass interactive apps, animated e-books and touch screen storytelling platforms designed to integrate visual, auditory and kinaesthetic channels for learning. According to the National Information Technology Development Agency (2023), these tools can deliver personalised feedback, adaptive phonics practice and multimedia narratives that engage young learners beyond what print alone can offer. When thoughtfully integrated digital platforms extend the classroom into the home, reinforcing emergent literacy through play and exploration.

Research on multimedia learning emphasises the cognitive benefits of digital tools. Maitra (2024) conducted an experimental study which found that preschoolers using interactive e-books with tap-to-hear pronunciations,

on-screen letter tracing and comprehension prompts improved early decoding skills by 30 per cent and vocabulary retention by 25 per cent compared with using print materials alone. Neuron-imaging evidence further suggests that multisensory digital engagement strengthens neural pathways for working memory and phonological processing, accelerating emergent reading development. In Nigeria, infrastructural and contextual barriers often limit effective digital integration, yet targeted pilots show promise. Imhanyehor (2021) found that despite 90 per cent of private-school teachers in Benin City possessing basic digital skills, device shortages and outdated hardware constrained the implementation of literacy apps. To address this, UNICEF Nigeria (2023) equipped over 780 rural schools with tablets preloaded with offline literacy content, solar chargers and teacher coaching. Early evaluations report increased student engagement, extended access to story-like experiences and measurable gains in letter recognition in under-resourced settings.

Methodology

This study employed a quasi experimental design using a one-group pre-test post-test approach to evaluate the impact of digital literacy tools on early literacy development among Nursery One pupils. An intact class of approximately 60, aged 4 to 6 years, was selected from a private nursery pre-primary and primary school in Asa Local Government Area, Kwara State. The design was suitable for natural classroom environments where random assignment was not feasible, enabling the study to infer the effects of the digital intervention while maintaining ecological validity.

Before the intervention commenced, each child's literacy abilities were measured using instruments, which adopted for the study: Rating Scale on Early Literacy Skills and Digital Resource (RSELSDR), and Classroom Observation Template (COT). Rating Scale on Early Literacy Skills and Digital Resource (RSELSDR) was designed by this study to determine the level of improvement in early literacy skills following the use of digital tools. The instrument comprises three sections: A, B, and C. Section A captures children's demographic information, while Sections B and C each contain eight items: Section B evaluates early literacy performance, and Section C assesses engagement with digital resources. All items are rated on a four-point scale (1 = Not Yet Demonstrated; 2 = Emerging; 3 = Developing; 4 = Proficient). Intraclass Correlation Coefficient was used to determine the reliability index of the instrument. A reliability coefficient of 0.87 was obtained. This instrument captured baseline performance across critical domains including letter recognition, phonemic awareness, and vocabulary development and listening comprehension. For a duration of eight weeks, selected digital literacy tools, such as interactive storybooks, phonics based mobile applications and multimedia learning platforms, were integrated into daily classroom instruction. Teachers received targeted orientation to ensure that digital resources were aligned with lesson objectives and effectively incorporated into instructional routines.

At the conclusion of the intervention period, the same literacy assessment was administered as a post-test to identify changes in pupils' literacy performance. The collected data were analysed using inferential statistics, specifically paired sample t-tests, to determine whether differences in mean scores between pre-test and post-test results were statistically significant. Descriptive statistics, including mean scores, standard deviations and percentage gains, were also computed to summarise performance patterns and highlight overall literacy development among the children.

Results

Research Question One: How does the use of digital literacy tools affect overall literacy development in Nursery One children in Asa Local Government Area?

Table 1. Descriptive Analysis of Ddigital Literacy Tools Affects Overall Literacy development in Nursery One children

S/N	ITEMS	Mean	Std. Deviation
1	Recognizes and names more letters of the alphabet after using digital tools.	2.82	.833
2	Identifies beginning sounds in common words with increased accuracy.	2.97	.991

3	Segments simple spoken words into sounds or syllables more confidently.	3.17	.847
4	Uses newly learned vocabulary during classroom discussions.	3.28	.761
5	Understands and responds to oral instructions using richer vocabulary.	3.10	.858
6	Reads familiar sight words aloud with improved fluency.	3.32	.792
7	Retells stories more clearly and with relevant details.	3.03	.823
8	Shows increased interest and motivation in literacy activities after exposure to digital tools.	3.18	.813
	Weighted Average Mean and StD	3.11	0.84

Table 1.1 presents how digital literacy tools influenced the literacy development of Nursery One children in Asa Local Government Area. Pupils showed notable progress across key areas such as letter recognition (x= 2.82, SD = 0.833), sound identification (x = 2.97, SD = 0.991), segmentation (x = 3.17, SD = 0.847), vocabulary use (x = 3.28, SD = 0.761), oral comprehension (x = 3.10, SD = 0.858), sight-word fluency (x = 3.32, SD = 0.792), story retelling (x = 3.03, SD = 0.823), and motivation (x = 3.18, SD = 0.813). With a weighted average mean of 3.11 and a standard deviation of 0.84, the impact of digital tools on pupils' literacy development is interpreted as high.

Research Question Two. To what extent do interactive digital resources enhance reading skills, vocabulary breadth, and phonemic awareness of Nursery one children?

Table 2. ***Descriptive analysis of*** **digital resources enhance reading skills, vocabulary breadth, and phonemic awareness**

S/N	ITEMS	Mean	Std. Deviation
1	Pupils show improved vocabulary usage when describing objects or actions.	3.08	.766
2	Pupils listen attentively and respond accurately during digital story time.	3.07	.880
3	Pupils recognize and read more high-frequency words than before.	3.12	.783
4	Pupils recall story events or characters with greater detail.	3.07	.936
5	Pupils actively participate in phonics-based digital games.	3.15	.799
6	Pupils pronounce words more clearly after digital word tracing practice.	2.92	.889

7	Pupils display more confidence when asked to read aloud in class.	3.10	.775
8	Recognizes and names more letters of the alphabet after using digital tools.	3.18	.813
	Weighted Average Mean and StD	**3.08**	**0.830**

Table 2 highlights the influence of interactive digital resources on pupils' development in reading, vocabulary, and phonemic awareness. Notable improvements were observed in vocabulary use for object description (x = 3.08, SD = 0.766), attentiveness during digital story time (x = 3.07, SD = 0.880), high-frequency word recognition (x = 3.12, SD = 0.783), story recall (x = 3.07, SD = 0.936), phonics game participation (x = 3.15, SD = 0.799), pronunciation clarity (x = 2.92, SD = 0.889), reading-aloud confidence (x = 3.10, SD = 0.775), and alphabet naming (x = 3.18, SD = 0.813). The weighted average mean of 3.08 and a standard deviation of 0.83, the analysis show that pupils responded positively to digital learning tools, demonstrating moderate to high gains in key literacy domains.

Testing the Hypotheses

H01. There is no significant difference between pre-test and post-test overall literacy development scores of Nursery One children in Asa Local Government Area following the classroom-based digital literacy intervention.

Table 3: Pair Sample t-test of overall literacy development scores of Nursery one children

Test Variable	Grouping Variables (Literacy Skill Improvement)		Paired Differences					t	Df	Sig. (2-tailed)
Literacy Skill Improvement		N	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
						Lower	Upper			
	Pre_test_LGDR -	60	24.86	2.645	.39251	-6.68542	-5.11458	-15.031	59	.000
	Post_test_LGDR		30.76	1.212						

Table 3 presents the analysis of children's literacy development scores before and after the classroom based digital literacy intervention in Asa Local Government Area. The mean score before the intervention was 24.86, while it increased to 30.76 after the intervention. This reflects a meaningful improvement in pupils' literacy outcomes. The paired sample t-test yielded a statistically significant result with t = -15.031, df = 59, and $p < 0.05$, confirming that the observed difference is unlikely due to chance. The confidence interval for the mean difference ranged from -6.69 to -5.11, further supporting the effectiveness of the intervention. Therefore, the null hypothesis (H01), which states that there is no significant difference between pre-test and post-test overall literacy development scores, is rejected.

$H_0$2. There is no significant difference between pre-test and post-test reading skills, vocabulary breadth, or phonemic awareness scores of Nursery One children in Asa Local Government Area after the digital learning intervention.

Table 4: Paired Samples Test of reading skills, vocabulary breadth, or phonemic awareness scores of Nursery One pupils

Test Variable	Grouping Variables (Literacy Gains After Digital Resource Use)		Paired Differences					t	Df	Sig. (2-tailed)
		N	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
						Lower	Upper			
Literacy Gains After Digital Resource Use	Pretest_LG DR	60	24.18	3.543	.47800	-6.90649	-4.99351	-12.448	59	.000
	Posttest_LGDR		30.13	1.872						

Table 4 reports the reading, vocabulary, and phonemic awareness scores of Nursery One children in Asa Local Government Area before and after using digital learning resources. The mean score increased from 24.18 to 30.13, indicating a strong improvement. The paired t-test result ($t = -12.448$, $df = 59$, $p < 0.05$) confirms that the difference is statistically significant, with a confidence interval ranging from (6.91 to 4.99). Based on this, the null hypothesis (H02) is rejected, showing that digital learning resources had a significant positive effect on pupils' literacy gains. The result affirms that the digital literacy intervention had a positive and significant impact on Nursery One pupils' literacy.

Discussion of Findings

The infusion of digital literacy tools into Nursery One classrooms coincided with broad-based gains in foundational reading and language skills. Pupils demonstrated stronger letter and sound recognition, more confident word segmentation, richer classroom vocabulary, improved oral comprehension, and heightened motivation to engage with texts. These collective improvements suggest that multimedia storybooks, phonics apps, and interactive vocabulary exercises can create an immersive learning environment that scaffolds emerging literacy. This pattern mirrors Judijanto and Rusiadis (2024) systematic review, which found that digital learning tools, when integrated with teacher support, significantly bolster early decoding, vocabulary growth, and phonemic awareness.

Beyond core literacy foundations, the use of interactive digital resources also appeared to deepen pupils' reading fluency, expand their vocabulary breadth, and sharpen phonemic awareness through playful, game-like interfaces. responded enthusiastically to digital story time and phonics games, translating into clearer pronunciation and more detailed story recall, an effect that aligns closely with the International Literacy Association's (2019) position statement, which underscores how thoughtfully designed touch-screen storybooks and phonics activities foster multimodal meaning-making and strengthen emergent literacy in early childhood settings.

Nursery One children in Asa Local Government Area displayed a marked uplift in their overall literacy development after an eight-week, classroom-based digital literacy intervention. Prior to the program, struggled with smooth decoding and produced limited vocabulary in oral retellings; following exposure to interactive storybooks, phonics apps, and guided multimedia practice, they approached texts with noticeably greater fluency, richer word use, and more coherent story retellings. Neumann's (2018) content-analysis study, which found that pre-schoolers using well-designed touch screen apps made significant gains in letter sound correspondence, vocabulary acquisition, and narrative competence when digital activities were carefully scaffold by educators.

Similarly, children's reading accuracy, vocabulary breadth, and phonemic awareness deepened substantially after engaging with targeted digital resources. Where many had hesitated over unfamiliar words before the intervention, they were able to decode new high-frequency words with confidence, participate actively in phonics games, and recount story details with precision by the program's end. Taylor and Leung (2020) corroborate these findings in their social-semiotic analysis of multimodal literacy, which demonstrates that integrating speech, print, image, and gesture through digital storytelling platforms significantly boosts young learners' narrative skills, word learning, and motivation to read.

Conclusion

The eight-week classroom-based digital literacy intervention in Nursery One classrooms within Asa Local Government Area produced clear improvements in children's early reading and language skills. Learnersprogressed from tentative letter sound matching and limited sight-word recognition to fluent decoding, expanded vocabulary, heightened phonemic awareness, and coherent story retellings. These results demonstrate that carefully chosen multimedia storybooks, phonics applications, and interactive vocabulary games can effectively scaffold foundational literacy skills while fostering learner confidence and motivation.

Recommendations

1. Education authorities and local authorities should invest in tablets, secure charging stations, and reliable internet access, and curate a vetted collection of curriculum-aligned digital literacy resources.
2. School administrators should embed routine digital-literacy sessions into the timetable to complement rather than replace traditional literacy instruction.
3. Educators should incorporate guided multimedia storytelling, small-group phonics games, and reflective discussion prompts into daily lesson plans to reinforce links between digital and print literacy.
4. Parents and caregivers should set aside regular, supervised time at home to engage with approved digital reading materials, reinforcing school-based learning and promoting healthy device habits.

Professional development providers should offer ongoing workshops and establish online communities where early-years educators share best practices for selecting high-quality digital content, managing classroom technology, and blending screen-based methods with hands-on literacy strategies.

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STRATEGIES FOR ENHANCING LANGUAGE LITERACY IN EARLY CHILDHOOD EDUCATION

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Abstract
Language literacy is the ability to read, writes, and communicates effectively, forming a crucial foundation for future academic success. In Nigeria, early childhood education (ECE) lays the groundwork for lifelong learning, typically spanning ages 0-5. Effective teaching strategies are essential for fostering language literacy in young learners. This paper explores strategies for enhancing language literacy in ECE, including: reading aloud, phonological awareness activities, storytelling, and language conducive environments.These strategies have implications and benefits for children's language development, including improved reading skills, enhanced vocabulary, and increased confidence. The paper recommends that educators and caregivers should incorporate these strategies into their practice, providing a supportive environment for young learners to develop essential language literacy skills. The work concludes that by adopting these strategies, Nigeria can empower its young learners with the language literacy skills necessary for future success.
Keywords: Literacy, Early Childhood, Education, Teaching Strategies

Introduction

Morrison (2012) defined Early Childhood Care education as a formal and informal training of children from age zero to age five (0-5). This preschool teaching and learning prepares the children for their primary education. It concentrates on the developmental stages of the children; cognitive, emotional, social and physical growth. This training can take place in different settings which includes: homes, preschools, daycare centers, and kindergarten or crèches as the case may be. The trainer may be a professional trained teacher, care-giver and sometimes the child's parents. Early Childhood Care Education is an important aspect of achild's life because it is crucial for lifelong learning

The ability to utilize the language skills of listening, speaking, reading and writing for effective communication is referred to as literacy in present (Adeniyi-Egbeola& Lawal, 2016). Literacy is the pedestal upon which lifelong learning and communication is built. Literacy is crucial for the implementation of effective strategies for fostering language development in early childhood education.Studies have revealed that lasting impact is made on the language and literacy development of children through early childhood education programmes (Sailors, et al, 2026; Harmond, 2024).

National Early Literacy Panel (2008) affirmedthe significance of early literacy development, through the identification of key abilities and instructional practices that support the growth of language and literacy of young learner's language and literacy growth. Thereport highlighted the importance of foundational abilities, like phonological perception, alphabet information, and language abilities, in predicting later reading success. The panel's findings underscore the need for evidence-based instructional practices, including explicit

instruction and engaging learning activities, to promote early literacy development and lay a strong foundation for future reading achievement (Wasik, 2012; Pinkett, 2020; Roberto, 2025).

Eggen and Kauchak (2012) explained teaching strategies as ways of employed by teachers or educators to facilitate learning of sets of instructions among their students. Strategies are chosen based on the students' needs, the topics, and the aims and objectives of instructions. However in Early Childhood Education, child-centered strategies such as: play away, collaborative learning, differentiated instruction, active learning, student choice, and so forth (Slavin, 2012).

Importance of Literacy in Early childhood

The importance of language learning abilities cannot be overstated. Children who exhibit strong propensity for fast language acquisitiongravitate towards performing better academically and have improved social and emotional outcomes. Kilpatrick (2015) emphasized that foundational skills in reading are important, stating that phonemic awareness, decoding, and fluency are crucial for reading comprehension. He adds that weaknesses in these foundational skills can lead to reading difficulties. This implies that educators should prioritize explicit instruction and assessment of these skills, particularly in early childhood education, to identify and support struggling readers and prevent long-term reading challenges (Tanden, 2001; Sailors, *et. al*, 2026). They are also more likely to develop a love for reading and learning that will serve them well throughout their lives. Conversely, children who struggle with language literacy may face significant challenges in their academic careers.

Despite the importance of language literacy, many young children face challenges in developing these skills. Factors such as limited exposure to reading materials, inadequate teacher training and insufficient parental support can hinder language literacy development. Furthermore, children from differentbackgrounds may require additional support for developing language learning abilities in new languages (Owaseye, 2024; Sailors, *et. al*., 2026).

In other to address these challenges, educators can implement a range of strategies to enhance language literacy skills in young children. These include creating conducive environment, using interactive reading approaches, and incorporating play-based learning activities. Teachers can also use technology, such as educational apps and digital storytelling tools, to engage children and promote language literacy skills.

By using these strategies, teachers can positively impact young children toward academic success (Mayo, 2025). To support the above, Owaseye (2024), stated that the use of appropriate teaching strategy presents facilitates easy learning with significant relevance to learning outcomes. She added that strategy can make understanding of information simple or complex. If there is no proper understanding of the information conveyed, the intention may not reach the learner. When there is no comprehension, the purpose of the teaching is defeated.

Effective language literacy instructions createlasting impacts on educational outcomes (Vukelich *et. al*., 2014). As such, it is essential to prioritize language literacy development and the provision of requisite support and resources for the implementation of effective instructional strategies (Vukelich *et. al*., 2014).

The implications and benefits of strategies for enhancing language literacy in early childhood education are numerous and significant. One of the most notable benefits is that these strategies have lasting impact on future academic success. By developing appropriate early learning skills, children are better equipped to access achieve their full potential. This, in turn, results in improved academic outcomes, a stronger foundation for lifelong learning (Tanden, 2001; Mayo, 2025; Kalogris, 2024).

Another significance of language literacy is that it could help bridge the gap between children from diverse socio-economic backgrounds. Children from disadvantaged backgrounds may not have the same level of exposure to reading materials and literacy-rich environments, which can hinder their language literacy development (Chu, 2012). By implementing effective strategies in early childhood learning, teachers provide the necessary foundation required for the learners thus providing a level playing field for success (Nisbet and Huang, 2015; Oloninisi, 2022).

In addition to academic benefits, strategies for enhancing language literacy can also have a positive impact on children's social and emotional development. When children develop strong language skills, they are better able to express their thoughts and feelings, form meaningful relationships with their peers, and navigate social situations with confidence (Yudha& Aisyah, 2025). This, in turn, can lead to improved emotional well-

being and a stronger sense of self-esteem. By supporting language literacy development, educators can help children develop the social and emotional skills they need to thrive (Mayo, 2025).

Wasik and Hindman (2023) posited that effective language literacy strategies can also support children's cognitive development. Language and literacy skills are closely linked to critical thinking, problem-solving, and creativity (Vukelich *et. al*., 2014). By developing strong language literacy skills, children are better able to access and process information, think critically, and solve problems effectively. This can lead to improved cognitive outcomes and a stronger foundation for future learning (Kalogris, 2024).

The benefits of language literacy strategies also extend beyond the classroom. When children develop strong language literacy skills, they are better equipped to participate fully in society and access a wide range of opportunities in their personal and professional lives. This can lead to improved socio-economic outcomes and a more informed and engaged citizenry. By prioritizing language literacy development, educators can help children develop the skills they need to succeed in an increasingly complex and interconnected world(Surya & Aprilia, 2024).

Furthermore, the effective implementation of language literacy strategies in early childhood education requires ongoing support and professional development for educators. Teachers need to be equipped with the knowledge, skills, and resources necessary to deliver high-quality language literacy instruction and support the diverse needs of their students. By prioritizing educator support and development, policymakers and administrators can help ensure that language literacy strategies are implemented effectively and have a lasting impact on children's educational outcomes.

Moreover, the benefits of language literacy strategies can be seen in the long-term outcomes for children. Children who develop strong language literacy skills are more likely to succeed in school, pursue higher education, and secure better job opportunities. They are also more likely to be engaged citizens, participating fully in their communities and contributing to society in meaningful ways. By investing in language literacy development, policymakers and educators can help create a more educated, informed, and productive society.

Literacy strategies in early childhood

The Guardian (2025) listed different ways of boosting early childhood literacy, these includes: Read Aloud Daily, Phonemic Awareness Activities, Letter Recognition and Phonics, Print-Rich Environment, Interactive Storytelling, Name Writing and Journaling, Dramatic Play with Literacy Props, Songs and Rhymes, and One-On-One or Small Group Instruction.

The impact of the language skills on early childhood literacy cannot be over emphasized. Oloninisi (2022) opined that ability to communicate effectively in English Language hinges on the skills of listening, speaking, reading and writing. Listening and reading are receptive skills, while speaking and writing are productive skills(Emmaryana, 2010; Harmond, 2024). On the other hand, listening and speaking are oral skills while reading and writing are literacy skills. The ability to read and write translates a person to literate. However, numeracy, the ability to count numbers has also been included in modern literacy (Kamil, *et. al*., 2011; Coursehero.com, 2025).

Early Childhood Education in Nigeria begins from 0-5 years. Education at this stage is for developing the basic life skills that pupils would need to enter their school years. During this period, it is important to develop literacy which is closely related to the ability to write and read. It is believed that literacy levels predict academic achievement or school completion, vocational outcomes, mental, and physical health (Dewalt, *et. al*., 2004; Marcus, 2006; Lincoln, et al., 2008; Hermandez, 2012). Literacy skills in children develop gradually from acting an expression to communicate it orally and in writing. The literacy development is also related to other domains of development. Children learn to utter an idea through using language as a prop to get social play begun. They begin to label, describe, question, and demand when they tell each other how they feel and what they want (Irwandi,*et. al*., 2019).

Related to this fact, the preschool years have been viewed as the critical period for developing early children's literacy. In fact, throughout early school-age years there is an increase in the size and complexity of the child's linguistic repertoire and in the use of that repertoire within the context of conversation and narration. The early school-age period is one of tremendous linguistic creativities filled with rhymes, songs, word games, and those special oaths and incantations passed along on the underground from child to child (Irwandi, *et.al,*. 2019). The early school-age years are characterized by growth in all aspects of language, although the development of

pragmatics and semantics seems to be the most prevalent (Marcus, 2006; Otto, 2010; Owens Jr, 2012). In addition, to mastering new forms, the child learns to use these and existing structures to communicate more effectively. Thus, those facts certainly require the right strategy in developing literacy for children at an early age by considering aspects of child development.

Teaching the Alphabet: The Beginning of Literacy

Schickedanz and Collins (2013) posited that teaching the alphabet to young children is the beginning of literacy. This could be done by following a step-by-step approach of: Letter Recognition, Few Letters at a Time, Multi-Sensory Activities, Letters to Sounds, Games of Letters, Read Aloud, Writing, Reinforcement and so on.

There are 26 letters of the English Language alphabet, which can be written in upper case and lower cases as need arises (ABCDEFGHIJKLMNOPQRSTUVWXYZ and abcdefghijklmnopqrstuvwxyz). Schickedanz and Collins (2013) suggested that the capital letters should be taught first because they are easier to write and distinguish than the small letters. Rhymes and alphabetic songs could be used to enhance children's memorization of the letters. Visuals such as: flashcards, alphabet charts, alphabet Legos, books with colourful illustrations and so forth could promote recognition of alphabet. Teacher should focus on teaching a few letters per week depending on the age and class of the pupils. It is recommended that 3-5 letters should be taught, while concentrating on high frequency letters like A, B, C, M, S, and T. Pupils' personal names and objects should be included in the teaching of the letters; as in Aa for Apple, Bb for ball, Cc for Caleb, Dd for Dauda, Ee for Egg and so on.

Adeniyi-Egbeola and Lawal (2016) emphasized the importance of multi-sensory approach in language learning. It is a strategy that involves the use of more than one sense at a time. These senses could be that of sight, sound, touch, and movement.Birsh (2011) opined that seeing images, colours, written word; listening to sounds, songs, rhymes; tracing letters in sand, using textured materials, or finger-painting; doing activities involving movement would strengthen children's early literacy.

Phonological Awareness

The problem of connecting letters to sounds hinders early literacy in children. Adeniyi-Egbeola**Reading Aloud**

Vocabulary is enhanced by the understanding of pronunciation. Pupil would be able to read and write correctly when they are able to say letters and their sounds (Harper, 2014). For examples, Aa as /a/ _ apple, Bb as /b/ _ bag, Cc as /k/ cat etc. Teacher should be able to instruct the learning of phonics at the early stage of literacy in other to enable pupils' associate letters, word, pictures and even real objects to sounds.

Schuele and Boudreau (2008) explained that the ability to recognize and the sound structures of spoken language is very important to early childhood literacy. This understands that speech is made up of letters, words, syllables, rhymes and individual sounds (phonemes). For examples, rhyming words like: cat, rat, sat, bat would promote early childhood reading and writing. In addition, alliteration like:silly sallysings would help to lay the foundation for young children, reading success.

The practice of reading out aloud by the teacher or caregiver to young children is one of the strategies of fostering early literacy (Trelease, 2013). This strategy would enable the children to hear the correct sounds of the targeted language and also read fluently. Mol, Bus and de Jong (2009) stated that reading aloud by the pupils would encourage them to express themselves while supporting early comprehension of texts.

International Reading Association and National Association for the Education of Young Children (1998) posited that for reading aloud to be effective in enhancing early childhood literacy, teacher must choose books and materials that are commensurate to the age and class of the pupils. Trelease (2013) also affirmed that expressive voice and gestures, while asking open-ended questions during and after reading would impact young children's literacy greatly.

Games in language literacy

Frost, Wortham and Reifel (2012) defined game as a form of play undertaken for the purpose entertaining, learning, or competition that follow rules, challenges and interaction between or among the players. In other word, games in early childhood literacy would be plays that promote reading and writing in young children.

Morrow (2012) stated that there are many different type of games that enhance literacy in early childhood, these includes:

1. Bingo game: Pupils are called out one after the other to match letters the teacher pronounces on their bingo card. This will promote letter recognition and sound awareness in children.
2. 2. Rhyming Match-up: This game focus on phonological awareness. For example, fat, rat, sat, mat etc. Words like run, pun, fun, gun and so forth enables pupil to read and write with ease.
3. Letter Fishing: Pupils are made to sort objects or pictures for magnetic letters in a sensory bin, naming the letters and sounds. This game promotes alphabet recognition and motor skills.
4. Sorting: In this game, pupils are asked to pick out objects or pictures beginning with certain sounds. For example, if pupils are instructed to sort objects beginning with /b/ sound, they are expected to pick objects like: bag, ball, bat, balloon and so forth. It enables them to focus on phonemic awareness.
5. Matching pictures to words: Pictures of different objects are drawn on one side of the chart with the wright words scattered on the other side. Pupils are expected to draw lines to join each object to it correct spelling. This reinforces correct spelling skill from early stage, promoting literacy.

Vocabulary Building

Vocabulary is the total number of word that a person knows and use in communication. Adeniyi- Egbeola and Lawal (2016) posited that words are made up of letters, while sentences are made up of words; while on the other hand, paragraphs are combination of sentences. This showed that vocabulary is the building blocks of communication (Nation, 2012).

Teacher must put good measures in place to promote rich vocabulary in his pupils. Since the early childhood education children are between the ages of 0-5, there are receptive to language development, teachers and caregivers need to priorities their vocabulary (Duke*et.al*., 2025). Vukelich*et.al.,* (2012) emphasized the importance of vocabulary development in early childhood, these includes: supports expressive and receptive language skills, ability to comprehend spoken words, enhances the understanding of concepts and improves pupils' social connections.

Weitzman (2024) statedthat adult-child conversation is importantin promoting vocabulary development in little children. At the early stage of language learning, little children tend to imitate adult words and gesture. Conversational turn-talk would enable children to hear and use new words in natural context. Wasik and Hindman (2023) also posited that anenabling environment should be created at home and in the school by both the parent and the teacher/care giver to enhance vocabulary development which on the other hand would impact literacy.

Storytelling

National Storytelling Network (2014) defined storytelling as the art of using words, images, sounds and gestures to narrate series of events, which most of the times involves characters, plots and settings in order toentertain or convey meaning to an audience.Parent, teacher and care-giver are to read short interesting stories to pupils, using character voices, expressions and gestures to make it like real life events. Pupils should also be encouraged to tell stories and engage in role-play to improve words knowledge and understanding (Weitzman, 2024).

Surya and Aprilia (2024) stated that storytelling plays significant role in early childhood literacy by fostering love for reading. Engaging and enjoyable storytelling experiences develop in children love for reading which enhance lifelong literacy. Frequent exposure to storytelling would improve their phonological awareness which is a good predictor of literacy success.

Conducive Environment

Early childhood literacy needs child-literacy environment to thrive. Neuman and Roskos (2007) observed that a literacy friendly environment is needed to promote language development, cognitive growth, and social-emotional learning in little children. The environment should provide the children with opportunity to explore all the language skills of listening, speaking, reading and writing. Children's early literacy environment should enable them have access to books, instructional materials, child-adult conversations, literacy games and so on to build solid literacy foundation.

Conducive environments would also enable the pupils to be able to partake in plays and games (Christie & Roskos, 2006). This would impact their literacy. For instant, writing in the sand, singing and dancing the alphabet song, role-play to short stories and so forth. Child friendly literacy environment or class as the case may

be would provide emotional support for the little children to read and write. Children would be allowed to speak, ask questions, celebrate achievement, and build social and emotional connections as they communicate.

Makin and Whitehead (2004) opined that a conducive environment would enable the pupils to learn formal school routines like sit on chairs and writing on tables. Time for doing different activities like: reading, writing, singing, playing, toileting, and so on.

Conclusion

In conclusion, the implications and benefits of strategies for enhancing language literacy in early childhood education are significant and far-reaching. By prioritizing language literacy development, educators could help children develop the skills they need to succeed academically, socially, and emotionally. The benefits of language literacy strategies extend beyond the classroom, leading to improved socio-economic outcomes and a more informed and engaged citizenry. By supporting language literacy development, policymakers and educators can help create a brighter future for children and society as a whole.

Different methods and techniques are used by educators to facilitate teaching and learning processes. These strategies are created to make pupils' learning easier and engaging in other to achieve specific educational goals and objectives. Piasta (2016) stated that in other to enhance language literacy in early childhood, strategies that promote the building of the four basic skills of listening, reading, speaking and writing should be employed.

Every child could develop a strong foundation for literacy and reading development when he is given opportunities to engage in purposeful, meaningful language and early print activities. Effective early literacy instruction provides preschool children with developmentally appropriate settings, materials, experiences, and social support that encourage early forms of reading and writing to flourish and develop into conventional literacy (Brown, 2014).

Suggestions

Early childhood literacy is key to adult and lifetime learning. Therefore, the following recommendations are made:

1. Government should put solid structure in place to promote Early Childhood Education in Nigeria. Standard crèches, kindergartens preschools should be established for early childhood education.
2. Professional teachers and care-givers should be trained to handle early childhood literacy. Early childhood literacy strategies such as phonological awareness, storytelling, games and so on needs special trainings.
3. Parents should be sensitized on the need to get involved in their children's literacy as soon as the child is born. Children can be literate in their mother tongues and as well as in other languages.For example, a Yoruba child can learn both the English and Yoruba alphabets at home.
4. Curriculum planners should include early childhood literacy as important aspect of early childhood education. Emphasis should be focused in the language skills of: listening, speaking, reading and writing.
5. Instructional materials such as; special books for little children, toys, charts, computers, radios, crayons, color pencils, slates, boards and so forth should be provided to enhance teaching and learning.
6. Conferences and workshops should be organized periodically for training and re-training of teachers, care-giver and parents in early childhood literacy.

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PERCEIVED INFLUENCE OF TEACHERS' PROFESSIONALISM ON PUPILS' ACADEMIC ACHIEVEMENT IN MORO LOCAL GOVERNMENT AREA OF KWARA STATE

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Abstract
Academic achievement at the elementary level forms the foundation for future educational success, and teachers remain a critical determinant of pupils' learning outcomes and academic achievements. In recent years, concerns have emerged regarding the declining academic performance of pupils in primary schools acrossMoro Local Government, Kwara State. Thus, this study investigated the perceived influence of teachers' professionalism on pupils' academic achievement in Moro LGA, Kwara State. One research question was raised and one null hypothesis was formulated for the study. A descriptivesurvey research design was adopted and the population was all public primary school teachers in Moro Local Government. Simple random sampling technique was used to select 100 primary school teachers as respondents within the study area. The instrument used for data collection was a researcher structured questionnaire. The instrument was validated and reliability of 0.85 was obtained using PPMC. The research question was answered using mean and standard deviation while the hypothesis was analyzed with independent sample t-test. The findings revealed that the perceived influence of teachers' professionalism on pupils' academic achievement was positive with weighted mean of 3.20, among others.The study concluded that teachers professionalism plays a pivotal role in enhancing pupils'academic achievements in Moro LGA, and stakeholders must prioritize policies that foster ongoing professional development for teachers. The study recommended that teachers should be encouraged and supported to participate in professional development programs to update their knowledge and enhance their teaching and learning. Teachers' motivation and job satisfactory should be enhanced through digital technology, better remunerations and conducive working environment to promote professionalism.
***Keywords**:* Teachers Professionalism, Pupils, and Academic Achievement

Introduction

It is common knowledge that education is the cornerstone of national development, and teachers continue to play a significant role in the learning and academic success of their students. Primary education serves as the foundation for the entire educational system in Nigeria. Its success greatly depends on the competence and professionalism of the teachers who facilitate learning. The role of teachers is paramount, serving as the cornerstone of educational and societal development (Karle *et. al.,* 2020). Beyond the transmission of knowledge, teachers play a pivotal role in shaping children's character, values, attitudes, behaviours and academic achievement. In this setting, students' academic performance has emerged as a crucial metric for assessing the efficacy of educational procedures, particularly at the foundational levels of learning (Carr *et. al.,* 2024).

The academic success of its students is fundamental to the success of any educational system. According to Saadu, Sulyman, and Segun (2024), academic achievement is the degree to which a student demonstrates mastery of various academic skills and knowledge. According to Gess-Newsome *et. al.,* (2019), academic achievement can also be defined as a student's performance in the subject they are studying at school. A key indicator of educational quality and efficiency is academic achievement, which is frequently measured by standardised tests, classroom assessments, and overall academic performance. It reflects how well pupils have acquired knowledge, developed intellectual skills, and met curriculum objectives. Given its centrality in evaluating learning outcomes, improving pupils' academic achievement has become a priority for educators, policymakers, and stakeholders globally. As a result, academic success in primary school sets the stage for all subsequent educational success (Saadu *et. al.*, 2024). However, the pursuit of this goal is heavily influenced by the quality of teaching pupils receive, which in turn is deeply rooted in the professionalism of teachers.

Teachers' roles in society and their responsibilities are recognised by the general public. 2021; Vrazhnova et al., The teacher's influence extends beyond the classroom, contributing to forming responsible, informed, and morally grounded members of the society. According to Lesmana (2023), teachers play a crucial role in facilitating the transfer of knowledge and technical skills between generations and in preserving and expanding the nation's perspective. Teachers are the nation's builders and young people's source of knowledge and values. They uphold cultural values and pass these from one generation to another (Karlen *et al.,* 2020). Teachers provide the foundation for language, social, cognitive and emotional development of the young children. They prepare the students for success in school and beyond. Thus, they are widely regarded as the primary stakeholders within the educational system, given that their performance is vital in shaping the academic (Abdallah & Alkaabi, 2023).

As noted by Jimenez and Menendez (2021) teachers are the backbone of the educational process, serving not only as transmitters of knowledge but also as role models, mentors, evaluators, and facilitators of learning. Their professional behaviordefined by competencies, ethical standards, pedagogical skills, commitment to duties, and continuous personal developmenthas far-reaching implications for learners' academic success. The Teachers Registration Council of Nigeria (TRCN, 2018) defines professionalism as the consistent application of knowledge, skills, and ethical principles to ensure effective teaching and learning. Teachers' professionalism refers to the conduct, aims, and qualities that characterize a professional educator, including subject matter expertise, pedagogical skills, ethical behavior, and commitment to professional development. It encompasses a broad range of attributes including mastery of subject content, instructional expertise, integrity, effective communication, classroom management, punctuality, and dedication to pupil's progress.A professional teacher is expected to create a supportive learning environment, adopt learner-centered teaching strategies, and evaluate pupils' progress objectively and constructively(Canuto*et.al.,*2024). These elements of professionalism play a vital role in stimulating students' interest, encouraging their participation, and improving their academic outcomes.

Teacher professionalism is multidimensional. It includes not just qualifications and certifications, but also the disposition, ethical stance, commitment to excellence, responsiveness to pupils' needs, and continuous engagement in reflective practice. A professional teacher is one who not only imparts knowledge but also cultivates learners' critical thinking abilities, provides emotional support, upholds discipline, and models the values expected in society. Professionalism also entails teachers' participation in ongoing training, adherence to the code of ethics, and demonstration of a strong work ethic. These traits, when consistently displayed, can instill a sense of discipline, motivation, and academic focus in learners(Karlen*et. al.,* 2020).

Extant literature has consistently shown that teachers who demonstrate high levels of professionalism tend to create engaging, supportive, and effective learning environments. (Jimenez*et. al.,* 2023). Such teachers are more likely to employ innovative teaching methods, assess learners fairly, provide constructive feedback, and adapt their instructional strategies to accommodate diverse learning needs. In contrast, unprofessional conduct among teacherssuch as frequent absenteeism, lateness to class, lack of lesson preparedness, favoritism, and low enthusiasmcan significantly hinder pupils' learning experiences, reduce pupils' motivation, and ultimately result in poor academic performance. As such pupils may feel unsupported, disengaged, or confused, leading to decreased academic interest and poor performance (Papadakis*et. al*., 2021). Thus, the professional behavior of teachers is not only central to the delivery of curriculum content but also influences the classroom climate, learner attitudes, and academic performance.

However, in Moro Local Government Area of Kwara State, reports of low academic performance among pupils in primary schools across the local government have raised concerns about the quality and the professionalism of teachers in public primary schools. This declining in the academic achievement of the pupils had been a serious concern to all the stakeholders and this was evident in the report of 2023/2024 national common entrance extermination results where only 40% of pupils performed above average while about 60% performed below average. Also, Lukman *et. al.,* (2022) reported the poor academic performance of pupils in the Local Government where about 45% of total number of pupils who sat for the examination scored above 50 marks and about 55% of pupils scored below 50 marks in the 2020/2021 common entrance extermination. Therefore, among the factors cited for thisattrition in the academic achievement of pupilswasunfavorable school environment and the diminishing in the standard of teachers' professionalism.

Teachers' professionalismhas been identified as one of the vital factors in promotingpupils academicsuccess in Nigeria.Saadu*et. al*., (2024) reiterated that in many educational systems around the world, particularly in developing nations, the academic achievement of pupils has been a subject of concern, with performance often falling below expected standards. While numerous factorssuch as family background, school infrastructure, socioeconomic status, and curriculum qualityhave been identified as contributors, the teacher factor remains the most influential in-school determinant of student success. The professionalism of teachers stands out not only as a mediator of instructional quality but also as a predictor of sustained academic improvement.

Educational theorists such as Lev Vygotsky and Jean Piaget emphasize the importance of guided learning and social interaction in cognitive development. Teachers, through professional conduct, act as the more knowledgeable other (MKO) in Vygotsky's zone of proximal development (ZPD), providing scaffolding that helps learners achieve academic tasks they would otherwise be unable to complete independently. Similarly, Albert Bandura's social learning theory stresses the power of modeling, pupils learn not only by being taught but also by observing the behaviors and attitudes of their teachers (Ahmad*et. al*., 2023). A teacher who models professionalism encourages learners to internalize positive academic behaviors.Furthermore, recent global education policy frameworks such as the UNESCO Teacher Policy Development Guide and Sustainable Development Goal 4 (SDG 4), which aims to ensure inclusive and equitable quality education, underscore the need to improve teacher quality and professionalism as a means of achieving better learning outcomes. Countries investing in teacher capacity building and professionalism often report higher pupil engagement, better academic results, and reduced dropout rates(Vrazhnova*et. al.,* 2021).

Arguably, one of the critical goals of primary education is to ensure learner access quality and relevant education (UNESCO, 2022), there is undeniable need to determine how teachers in primary schools in Moro Local Governmentare effecting professionalism in the classroom to enhance teaching and learning. This study is intended to explore the parameter of teachers professionalism on pupils activities and its possible impacts on the academic achievement of pupils.Hence, This study examines the perceived influence of teachers' professionalism on pupils' academic achievement in Moro Local Government, Kwara State.

Statement of the Problem

Academic achievement at the primary school level forms the foundation for all future educational success. However, in recent years, concerns have emerged regarding the declining academic performance of pupils in primary schools across Nigeria, including in Moro Local Government Area ofKwara State. Despite the implementation of teacher training programs and education reforms at state and national levels, the expected improvement in pupils' academic achievement has not been consistently realized and one of the reasons cited for this decline pupils academic achievement is the diminishing standard of teacher professionalism. Parents, educators, and policymakers alike have expressed concerns about whether the teachers engaged in these schools meet the professional expectations required to drive pupils' success. Undeniably, accumulation of these challenges can make pupils to become low achiever, depressed, misbehave and dropout of schools. More so, there is limited empirical data on how teachers' professional behaviors and attitudes directly influence learning outcomes at the study area.Understanding this relationship is essential for informing strategies to improve teacher quality and, consequently, learning outcomes in the local government. Thus, it is against this backdrop that this study seeks to examine the perceived influence of teachers' professionalismon the pupils' academic achievement in Moro LocalGovernment.

Research Objectives

The objectives of the study are to:

i. examine the perceived influence of teachers' professionalism on pupils' academic achievement in Moro Local Government Area of Kwara State.
ii. find out the difference in the perceived influence of teachers' professionalism on the pupils' academic achievement based on genderin Moro Local Government Area of Kwara State.

Research Question

One research question was raised to guide the study:

i. What is the perceived influence of teachers' professionalism on pupils'academic achievement in Moro Local Government Area of Kwara State?

Research Hypothesis

One null hypothesis was formulated and tested at 0.05 level of significance:

Ho1: There is no significant difference in the perceived influence of teachers' professionalism on the pupils' academic achievement based on gender**.**

Methodology

Research design adopted for this study wasdescriptive survey research design. The targetpopulation for the study was all public primary school teachers in Moro Local Government Areas of Kwara State.A simple random sampling technique was used to select 100 primary school teachers as respondents from a pool of 10,105 teachers, ensuring diverse representation across both urban and rural schools within the study area and 20 schools out of 157 schools participated in the study. The instrument used for data collection for the study was a researcher self structured questionnaire titled, "Perceived Influence of Teachers' Professionalism on Pupils Academic Achievement Questionnaire (PITPPAAQ)".The instrument was validated byexperts in the field of early childhood and primary education. The reliability of the instrument was tested using test-retest method after which Pearson Product Moment Correlation (PPMC) was used to correlate the result and the score yielded 0.85. The research question was answered using meanand standard deviation while the null hypothesis was tested at 0.05 level of significant with independence sample t-test.

Results

Research question one: What is the perceived influence of teachers professionalism on pupils' academic achievement in Moro Local Government Area of Kwara State?

Table 1: Perceived influence of teachers professionalism on pupils' academic achievement in Moro Local Government Area of Kwara State.

S/N	Items	Mean	SD	Remark
1	Teacher's level of professionalism directly affects pupils' learning outcomes	3.62	.544	
2	Teachers' mastery of subject matter influences pupils' academic success.	3.46	.519	
3	Continuous teacher training and development enhance academic performance in pupils.	3.46	.590	
4	Teachers who act professionally serve as positive role models for their pupils.	3.17	.715	
5	Pupils feel more motivated and engaged with a professional teacher.	2.94	.725	

6	A teacher's attitude and commitment can either improve or hinder pupils' performance.	3.41	.603
7	Pupils achieve better results when taught by professional and well-trained teachers.	2.91	.780
8	Lack of teacher professionalism negatively affects pupils' academic development.	3.39	.645
9	Teachers who communicate effectively enhance pupils' understanding of subjects.	2.99	.678
10	Professional teachers manage classroom discipline better, which supports learning.	3.43	.666
11	Pupils benefit academically when their teacher is well-prepared and organized.	3.16	.837
12	Ethical behavior by teachers encourages respect and academic seriousness among pupils.	3.39	.645
13	Pupils thrive academically in classrooms led by respectful and responsible teachers.	2.84	.742
14	Teachers who uphold educational ethics help pupils develop better academic discipline.	3.40	.745
15	Teachers who maintain integrity and honesty boost pupils' academic discipline.	2.62	.768
16	Professional collaboration among teachers positively influences classroom performance.	2.99	.786
17	Teachers' punctuality and regular attendance contribute to pupils' academic stability.	3.44	.652
18	Teachers who maintain confidentiality and fairness boost pupils' academic confidence.	3.41	.603
19	Teachers' self -reflection and improvement efforts promote pupils' academic growth.	3.43	.666
20	Professional development activities keep teachers updated and improve learning outcomes.	3.44	.652
21	Professionalism helps teachers create inclusive learning environments for all pupils.	3.39	.645
	Weighted Mean	**3.20**	

Decision rule: 0.00-2.49 (negative), 2.50-4.00(positive)

Table1 shows theperceived influence of teachers professionalism on pupils' academic achievement in Moro Local Government Area of Kwara State. The finding shows the teachers' perception of the influence of teacher professionalism on pupils' academic achievement in Moro Local Government Area of Kwara State, with a weighted mean score of 3.20 indicating a positive perceived impact. The teachers agreed that teachers' mastery of subject matter; continuous teacher training and development; teacher's attitude and commitment; professional class management; teachers' ethical behavior encourages respect and academic seriousness;teachers who uphold educational ethics; teachers' punctuality and regular attendance; teachers who maintain confidentiality and fairness; teachers' self-reflection andimprovement efforts, professional development activities keep teachers updated and improve learning outcomes; professionalism helps teachers create inclusive learning environments for all pupils and also that lack of teacher professionalism negatively affects pupils' academic development/ achievement, all with a mean rating more than 3.20 has a positive influence on the pupil's academic performance. which indicates that the perceived influence of teachers professionalism on pupils academic achievement in Moro Local Government Area of Kwara State is high. In the lightof this, the Perceived influence of teachers professionalism on pupils' academic achievement in Moro Local Government Area of Kwara State is positive.

Test of Hypothesis:

Ho1: There is no significant difference in the perceived influence of teachers professionalism on pupils academic achievement based on gender in Moro Local Government Area of Kwara State

Table 2: Summary of t-test Analysis on the significant difference in the perceived influence of teachers professionalism on pupils academic achievement based on gender

Perceived Influence	N	Mean	Std. Deviation	T	df	Sig.	Remark
Female	52	62.6667	5.98888	.265	88	.422	
Male	48	62.3462	6.26501				

Variable: Perceived influence of teachers professionalism

Table 2 shows the significant difference in the perceived influence of teachers professionalism on pupils academic achievement based on gender. The findings shows that there was no significant difference ($t = .265$; $df = 88$; $P > 0.05$), suggesting that both male and female teachers perceive the influence of professionalism on academic achievement similarly. The hypothesis was therefore not rejected in the light of the resultsince the significant value ismore than 0.05. This simply implies that female teachersperception of the influence of teachers professionalism on pupils academic achievement (Mean= 62.67) is not significantly different from that of male teachers perception (Mean= 62.35). This simplyimplies that there is no significant difference in the perception of both gender on the influence of teachers professionalism on pupils academic achievementin the Local Government.

Discussion of findings

This study examined the perceived influence of teachers' professionalism on pupils' academic achievement in Moro Local Government Area of Kwara State. The findingof the study revealed that theperceived influence of teachers' professionalism on pupils' academic achievement in Moro Local Government Area of Kwara State was positive. This is evident in Table 1 as the mean rating of all the items was more than 3.20 and standard deviation respectively. The finding revealed that teachers professionalism on pupils educational matters have a significant influence on their academic achievement. This finding implies that when teachers demonstrate high levels of professionalismsuch as mastery of subject content, adherence to ethical practices, effective communication, commitment to continuous development, and the ability to employ appropriate teaching methodsit significantly enhances pupils' learning outcomes.This aligns with the assertion of Jimenez and Menendez (2021)who emphasized that qualified and professionally trained teachers are critical to students' academic success.

Similarly, Canuto *et. al*.,(2024) found that teacher quality, including qualifications, pedagogical skills, and professional behavior, had a direct positive impact on pupils' performance in basic education. The positive perception by respondents underscores the importance of investing in teacher training and professional development, particularly in rural and underserved areas like Moro LGA, to enhance educational outcomes. It further suggests that pupils are more likely to achieve academic success when they are guided by teachers who not only possess the necessary academic qualifications but also model ethical and professionalbehavior. This finding reinforces the premise of the social learning theory by Bandura (1977), which posits that learners tend to model the behaviors of those they perceive as competent and authoritativetraits often attributed to professional teachers.Furthermore, the finding aligns with Nigerian educational policy thrusts, which emphasize the role of qualified and professional teachers in achieving the goals of Universal Basic Education. Hence, education stakeholders must continue to promote policies that enhance teacher professionalism, including enforcing minimum qualification standards, offering regular in-service training, and encouraging professional certification. In addition,Ahmad*et. al.*(2023) also found that teachers professionalism has a significant influence on children academic achievement as it enhances not only their academic performance but it also had positive influence on their attitude and behavior to the society at large. This implies that the teachers level of professionalism plays a vital role on the academic success of the primary school pupils and enhance teaching and learning.

The finding of the study also revealed that there is no significant difference in the perceived influence of teachers' professionalism on pupils' academic achievement based on gender in Moro Local Government Area of Kwara State. This is evident in table 2 as the t-test analysis shows no significant difference in the perceived influence of teachers professionalism on pupils academic achievement based on gender($t = .265$; $df = 88$; $P > 0.05$). The table shown that the female teachers (Mean= 62.67) is not significantly different from that of male teachers (Mean= 62.35). The study found that both male and female respondents had a similar perception of the impact of teacher professionalism on pupils' academic performance.The finding suggests that gender does not mediate how pupils or stakeholders perceive the role of teachers' professionalism in academic outcomes. It also implies that professionalism in teaching is universally appreciated and recognized, regardless of the gender of the teacher. This finding is consistent with the study of Lesmana(2023), who found no significant gender differences in attitudes toward teachers' effectiveness and professionalism among primary school pupils.The result also reflect a growing awareness of gender equity in educational settings, especially in Kwara State, where various initiatives have been put in place to promote inclusive and equitable education for all. It suggests that efforts to improve teaching standards are reaching a broad audience and that pupils, regardless of gender, benefit equally from professional teaching practices. This finding also aligns with the principles of the Gender Neutrality Theory in education, which advocates that educational experiences, including the perception of teacher effectiveness, should not be influenced by gender. Thus, teacher training and professional development programs should continue to be structured in ways that enhance universal teaching competencies rather than focusing on gender-specific strategies.

Conclusion

Based on the findings of the study, it was concluded that the perceived influence of teachers' professionalism on pupils' academic achievement in Moro Local Government was positive. This implies that, teachers' professionalism plays a critical role in shaping pupils' academic achievement in the local government. The study concluded that, aspects of professionalism such as teachers' qualifications, pedagogical skills, adherence to ethical standards, and continuous professional development significantly affect pupils' academic outcomes. Professional and competent teachers tend to apply effective teaching methods, manage classrooms efficiently, and inspire learners, all of which contribute to improved academic performance. Therefore, Stakeholders in the education sector like government agencies, school administrators, and teacher training institutions must prioritize policies and initiatives that promote professional development and accountability among teachers. When teachers are adequately prepared and motivated, the benefits are reflected in the academic success of their pupils.

Recommendations

Based on the above conclusion, the following recommendations were made:

1. Teachers should be encouraged and supported to participate in professional development programs to update their knowledge and enhance their teaching and learning.These professional development initiatives should focus on instructional strategies, classroom management, pedagogical content knowledge, ethics and learner-centered methodologies to improve teaching effectiveness and boost pupil achievement.
2. School administrators and education boards should ensure that only qualified, licensed, and well-trained individuals are engaged to teach, particularly at the foundational level of education where early learning is critical.
3. Teacher's motivation and job satisfactory should be enhanced through the provision of digital technology, better remunerations and conducive working environment to promote professionalism and enhance teaching and learning.
4. Teacher's training and professional development programs should continue to be structured in ways that enhance universal teaching competencies rather than focusing on gender-specific strategies.

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IMPLEMENTATION OF EARLY CHILDHOOD EDUCATION POLICIES: EXAMINING THE SHORTAGE OF TRAINED TEACHERS IN PUBLIC SCHOOLS IN KWARA STATE

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Abstract
This study examined the implementation of early childhood education policies in Kwara State, specifically focusing on the shortage of trained teachers in public schools. The research adopted a descriptive survey design with a mixed-method approach (quantitative and qualitative). The population comprised 222 public early childhood education teachers, while the sample size was 141 respondents, selected using multistage sampling techniques involving simple random and convenience sampling. Data were collected using a proforma, an unstructured interview guide, and a self-developed questionnaire titled "Implementation of Early Childhood Education Policies and Teacher Shortage (IECEPTS)." IECEPTS was validated by experts in early childhood and measurement & evaluation, and its reliability was established using Cronbach's Alpha, yielding the coefficient of 0.89. Ethical considerations were adhered via including informed consent, confidentiality, and voluntary participation. Descriptive statistics (mean and standard deviation) and an independent t-test were used for data analysis. Findings revealed that only 33% of early childhood education teachers in public schools are qualified, highlighting a critical shortage of trained personnel. The study also found no structured policy provisions for teacher recruitment and deployment and no significant differences in perceived policy implementation challenges based on gender ($p = 0.85$) or school location ($p = 0.889$). The study concludes that systemic challenges such as poor funding, weak policy enforcement, and a lack of continuous professional development hinder early childhood education policy implementation. It recommends targeted recruitment, structured policy frameworks, increased funding, and equitable resource distribution to enhance early childhood education in Kwara State.
Keywords: Early Childhood Education, Policy Implementation, Teacher Shortage, Public Schools

Introduction

Education serves as the bedrock of national development, and early childhood education (ECE) lays the foundation for lifelong learning. The Nigerian National Policy on Education explicitly addresses the implementation of ECE by mandating the establishment of pre-primary sections in existing public schools. The policy further requires that teacher education programs include specialization in early childhood education, that the medium of instruction be primarily the mother tongue or the language of the immediate community, and that play-based methods dominate teaching in ECE centres, supported by appropriately oriented curricula. In addition, it prescribes regulation and control of ECE operations, including a teacher/pupil ratio of 1:25, the

setting and monitoring of minimum standards for childcare centres, and active participation of government, communities, and teachers' associations in running and maintaining these facilities. However, one may wonder whether policies like those under the Universal Basic Education Commission (UBEC) and the State Universal Basic Education Board (SUBEB) genuinely fulfil their promise of ensuring that every child counts and has access to quality education. With many parents engaged in the struggle to earn a living, leaving their children in the care of schools, does the current structure truly accommodate all children? If UBEC and SUBEB are committed to providing universal access to early childhood education, why do public schools continue to experience a shortage of trained teachers to cater to the developmental needs of these young learners?

UBEC and SUBEB are structured to facilitate quality education at all levels, with a specific emphasis on early childhood education through the Early Child Care Development and Education (ECCDE) framework (Federal Ministry of Education, 2019). The policy mandates that every public primary school in Nigeria should have a pre-primary education section integrated into the system, ensuring early exposure to foundational learning (Ogunmadeet. al., 2023). This initiative aligns with the global Sustainable Development Goal (SDG 4), which aims to provide inclusive and equitable quality education for all children, particularly those from disadvantaged backgrounds (United Nations, 2016). However, despite the existence of these policy frameworks, the practical implementation of early childhood education policies is fraught with challenges, particularly concerning the availability of trained teachers in public schools (Akinware, 2021).

The Yoruba adage says, “Ilé latí ńkẹ̀sọ́ ròde”,which means that charity beginsat home. A key and first mandate of UBEC and SUBEB in Nigeria is to ensure that public schools are adequately staffed with professionally trained primary school teachers, including early childhood educators who possess specialised knowledge in child development (Ogunyemi &Lagunju, 2022), before the private schools. However, there exists a critical disconnect between policy aspirations and reality. The importance of treating children with love and raising them in a way that benefits their future directly relates to the necessity of trained early childhood teachers to provide quality education and care as it is said by Prophet (PBUH)“No father has given a child anything better than good manners.” (Sunan al-Tirmidhi, 4977, Hasan)” (Ibn Majah, 3671).

This situation further exacerbates educational inequality, as private schools, which typically employ trained early childhood educators, continue to provide superior early learning experiences compared to public institutions (Olaleye & Omotayo, 2020). The absence of trained professionals in public schools has dire implications for the overall effectiveness of early childhood education policies (Adedokun & Adebayo, 2023). Studies have shown that children who receive structured early childhood education from trained professionals are better equipped for primary education, exhibit stronger literacy and numeracy skills, and demonstrate improved social adaptability compared to those who lack such exposure (Ogunmadeet. al., 2023).

Without trained educators, the quality of knowledge children receive may be compromised, affecting their long-term development. Early childhood educators play a crucial role in fostering holistic development by facilitating cognitive, linguistic, socio-emotional, and motor skills among young children (Pianta et. al., 2021). Unlike general education teachers, early childhood specialists are trained to implement structured play-based learning, individualised instructional methods, and socio-emotional interventions that enhance children's developmental milestones (Akinware, 2021).

The ineffective implementation of early childhood education policies in Nigeria can be attributed to several structural and systemic challenges. Key among these is inadequate funding, which limits the recruitment, training, and retention of qualified early childhood educators in public schools (Ogunyemi &Lagunju, 2022). The theoretical underpinning of this study is derived from Bronfenbrenner's Ecological Systems Theory, which posits that children's learning and development are influenced by various interacting environmental systems, including family, school, societal structures (microsystem) and parental work influence (exosystem) on the children with the presence of well-trained early childhood educators in public schools serves as a critical component of the microsystem and exosystem that directly shape children's cognitive and socio-emotional development(Pianta et. al., 2021).

The necessity of having skilled early childhood educators within public institutions to provide structured and nurturing learning environments that enhance children's developmental trajectories. Early childhood education policies in Nigeria are well-structured under UBEC and SUBEB, but significant gaps in implementation continue to undermine their effectiveness. The shortage of trained early childhood educators in public schools remains a critical barrier to achieving equitable access to quality early learning experiences.

Statement of the Problem

The implementation of early childhood education (ECE) policies in Kwara State has faced significant challenges, particularly regarding the availability of trained teachers in public schools. Despite policy frameworks established by the Universal Basic Education Commission (UBEC) and State Universal Basic Education Board (SUBEB) to ensure equitable access to quality early childhood education, there remains a shortage of adequately trained educators to meet the growing demand. This gap raises concerns about the effectiveness of early childhood education, as unqualified or insufficiently trained teachers may lack the pedagogical skills necessary to support children's cognitive, social, and emotional development. Without a well-trained workforce, achieving the policy goal of providing quality foundational education for all children becomes increasingly difficult, thereby undermining the broader objectives of educational equity and national development.

Purpose of the Study

The main purpose of the study is to investigate the availability of trained early childhood teachersin Kwara State. The specific purpose is to:

i. assess the current availability of trained early childhood teachers in public schools in Kwara State.
ii. determine the existing policy provisions guiding early childhood education teacher recruitment and deployment in Kwara State.
iii. identifythe major challenges affecting the full implementation of early childhood education policies in Kwara State.
iv. examine whether challenges affecting the implementation of early childhood education policies in Kwara State differ based on gender.
v. determine whether challenges affecting the implementation of early childhood education policies in Kwara State differ based on school location.

Research Questions

The following research questions were raised.

i. What is the current availability of trained early childhood teachers in public schools in Kwara State?
ii. What are the existing policy provisions for early childhood education teacher recruitment and deployment in Kwara State?
iii. What are the major challenges affecting the full implementation of early childhood education policies in Kwara State?

Research Hypotheses

The following research hypotheses were formulated.

H01: There is no significant difference in the challenges affecting the full implementation of early childhood education policies in Kwara State based on gender.

H02: There is no significant difference in the challenges affecting the full implementation of early childhood education policies in Kwara State based on school location.

Methodology

This study employs a Parallel Mixed-Method Design (quantitative to answer research question one and three while qualitative to answer research question two) to examine the shortage of trained early childhood teachers in public schools in Kwara State. The population for this study consists of 222 public early childhood education (ECE) teachers in Kwara State, as documented in the Kwara State Annual School Census (ASC) Report (2020). The target population comprises teachers and educational stakeholdersin government-owned primary schools across the 16 local government areas of Kwara State. A simple Random Sampling Technique (SRT) was used to select 141 respondents from four Local government areasusinga research advisor (2006), while convenience sampling was used to meet the respondents during a seminars.Three instruments were used:a proforma, unstructured interview questions and a questionnaire. A proforma was used to assess the current availability of trained early childhood teachers in public schools in Kwara State using Kwara State AnnualSchool Census (ASC) Report (2020). An unstructured interview was used to assess existing policy provisions for early

childhood education teacher recruitment and deployment in Kwara State, while a self-developed questionnaire titled "Implementation of Early Childhood Education Policies and Teacher Shortage (IECEPTS)" was used to collect data on challenges affecting the full implementation of early childhood education policies in Kwara State. The questionnaire was based on a modified four-point Likert Scale which ranged from Strongly Agree (SD) to Strongly Disagree (SD). Section A captured the demographic data of respondents (gender and School location), while Section B comprised 7 items covering possible Challenges in Policy Implementation. IECEPTS was subjected to face and content validation by experts in Early Childhood and Measurement & Evaluation, ensuring its relevance and appropriateness. The reliability of IECEPTS was determined using Cronbach's Alpha, yielding a coefficient value of 0.89, indicating high internal consistency.Informed consent was obtained from all participants, confidentiality of responses was assured, and participation was voluntary to adhere to ethical standard. Data collected were analysed using descriptive statistics of mean and standard deviation to answer the research questions, while an independent t-test was used to examine differences in teacher and stakeholders' perceptions across different school locations (urban and rural settings).

Results

Research Question 1: What is the current availability of trained early childhood teachers in public schools in Kwara State?

To analyse the availability of trained early childhood teachers in public schools in Kwara Stateusingfrequency tables, mean, and standard deviation. Data from the 2018–2019 Kwara State School Census Report (2020) were analysed and presented in a structured statistical format below.

Table 1: Summary of descriptive statistics of the construct, a frequency table for qualified teachers and qualification State

S/N	LGEA	Total Teachers	Qualified Teachers	Qualification Rate (%)
ĈB	Asa	18	14	78%
ČB	Baruten	7	5	71%
ĊB	Edu	3	2	67%
ÇB	Ekiti	6	3	50%
DB	Ifelodun	23	18	94%
ĎB	Ilorin East	19	17	89%
ĐB	Ilorin South	20	18	90%
ĐB	Ilorin West	23	9	39%
EB	Irepodun	13	12	94%
ĈĆB	Isin	3	3	100%
ĈĈB	Kaiama	1	1	100%
ĈČB	Moro	6	4	67%
ĈĊB	Offa	3	3	100%
ĈÇB	Oke-Ero	3	3	100%
ĈDB	Oyun	3	3	100%
ĈĎB	Patigi	14	10	75%
Total		**148**	**49**	**33% (overall)**

The frequency table above for the **number of teachers per LGEA** and their qualification status indicates that **only 49 out of 148 teachers (33%) are qualified**, which highlights a critical shortage of trained early childhood education teachers in public schools. Also, the table revealed that GEAs such as **Ilorin West (39%)**and**Edu (67%)** have the lowest qualification rates.

Table 2: *Descriptive Statistics of Early Childhood Education Teachers in Public Schools in Kwara State*

	Mean	SD	Remarks
Total Teachers	10.31	8.06	
Qualified Teachers	7.81	6.18	Shortage
Valid N (listwise)			

Table 2 above indicatesthe availability of early childhood education teachers in public schools across Kwara State. The mean number of total teachers per Local Government Education Authority (LGEA) is 10.31, with a standard deviation of 8.06, indicating substantial variability in teacher distribution among LGAs. The mean number of qualified teachers per LGEA stands at 7.81, with a standard deviation of 6.18, suggesting disparities in the availability of trained personnel across different local governments. The high standard deviations observed in both variables indicate significant inconsistencies in teacher deployment.

Research Question 2: What are the existing policy provisions for early childhood education teacher recruitment and deployment in Kwara State?

The results for the research question on the existing policy provisions for early childhood education teacher recruitment and deployment in Kwara State were obtained through interviews with stakeholders and teachers and analysed using thematic analysis.

The findings revealed no existing policy provision for early childhood education teacher recruitment and deployment in Kwara State, as "Respondent A" expressed uncertainty about the inclusion of early childhood education under the State Universal Basic Education Board (SUBEB) programs. The respondent stated, *"As far as I know, early childhood education in Kwara State is mainly handled by private schools. I am not aware that public schools under SUBEB have structured provisions for this level of education."* Another respondent emphasised the lack of recruitment efforts for early childhood education teachers in recent years, stating, *"There has been no specific recruitment for early childhood education teachers under this administration. If at all recruitment takes place in the future, there is no guarantee that early childhood caregivers will be considered separately.* Another educator pointed out that even when teachers are deployed to public schools, many lack the necessary training to handle early childhood education. The respondent explained, *"Teachers posted to public schools often do not have specialised training in early childhood education. Many of them are general education teachers who struggle with the foundational developmental needs of young learners."* One respondent, who has been working within the education sector for years, expressed concern over the inconsistency in implementing policies at the school level. *"On paper, there may be provisions for early childhood education, but in practice, many public schools do not have the required structures, materials, or trained teachers to implement it effectively"*

Research Question 3: What are the major challenges affecting the full implementation of early childhood education policies in Kwara State?

To find out the challenges affecting the full implementation of early childhood education in Kwara state, mean responses of the respondents to each item on the questionnaire were computed, having modified four Likert Scale format of *Strongly Agree (4), Agree (3), Disagree (2), and Strongly Disagree (1).* Toget the cut-off mark, the average of the total pointswas calculated to be 3.0 (That is,4+3+2+1 = 10: 10/4 = 2.50). The result is presented in the table below:

Table 3: *Challenges Affecting the Full Implementation of Early Childhood*

S/N	Items	Mean	SD	Ranks	Remarks
1.	There is an inadequate number of trained teachers for early childhood education in public schools.	3.48	1.02	5th	High
2.	The government provides insufficient funding for the effective implementation of early childhood education policies.	3.67	1.41	2nd	High
3.	Infrastructure and teaching facilities for early childhood education in public schools are grossly inadequate.	3.64	1.45	3rd	High
4.	There is a lack of structured recruitment and deployment processes for early childhood education teachers in Kwara State.	3.61	1.44	4th	High
5.	Policymakers and education stakeholders do not give adequate attention to early childhood education in Kwara State.	3.76	1.28	1st	High
6.	The absence of continuous professional development and training programs limits teachers' effectiveness in early childhood education.	3.21	1.20	6th	High
7.	Societal and parental attitudes toward early childhood education negatively impact policy implementation and teacher recruitment.	3.08	1.13	7th	High

Table 4 above reveals challenges affecting the full implementation of early childhood education policies in Kwara State. The despondence evidence was seen in the table, where the mean value of all theitems was greater than 3.0. From their response, it was revealed that challenges affecting the full implementation of early childhood education policies in Kwara State are; Policymakers and education stakeholders do not give adequate attention to early childhood education, government provides insufficient funding for the effective implementation of early childhood education policies, infrastructure and teaching facilities for early childhood education in public schools are grossly inadequate, lack of structured recruitment and deployment processes for early childhood education teachers, inadequate number of trained teachers for early childhood education in public schools, absence of continuous professional development and training programs limits teachers' effectiveness in early childhood education, and societal and parental attitudes toward early childhood education negatively impact policy implementation and teacher recruitment. These were all ranked 1st, 2nd, 3rd, 4th, 5th, 6th and 7threspectively by their mean values from thehighest to the least. The overall mean value of 3.49, which is greater than the cut-off means of 2.50, indicated that all the items listed above are challenges affecting the implementation of early childhood education policies in Kwara State. Those items that are above the weighted mean (3.49) indicated that they are the most prominent factors identified by the respondents. Hence, it was revealed that Policymakers and education stakeholders do not give adequate attention to early childhood education, which is the majorchallenge affecting the full implementation of early childhood education policies in Kwara State.

Research Hypothesis 1: There is no significant difference in the challenges affecting the full implementation of early childhood education policies in Kwara State based on gender.

Table 4: *Table of t-test analysis showing the differences between males and females in perceiving the challenges affecting the full implementation of early childhood education policies in Kwara State*.

	Gender	N	Mean	SD	Df	t-value	Sig.	Decision
TotalChallenges	Male	64	24.14	4.05	**139**	**-.800**	**0.85**	**H_{01} Retained**
	Female	77	24.70	4.22				

Table 4 above shows no significant difference between males and females in perceiving the challenges affecting the full implementation of early childhood education policies in Kwara State. The table revealed that there is no significant difference between males and females in their viewson challenges that affect the full implementation of early childhood education policies in Kwara State. This was evident by the p-value of 0.85, which is not significant at the 0.05 alpha level (0.85 > 0.05). Hence, the stated null hypothesis, which states that there is no significant difference in the challenges affecting the full implementation of early childhood education policies in Kwara State based on gender, is retained. It can, therefore, be affirmed that male and female respondents comprehend all these challenges from the same point of view.

Research Hypotheses 2: There is no significant difference in the challenges affecting the full implementation of early childhood education policies in Kwara State based on school location.

Table 5: *t-test table analysis showing the differences between responses from rural and urban stakeholders and teachers on the challenges affecting the full implementation of early childhood education policies*

	School Location	N	Mean	SD	df	t-value	Sig	Decision
TotalChallenges	Rural	46	24.26	4.14	**139**	**-.3.70**	**0.889**	**Not Significant**
	Urban	95	24.54	4.15				

Table 5 above revealed that there is no significant difference between those in rural and urbanareas in insightful the challenges affecting the full implementation of early childhood education policies in Kwara State. The t-test result compares responses from rural stakeholders (N = 46, M = 24.26, SD = 4.14) and urban stakeholders (N = 95, M = 24.54, SD = 4.15) regarding the challenges. The t-value (-3.70) and p-value (0.889) indicate that there is no statistically significant difference between the responses of rural and urban stakeholders. Since the p-value (0.889) is greater than 0.05, the null hypothesis is then retained, confirming that respondents from rural and urban areas perceive the challenges of early childhood education policy implementation similarly. It can, therefore, be affirmed that rural and urban respondents comprehend all these challenges from the same point of view.

Discussion of Findings

The findings of this study indicated that the availability of trained early childhood teachers in public schools in Kwara State is significantly low. *The mean number of qualified teachers per LGEA, with a standard deviation,suggests disparities in the availability of trained personnel across different local governments.* Frequency distribution and mean analysis reveal that a majority of public schools lack adequately trained early childhood educators, with many preschool classes being handled by generalist primary school teachers rather than specialised professionals. This finding aligns with the study by Ajibola *et. al*., (2022), which reported that public schools in Nigeria face an acute shortage of early childhood educators, often leaving primary school teachers without specialised training to handle preschool classes. The absence of dedicated early childhood professionals negatively impacts learning outcomes, as generalist teachers may lack the pedagogical skills required to address the unique developmental needs of preschoolers (Adedokun & Adebayo, 2023).

The results indicated that there are no structured policy provisions for the recruitment and deployment of early childhood education teachers in Kwara State. The stakeholders interviewed expressed uncertainty about the inclusion of early childhood education under the State Universal Basic Education Board (SUBEB), emphasising that this level of education is primarily handled by private schools. The lack of recruitment efforts for early childhood education teachers in public schools further exacerbates the shortage of trained personnel. These findings are consistent with Ogunyemi and Lagunju (2022), who highlighted that despite policy frameworks under the Universal Basic Education Commission (UBEC) and SUBEB, implementation remains weak due to inadequate funding and the absence of dedicated recruitment initiatives.

The findings highlighted multiple challenges that hinder the effective implementation of early childhood education policies in Kwara State. A critical challenge is that policymakers and education stakeholders do not give adequate attention to early childhood education, which leads to inadequate funding allocated to early childhood education, restricting the recruitment, training, and retention of qualified teachers. Poor remuneration and unfavourable working conditions further discourage trained early childhood educators from taking up positions in public schools, as observed in previous studies by Olaleye and Omotayo (2020). Another major challenge is the lack of continuous professional development programs tailored specifically for early childhood educators, resulting in an underprepared workforce (Ajayi, 2021).

The findings revealed that there is no statistically significant difference in the perception of challenges affecting the full implementation of early childhood education policies in Kwara State based on gender. The p-value of 0.85, which exceeds the 0.05 significance level, confirms that both male and female respondents share similar perspectives on the barriers hindering policy implementation. This suggests that weak policy enforcement is universally recognised by both genders as a key impediment to the effective implementation of early childhood education policies. This finding aligns with the study of Ogunyemi and Adepoju (2022), which reported that gender does not significantly influence perceptions of educational policy challenges since both male and female stakeholders, whether teachers, administrators, or policymakers, experience similar institutional and systemic barriers in the education sector.

The results also demonstrated that there is no significant difference in the perception of early childhood education policy challenges between stakeholders in rural and urban schools. The statistical analysis showed that the mean scores for rural (M = 24.26, SD = 4.14) and urban (M = 24.54, SD = 4.15) respondents were very close, and the p-value of 0.889 exceeded the 0.05 threshold. This suggests that respondents in both settings recognise similar challenges affecting the full implementation of early childhood education policies, including inadequate teacher recruitment, lack of instructional materials, insufficient funding, and poor infrastructure.This finding aligns with the study of Adebisi *et. al.*, (2021), which reported that while rural schools often face more infrastructural deficits, urban schools also struggle with policy implementation issues, such as overcrowding, resource misallocation, and bureaucratic inefficiencies.

Conclusion

The findings of this study underscore the systemic challenges hindering the full implementation of early childhood education policies in Kwara State, particularly policymakers and education stakeholders who do not give adequate attention to early childhood education, the shortage of trained educators, inadequate funding, weak policy enforcement, and poor infrastructure. Addressing these issues requires urgent policy reforms,

increased investment in teacher recruitment and training, and enhanced resource allocation to improve learning conditions. Strengthening early childhood education through targeted interventions will ensure equitable access to quality foundational learning experiences, ultimately enhancing educational outcomes for children in Kwara State.

Recommendations

The following recommendations were construed from the findings of the study.

1. State Universal Basic Education Board (SUBEB) should implement a targeted recruitment and training program for specialised early childhood teachers to ensure qualified personnel in public schools.
2. Kwara State Ministry of Education should establish clear policies mandating the recruitment and deployment of certified early childhood educators under the state's education framework.
3. State Government should allocate a dedicated budget for early childhood education to support teacher training, infrastructure development, and the provision of instructional materials.
4. Education Stakeholders and Policymakers should adopt inclusive, gender-responsive policies that address early childhood education challenges holistically without bias.
5. Local Government Education Authorities (LGEAs) should ensure the equitable distribution of resources, infrastructure, and teaching materials across both rural and urban schools.

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VULNERABILITY AND EARLY CHILDHOOD EDUCATION IN CHALLENGING CIRCUMSTANCES IN LAGOS STATE

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Abstract

Early childhood education (ECE) is a critical foundation for children's cognitive, language, and socio-emotional development; however, access to quality ECE remains uneven for children living in vulnerable circumstances. This study examined the impact of vulnerability on access to, participation in, and quality of early childhood education among preschool children in Lagos State, Nigeria. A descriptivestatistic research design was adopted, involving 180 participants comprising preschool children aged 3–5 years, their parents, and teachers drawn from public and private nursery schools across three local government areas representing diverse socio-economic contexts. Data were collected using structured parent questionnaires, a Language and Cognitive Development Checklist, and a Teacher Rating Scale, all of which demonstrated acceptable reliability (Cronbach's alpha = 0.79). Descriptive statistics, including frequencies, means, and standard deviations, were used for analysis. Findings revealed that low household income, food insecurity, inadequate learning materials, high preschool fees, and poor infrastructure constitute major barriers to vulnerable children's access to quality early learning environments. Results further indicated that vulnerability is associated with moderate levels of language, cognitive, and socio-emotional development, with socio-emotional outcomes being the most adversely affected. The study concludes that socio-economic vulnerability continues to perpetuate educational inequality in early childhood in Lagos State. It therefore recommends holistic, equity-driven policy responses that integrate education, nutrition, teacher capacity development, and parental support to enhance inclusive and quality early childhood education for vulnerable children.

Keywords*:* Vulnerability, Socio-economic inequality, Preschool development, Poverty, Cognitive development

Introduction

The early childhood years, typically defined as ages 0–8, represent a critical developmental period during which children acquire foundational skills in language, cognition, socio-emotional regulation, and motor development (UNESCO, 2025). Access to quality early childhood education (ECE) has been identified globally as a key determinant of children's lifelong learning trajectories, health, and socio-economic participation (Heckman, 2025). However, in contexts of vulnerability and challenging circumstances, children are often deprived of such opportunities, placing them at heightened risk of developmental delays, poor academic outcomes, and social marginalization.

Lagos State is the nation's most urbanised and densely populated region the challenge of providing equitable and inclusive early childhood education is profound. Rapid urbanization, high levels of poverty, informal settlements, and socio-economic inequalities has created vulnerable conditions that significantly affect young children's educational experiences (Akinware, 2019). Vulnerability in this context may arise from multiple and intersecting factors including poverty, child labor, displacement, poor health, food insecurity, and lack of safe learning environments (UNICEF, 2021). These conditions disrupt early learning, limit school readiness, and perpetuate intergenerational cycles of disadvantage.

Despite government and non-governmental interventions to expand access to early childhood care and education, many vulnerable preschool children in Lagos continue to face barriers such as inadequate infrastructure, insufficiently trained teachers, lack of culturally responsive curricula, and limited parental engagement (Okebukola, 2016). While some studies have documented the general challenges of early

childhood education in Nigeria, there remains a paucity of empirical research that specifically interrogates the intersection of vulnerability and ECE outcomes in Lagos State's unique socio-economic and cultural landscape. Addressing this gap is essential to designing responsive policies and practices that safeguard children's rights to education in line with Sustainable Development Goal 4 (SDG 4).

Early childhood education (ECE) has long been recognized as a cornerstone of human development, with significant implications for children's cognitive, linguistic, and socio-emotional outcomes (Heckman, 2025; UNESCO, 2025. However, children living in vulnerable circumstances such as poverty, conflict zones, or displaced communities are disproportionately deprived of access to quality ECE. UNICEF (2021) highlights that nearly half of children under five in low- and middle-income countries experience conditions of deprivation that negatively affect their learning and development. Factors such as malnutrition, inadequate health care, poor housing, and limited parental support contribute to delayed school readiness, compromised cognitive performance, and reduced socio-emotional resilience (Engle *et al.*, 2011).

Globally, research demonstrates that vulnerability directly correlates with educational inequality. For example, in Sub-Saharan Africa, poor children are five times less likely to attend preschool than their wealthier peers (World Bank, 2019). This disparity perpetuates cycles of poverty and exclusion, as children who lack access to quality ECE are less likely to succeed academically, secure employment, and contribute productively to society later in life. Interventions such as inclusive curricula, teacher capacity building, and targeted social protection schemes have been recommended to bridge this divide (Britto *et. al.*, 2017).

Nigeria, were approximately 43% of the population lives below the poverty line (National Bureau of Statistics [NBS], 2020), socio-economic vulnerability significantly influences access to education. Early childhood education, though recognized in policy frameworks such as the National Policy on Education (Federal Republic of Nigeria, 2014), remains underfunded and inconsistently implemented. Children from disadvantaged backgrounds are more likely to be excluded from preschool programs due to factors including high tuition costs, inadequate infrastructure, child labor demands, and parents' limited awareness of the value of ECE (Okebukola, 2016; Akinware, 2019).

Scholarly evidence suggests that vulnerability in Nigerian urban centers is compounded by rapid urbanization and informal settlement growth. In Lagos Statethe nation's economic hubmillions of children live in slums with poor sanitation, overcrowded schools, and minimal access to structured ECE (UN-Habitat, 2016). Studies have shown that children in such environments often display delayed literacy and numeracy skills, low attention spans, and diminished socio-emotional regulation (Adeyemi, 2016). While government and non-governmental organizations have attempted to address these issues through initiatives like the Universal Basic Education (UBE) scheme, implementation gaps remain, particularly in reaching marginalized populations (Obidike, 2012).

Vulnerability in early childhood is a multidimensional construct that encompasses economic deprivation, poor health and nutrition, unsafe or unstable living conditions, limited stimulation at home, exposure to violence, displacement, and lack of access to safe, quality learning environments (multidimensional poverty frameworks). Children experiencing one or more of these conditions are at elevated risk of delayed cognitive, language and socio-emotional development and poorer school readiness (national MPI analyses; global child-poverty syntheses). In policy and research, vulnerability is best treated as intersecting deprivations rather than a single deficit a perspective that foregrounds holistic, cross-sectoral responses (Ophi 2023).

Recent national evidence shows a high prevalence of multidimensional child poverty in Nigeria, with striking deficits in intellectual stimulation and material resources that are pivotal for early development (a large share of children are multidimensionally poor, and intellectual stimulation is one of the most affected dimensions). Households with under-five children are disproportionately likely to be poor, and children in these households face greater constraints on nutrition, health care, and access to learning supports all determinants of early learning outcomes. These national patterns are salient for Lagos because the state concentrates large numbers of poor and vulnerable households even as it accounts for substantial economic activity; Lagos therefore exhibits stark intra-urban inequalities, where affluent neighborhoods sit alongside densely populated informal settlements (Ophi 2023).

Lagos's rapid urbanization and the expansion of informal settlements have produced educational ecosystems in which supply, affordability and quality of early childhood services vary widely. Diagnostic and resilience studies of Lagos document concentrated pockets of deprivation: inadequate housing, overcrowding,

sanitation deficits, and limited public service coverage conditions that undermine children's health and reduce caregivers' capacity to provide early stimulation. Importantly, many children in low-income urban communities attend private, low-cost preschools whose staffing, curriculum fidelity, and physical environments are often poor; this private-sector predominance for early years provision in urban slums raises affordability and quality concerns. Thus, spatial and economic inequality in Lagos maps directly onto unequal early learning opportunities.

Studies of ECE in Nigeria consistently flag weak implementation: shortages of trained early childhood specialists, inconsistent adherence to developmentally appropriate practice, inadequate classroom resources, and weak regulatory oversight (leading to unregulated proliferation of preschools of varying quality) (Obidike, 2012). Researchers report that teacher preparation programs often do not equip educators with pedagogies suited to the needs of vulnerable learners (play-based, trauma-informed, culturally responsive approaches), while infrastructural deficits and high pupil-to-teacher ratios further reduce instructional quality. These constraints are especially pronounced in under-resourced urban and peri-urban settings in Lagos where public provision is limited and low-cost private providers predominate.

Empirical work shows multiple causal pathways linking vulnerability to poor early learning: (a) insufficient nutrition and ill health reduce attention and cognitive processing; (b) limited home stimulation and parental literacy constrain vocabulary development and emergent literacy; (c) precarious living and stressors (violence, instability) impair socio-emotional regulation; and (d) constrained access to quality ECE reduces exposure to rich language and early numeracy experiences that predict later academic success. In Lagos State, proxy indicators collected in recent studies (food insecurity, crowded housing, and child engagement deprivations) correlate with lower measures of school readiness and early language scores, underlining how household and community-level vulnerabilities produce measurable deficits by preschool age (Ophi 2023).

Nigeria's policy architecture (National Policy on Education and related ECE guidelines) recognizes the importance of early childhood but falls short in financing, regulation and targeted programming for the most vulnerable. International and national actors (UNESCO, UNICEF, NGOs) have supported pilot programs, capacity building, and service innovations in urban areas, but scale, sustainability and effective targeting remain barriers. In Lagos, the combination of active non-state provision and state-level planning (resilience and development strategies) offers a platform for interventions yet evaluations highlight weaknesses in teacher professional development, integration of health and nutrition services with ECE, and mechanisms to reach informal settlements (UNICEF, 2021).

Although there is a growing body of literature on Nigeria's ECE challenges, relatively few rigorous, mixed-methods studies focus specifically on how multiple forms of vulnerability interact to shape early learning outcomes in Lagos State's diverse urban contexts. Existing work often treats access (enrolment) separately from quality (learning outcomes), or focuses on primary education rather than pre-primary years. Moreover, evidence is uneven across LGAs and informal settlements limiting generalizability of program recommendations. There is therefore need for research that: (a) combines household, classroom and child-level measures to link household vulnerability to child development; (b) evaluates the quality of private low-cost ECE providers common in Lagos slums; and (c) tests integrated interventions (nutrition + stimulation + teacher training) under urban conditions. These gaps frame the rationale for studies that adopt multidimensional vulnerability metrics and link them to direct assessments of child language, cognition and socio-emotional skills (UNICEF, 2021).

This study therefore examines the relationship between vulnerability and early childhood education outcomes in Lagos State, with emphasis on how poverty, social exclusion, and environmental hardshipaffect preschool children's access to and quality of education. By focusing on children in challenging circumstances, the study underscores the urgency of adopting inclusive and equity-driven educational approaches in Nigeria's most complex urban environment.

Purpose of the study

The primary purpose of this study is to examine the impact of vulnerability on access, participation, and quality of early childhood education among preschool children in Lagos State. Specifically, the study seeks to:

i. explore the challenges faced by vulnerable children in accessing quality learning environments, instructional resources, and teacher support.
ii. assess the relationship between vulnerability and children's language, cognitive, and socio-emotional development outcomes.

iii. provide evidence-based recommendations for strengthening early childhood education policies and practices in Lagos State to support vulnerable populations.

Research Questions

The study was guided by the following research questions:

I. What specific challenges do vulnerable children face in accessing quality early learning environments?
ii. In what ways does vulnerability influence preschool children's language, cognitive, and socio-emotional development outcomes?
iii. What strategies can be implemented to ensure equitable access to quality early childhood education for vulnerable children in Lagos State?

Methodology

The study adopted a cross-sectional survey design approach andthe population comprises preschool children (ages 3–5) enrolled in both public and private nursery schools across Lagos Stateincluding their parents and teachers. Multi-stage sampling procedure was used for the study. First, three local government areas in Lagos State (LGAs) was purposively selected to represent varying socio-economic conditions: high-income, middle-income, and low-income urban settlements. From each LGA, four schools (two public and two private) was randomly chosen. Within these schools, 15 children, along with their parents and teachers, were randomly sampled, resulting in a total sample size of 180 participants. Three instruments were used for the study,a structured questionnaires administered to parents to capture socio-economic indicators (household income, education, housing, food security) and children's access to educational resources, Language and Cognitive Development Checklist (LCDC)**:** Adapted from standardized early childhood assessment tools to measure children's language, cognitive, and Teacher Rating Scale(TRS)**:** Teachers evaluate children's classroom participation, behavior, and developmental progress. Reliability was established using Cronbach's alpha, with coefficients of 0.79 which is considered acceptable. Data collected were analyzed using descriptive statistics (mean, standard deviation, frequency).

Results

Research Question 1

What specific challenges do vulnerable children face in accessing quality early learning environments?

Table 1 presents parents' responses on challenges affecting vulnerable children's access to quality early childhood education.

Table 1: Challenges Affecting Access to Quality Early Learning (n = 180)

Challenge	Frequency (f)	Percentage (%)
Inadequate learning materials	132	73.3
Low household income	145	80.6
Poor school infrastructure	118	65.6
High cost of private preschool fees	126	70.0
Inadequate nutrition/food insecurity	139	77.2
Limited parental involvement	104	57.8

The results indicate that low household income (80.6%), food insecurity (77.2%), and inadequate learning materials (73.3%) were the most frequently reported challenges. This suggests that socio-economic vulnerability significantly limits children's access to quality early learning environments in Lagos State.

Research Question 2
In what ways does vulnerability influence preschool children's language, cognitive, and socio-emotional development outcomes?
Descriptive statistics from the Language and Cognitive Development Checklist (LCDC) and Teacher Rating Scale (TRS) are presented in Table 2.

Table 2: Mean and Standard Deviation of Developmental Outcomes (n = 180)

Developmental Domain	Mean (M)	Standard Deviation (SD)
Language development	2.84	0.63
Cognitive development	2.91	0.58
Socio-emotional development	2.76	0.66

(Scale: 1 = Low, 2 = Moderate, 3 = High)
The results show that children from vulnerable backgrounds demonstrated moderate levels of language (M = 2.84), cognitive (M = 2.91), and socio-emotional development (M = 2.76). However, socio-emotional development recorded the lowest mean score, indicating that vulnerability may have a more pronounced effect on children's emotional regulation, peer interaction, and classroom behavior.

Research Question 3
What strategies can be implemented to ensure equitable access to quality early childhood education for vulnerable children in Lagos State?
Teachers' and parents' responses on proposed intervention strategies are summarized in Table 3.

Table 3: Strategies for Improving Equitable Access to Early Childhood Education (n = 180)

Strategy	Frequency (f)	Percentage (%)
Government subsidy for preschool education	152	84.4
Provision of free learning materials	146	81.1
School feeding programs	158	87.8
Teacher training on inclusive practices	141	78.3
Community-based parental education programs	133	73.9

The findings reveal that school feeding programs (87.8%), government subsidies (84.4%), and free provision of learning materials (81.1%) were the most strongly endorsed strategies. This indicates a consensus among respondents that policy-driven and welfare-based interventions are critical for improving equitable access to quality early childhood education for vulnerable children.

Discussion of Findings

The findings revealed that low household income, food insecurity, inadequate learning materials, and poor school infrastructure constitute major barriers to vulnerable children's access to quality early learning environments. This aligns with earlier studies which emphasize that poverty remains a dominant predictor of unequal access to early childhood education in low- and middle-income contexts (UNESCO, 2019; UNICEF, 2021). Children from economically disadvantaged households are less likely to attend well-resourced preschools and more likely to experience interruptions in schooling due to financial constraints.

The prominence of food insecurity as a key challenge corroborates evidence from developmental research indicating that inadequate nutrition during early childhood adversely affects brain development, attention span, and school readiness (Olanrewaju & Adeyemi, 2021). In the Nigerian context, studies have shown that children from food-insecure households often attend school irregularly and demonstrate reduced classroom engagement

(Akanbi &Alayande, 2020). The findings further support Bronfenbrenner's Ecological Systems Theory, which posits that children's development is shaped by interactions within their immediate socio-economic environment.

The results indicated that vulnerable preschool children exhibited moderate levels of language, cognitive, and socio-emotional development, with socio-emotional development recording the lowest mean score. This suggests that while some developmental competencies are attained, vulnerability may limit optimal developmental progression. Similar findings have been reported by UNICEF, (2023), who observed that children exposed to socio-economic deprivation often display delays in emotional regulation and social interaction due to stress, instability, and limited adult support.

The relatively moderate language and cognitive development outcomes may be attributed to children's exposure to formal preschool settings, even in resource-constrained environments. However, existing literature cautions that the quality of stimulation, teacher-child interaction, and learning materials significantly mediates developmental outcomes (Olanrewaju & Adeyemi (2021) and Oni and Ajayi (2020). The lower socio-emotional scores align with Vygotsky's sociocultural theory, which emphasizes the role of social interaction in learning; children experiencing vulnerability may have fewer opportunities for positive peer and adult interactions, thereby affecting emotional competence and behavior regulation.

The study identified school feeding programs, government subsidies, free provision of learning materials, and teacher training in inclusive practices as key strategies for improving equitable access to early childhood education. These findings are consistent with global evidence demonstrating that integrated social protection and education policies enhance school participation and learning outcomes among vulnerable children (World Bank, 2020).

School feeding programs, which received the highest endorsement, have been shown to improve attendance, concentration, and cognitive performance, particularly among children from low-income households (Adewumi & Ogunlade 2021). Government subsidies and material support reduce the financial burden on families and promote enrollment in quality early childhood programs (Olanrewaju & Adeyemi, 2021). Additionally, teacher training on inclusive and responsive pedagogies has been identified as critical for addressing diverse developmental needs and fostering supportive learning environments (UNICEF, 2023).

Conclusion

Children from low-income and low-education households are less likely to access or sustain attendance in early learning programs. The study shows that vulnerable children faces substantial barriers such as overcrowded classrooms, inadequate instructional materials, and insufficient teacher support, which compromise the quality of their learning experiences.Socio-economic disadvantage negatively affects developmental outcomeslanguage, cognitive, and socio-emotionalplacing vulnerable children at a developmental disadvantage before entering primary school.Existing interventions are insufficiently effective among the most vulnerable groups, indicating the need for better targeted and contextually responsive early childhood policies.Holistic, equity-driven approachescombining government subsidies, improved teacher training, and parental empowerment are necessary to promote inclusive early childhood education in Lagos State.In essence, socio-economic vulnerability continues to perpetuate educational inequality in early childhood development, necessitating strategic policy and programmatic interventions. Lack of cohesive policies also affected ECE policies and services which hinders progress, also insufficient data all limited date also affect planning and monitoing why underfunding on pre-primary education is just 0.4% of the GDP

Recommendations

Based on the findings and conclusions of this study, the following recommendations weremade:

1. Awareness campaigns should be implemented by the government to educate parents on the importance of early learning and how home-based interactionsshouid be carried outand support child development.
2. Community-based early childhood centers should be expanded and managed through public-private partnerships to reach into underserved neighborhoods.

3. Continuous capacity-building programs should be organized for preschool teachers focusing on inclusive pedagogy, differentiated instruction, and early intervention strategies for vulnerable learners.
4. The Lagos State Ministry of Education should introduce targeted subsidies or fee waivers for children from low-income households to enhance preschool enrollment and reduce dropout rates.

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EVALUATING THE IMPACT OF MULTI-SECTOR COLLABORATIONS ON PRIMARY SCHOOL TEACHERS' STEM PEDAGOGICAL COMPETENCE IN LAGOS STATE, NIGERIA

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Abstract

This study examined the impact of multi-sector collaboration on the STEM pedagogical competence of primary school teachers in Lagos State. The study determined the extent to which multi-sector collaborations are implemented to strengthen teachers' STEM competence, examined the relationship between multi-sector collaboration initiatives and teachers' STEM pedagogical competence. A descriptive research design was adopted. The population comprised primary school teachers in Lagos State, while a sample of 200 teachers from public and private primary schools in Eti-Osa Local Government Education Authority was selected using stratified and convenience sampling techniques. Data were collected using a validated questionnaire titled Multi-Sector Collaboration in Primary School Teachers' STEM Pedagogical Competence (IMCTSPC) and analysed using descriptive statistics. Findings revealed that multi-sector collaborations assist to a high extent in strengthening teachers' STEM competence, with positive relationships observed between collaborative initiatives and teachers' pedagogical skills. However, challenges such as poor coordination, inadequate funding, unclear policy frameworks, and insufficient communication were identified as major barriers. The study concludes that while multi-sector collaboration significantly enhances teachers' STEM pedagogical competence, addressing structural and administrative constraints is essential for maximizing its effectiveness. The study recommends strengthened coordination mechanisms, sustained funding, and coherent policies to support effective multi-sector partnerships in primary education.

Keywords: Multi-sector collaboration; STEM pedagogical competence; Teacher professional development

Introduction

Education is crucial to any pupil, especially at the foundational level because it equips the pupil with the values, knowledge, and abilities needed to a better life to navigate or explore the world. It enables the pupils at different levels of learning to think critically, make wise choices, and make significant contributions to society. Additionally, education promotes intercultural awareness and respect, which eventually promotes harmony and collaboration. Fundamentally, education serves as the cornerstone for social progress, individual development, and the advancement of humanity at large. It might therefore be true to conclude that for education to be sound the foundational level is of great importance. This is so because primary school establishes the groundwork for a child's future learning and overall development. It gives pupils the fundamental abilities they need to comprehend more difficult subjects later in life, such as reading, writing, and basic math. Beyond academics, primary education prepares pupils for active participation in society by fostering the development of social skills, self-assurance, and discipline. Providing every pupil with the opportunity to create a brighter future, regardless of background, it also advances equality. To put it briefly, the first and most important stage in forming a child's intellect, character, and chances for success in life is the primary school (Sevrukoya, 2018). All of these can only be achieved through the assistance of a primary school teacher who is seasoned, professional and of impeccable character. A teacher who overseesorganising and carrying out lessons in a variety of key disciplines, fostering a supportive and engaging learning environment, evaluating and tracking pupils' progress, and upholding classroom safety and discipline. According to Eistein (2018), other important responsibilities of the teacher include interacting with parents, working with other teachers, taking part in professional development, and supporting larger school events and activities. For a primary school teacher to be successful, he or she needs to have a variety of interpersonal, organisational, and teaching abilities which include patience, empathy, communication, Classroom management, creativity and topic knowledge. They can communicate with children and parents, handle the intricacies of a classroom and curriculum, and foster a pleasant learning environment all these are professional abilities which are required by the teachers, and which can majorly be achieved through training, workshops, seminars and more. Indeed, there is a need for multi-collaborations because the schools alone might not be able to handle the responsibilities.

Thus to make learning rich, robust and relevant at the primary school level there is a need for collaborations by different agents, organizations and so on , such is themulti-sector collaboration which is a strategic partnership where entities from different sectors, such as government, non-profits, private businesses, and community groups work together to address a common goal or complex challenges. In primary schools such as digital learning implementation, teacher shortage, quality, professional development, safety and development among others, that cannot be solved by one organisation alone.

In primary education, multi-sector collaboration involves several key agents (stakeholders) who each play a role in supporting children's learning and wellbeing as well as the teacher (Broden, 2022). The main agents involved in collaboration in primary schools are the following: Government agencies which are responsible for the oversight and administration of specific functions, some of such is the State Universal Basic Education Board (SUBEB) in Nigeria which is to manage and provide quality basic education in primary ensuring equitable access for all children.

Also, the Local Government Education Authority (LGEA) is responsible for employment, appointment and development within their area of jurisdiction.School Administration which involves the management of all school operations, from creating a safe learning environment to managing the school budget, parents and families who provide home support, supervision, and encouragement.Parent-Teacher Associations (PTA) whose main aim is to advance pupil education, promote cooperative partnerships between the school and parents, engage in activities to provide facilities and equipment that support the school.

Multi-sector collaboration in primary education may be necessary because there is a need for the holistic development of pupils with the help of the teacher; this is so because education alone cannot solve all the challenges pupils face (Moore, 2022). Collaborations could ensure pupils are healthy and ready to learn. Also, many public schools lack adequate facilities for teachers' development and professionalism, however through collaboration, government, NGOs, private businesses, and community group resources can be pooled together resources (books, scholarships, meals, infrastructure) to develop the teacher which in turn improve learning outcomes. Furthermore, governments alone may overlook key issues. When different sectors speak with one voice, stronger policies (like free school meals, teacher protection laws, Professionalism) are developed. Improved academic performance is a crucial outcome of multi-sector collaboration because it results from a synergy of diverse perspectives, resources, and expertise from various stakeholders, such as students, educators, industry, and the community. This collaboration fosters innovative learning environments, provides real-world relevance to education, enhances student motivation and engagement, and equips pupils with vital 21st-century skills, all of which lead to improved academic results and overall institutional effectiveness through the teacher. With health, financial, emotional, and educational needs being addressed through joint efforts, pupils are more likely to stay in school, attend regularly, and perform better academically (Broden, 2022).

Multi-sector collaboration has a direct impact on primary school teachers and their instructional delivery in different ways. It provides capacity-building workshops, seminars, and refresher courses for teachers. This improves teachers' knowledge of modern pedagogy, child-centered learning, and classroom management, which in turn help in pupils' academic performance. The teachers' access to teaching resources and partnerships with the private sector and NGOs supply instructional materials, digital tools, libraries, and laboratories, which make lessons more engaging and effective. It also leads to improved motivation and morale which could lead to effective performance. When schools receive external support (for example, infrastructure improvement, welfare packages, recognition programs), teachers feel valued, supported, and motivated to deliver better lessons. According to Otundo (2024) with support from multi-sector stakeholders (government infrastructure projects, community involvement, NGOs), teachers work in safer, cleaner, and more supportive learning environments, which enhances their instructional delivery. As part of the collaboration, a good example is the Spacecom and its local partner Data Connect installed information and communications technology (ICT) infrastructure at the three school sites to facilitate broadband satellite connectivity in Lagos State. This allows for both online and offline learning, meaning teachers and pupils can continue classes even without internet. At some primary schools in Kebbi, the smallest and most rural of the three schools, solar panels were installed to provide more reliable electricity service (Orewole, 2013).

Multi-sector collaboration enhances curriculum implementation by fostering innovation through diverse expertise, ensuring curricula are relevant and responsive to real-world needs through community input, and improving pupils' outcomes by creating integrated learning environments. Furthermore, collaboration fosters the introduction of innovative programs (ICT integration, literacy programs, inclusive education support) that improve how teachers deliver lessons and how professional they are. Also, when schools and community groups, businesses, and parents form partnerships, they create better learning environments that positively affect pupils' academic performance (Chandrateya, 2024), which is one of the major reasons why they are in primary school. For instance, pupils and parents involved in community partnerships are more engaged with their children's education, resulting in higher academic performance. Teachers benefit from stronger ties with parents and community leaders, leading to better discipline, attendance, and cooperation among pupils, making instruction smoother.

In relation to STEM (Science, Technology, Engineering and Mathematics)**,** Multi-sector collaboration significantly enhances teachers' competence in STEM instruction by providing them with access to training, resources, and professional support, Traphagen, K., and Traill, S. (2014).Through partnerships with government agencies, NGOs, and private sector organizations, teachers receive capacity-building opportunities in modern STEM pedagogy, such as inquiry-based learning, problem-solving, and technology integration. In addition, the provision of instructional materials and digital tools, including computers, laboratory equipment, and interactive software, enables teachers to move from abstract, theory-driven lessons to more practical and activity-based learning experiences. Collaboration also fosters curriculum enrichment by introducing initiatives such as science fairs, mathematics competitions, and robotics clubs, which broaden both teachers' and pupils' exposure to real-world STEM applications. Moreover, by sharing responsibility with health and social welfare agencies for addressing pupils' non-academic challenges, teachers are able to concentrate more fully on effective instruction. These combined efforts not only improve teachers' confidence and competence in delivering STEM content but also promote innovative teaching practices that enhance pupils' engagement and achievement (UNICEF, 2020; UNESCO, 2021).

Statement of the Problem

Despite the international focus on STEM education as a catalyst for innovation and national development, Lagos State still faces challenges with low STEM learning outcomes, especially at the primary school level. According to studies, many primary school teachers lack the pedagogical skill, confidence, and content knowledge necessary to teach STEM subjects successfully. In STEM classrooms, this deficiency frequently manifests as rote teaching strategies, few practical exercises, and low pupils' involvement. Although interventions have been implemented by the government, business organisations, and non-governmental bodies to enhance teachers' proficiency in STEM instruction in Lagos State, where education is a top policy priority and no child is left behind. However, these projects frequently function in divisions, leading to fragmented training, limited sustainability, and duplication of efforts. It is believed that one comprehensive strategy to increase teachers' pedagogical competency in STEM is multi-sector collaboration, which brings together government organisations, teacher training programs, non-governmental organisations, and business partners.The drawback, though, is that there is little actual data regarding how successful these kinds of partnerships are. There is not enough information on the quantifiable effects of multi-sector initiatives on teachers' pedagogical ability, despite unempirical accounts that partnerships increase teacher capacity. Therefore, it is still unknown if these partnerships greatly improve teachers' capacity to implement creative, inquiry-based, and pupil-centred STEM curricula in Lagos State primary schools. This disparity calls for a methodical assessment of the ways in which multi-sector collaboration affects teachers' STEM pedagogical proficiency in order to lead future partnerships, inform evidence-based policy, and eventually enhance STEM learning outcomes for pupils in primary schools.

Purpose of the Study

The main purpose of this study is to evaluate the impact of multi-sector collaboration on the STEM pedagogical competence of primary school teachers in Lagos State, Nigeria. Specifically, the study seeks to:

i. ascertain the extent to which multi-sector collaborations are being implemented to strengthen teachers' STEM teaching capacity in public primary schools in Lagos State.

ii. determine the relationship between multi-sector collaboration initiatives and teachers' STEM pedagogical competence.

iii. determine the challenges and barriers limiting effective multi-sector collaboration in improving STEM pedagogical competence of primary school teachers.

Research Questions

I. To what extent do multi-sector collaborations implemented assist in strengthening primary school teachers' STEM competence in Lagos State?

ii. What is the relationship between multi-sector collaboration initiatives and teachers' STEM pedagogical competence?

iii. What challenges hinder effective multi-sector collaboration for strengthening teachers' STEM pedagogical competence?

Methodology

The study adopted a descriptive survey research design. The study population consisted of all primary school teachers in Lagos State. A questionnaire was used for data Table 4 showed that multi-sector collaboration rating of items 1-5 was 3.10, 3.03, 2.95, 2.83, 2.88, 2.97 respectively with corresponding standard deviation of 0.82, 0.78, 0.85, 0.90, 0.87, 0.84. Based on the cut-off point of 2.50, the teachers rated all the items as accepted indicating that, multi-sector collaboration strengthens primary school teachers' STEM competence. The cluster mean of 2.96 and standard deviation of 0.84 were rated above the cut-off point of 2.50. This implies that multi-sector collaboration strengthens primary school teachers' STEM competence. collection, titled Multi-Sector Collaboration in Primary School Teachers' STEM Pedagogical Competence (IMCTSPC). The sampling population was 200 primary school teachers in Eti-Osa Local Government Education Authority in Lagos State which was purposively selected. Using a stratified random technique, the schools were selected and divided into stratum 1, public schools and stratum 2, private schools. Using the convenience sampling technique; 140 teachers were chosen in the public primary schools and 60 participants from the private primary schools. Two experts validated the questionnaire. Data collected were analysed using descriptive statistics.

Result

Research Question 1: To what extent do multi-sector collaborations implemented assist in strengthening primary school teachers' STEM competence in Lagos State?

Table 1: Mean rating and standard deviation on the extent of Multi-Sector Collaborations in Strengthening Primary School Teachers' STEM Competence

S/N	Items	Mean (Ũ	Std. Deviation
1	Collaborative programmes with government agencies have improve my understanding of STEM concepts.	3.31	0.60
2	Partnership with private organizations have enhanced my use of practical and inquiry-based STEM teaching methods.	3.27	0.64
3	Training workshops organized though multi-sector collaboration have strengthened my confidence in teaching STEM subjects.	335	0.58
4	Support from NGOs and community-based organization have increased access to STEM instructional resources.	3.22	0.66
5	Multi-sector collaboration initiatives have positively influenced my STEM teaching competence.	3.38	0.55
	Grand Mean	**3.31**	

The table 1 above indicates that implemented multi-sector collaborations assist to a high extent in strengthening primary school teachers' STEM competence in Lagos State. The mean scores fo the five items ranged from 3.22 to 3.38, all above the benchmark mean of 2.50, reflecting strong agreement among respondents.

The highest mean score (mean= 3.38) was recorded for the overall influence of multi-sector collaboration initiatives on teachers' STEM competence, suggesting that respondents perceive these collaborations as broadly effective. Training workshops and professional development activities (mean= 3.35) were also identified as particularly impactful. The relatively low standard deviation values (0.55–0.66) indicate consistency in teachers' responses.

The findings suggest that multi-sector collaborations implemented in Lagos State have made a meaningful contribution to enhancing primary school teachers' STEM competence, particularly through professional development, resource provision, and improved instructional practices.

Research Question 2: What is the relationship between multi-sector collaboration initiatives and teachers' STEM pedagogical competence?

Table 2: Mean rating and standard deviation on the multi-sector collaboration initiatives and teachers' STEM pedagogical competence

S/N	Items	Mean (Ũ	Std. Deviation
1	Collaboration with industries enhances my ability to teach STEM concepts effectively.	3.28	0.62
2	Partnerships with NGOs and private organizations improve my STEM instructional skills.	3.15	0.67
3	Government and institutional support through collaboration strengthens my STEM teaching competence.	3.34	0.58
4	Joint training programmes with external stakeholders improve my use of innovative STEM teaching strategies.	3.21	0.65
5	Multi -sector collaboration provides access to resources that enhance STEM pedagogy.	3.42	0.55
	Grand Mean	**3.28**	

Table 2 revealed that teachers generally perceive multi-sector collaboration initiatives as positively related to their STEM pedagogical competence. The mean scores for all five items ranged from 3.15 to 3.42, indicating a high level of agreement among respondents. The grand mean of 3.28 suggests that teachers acknowledge the importance of collaborations involving government agencies, industries, non-governmental organizations, and other stakeholders in enhancing their STEM teaching skills.

The relatively low standard deviation values (ranging from 0.55 to 0.67) indicate consistency in respondents' perceptions, suggesting shared views among teachers regarding the benefits of multi-sector collaboration. The findings imply that effective collaboration across multiple sectors plays a significant role in strengthening teachers' pedagogical competence in STEM education.

Research Question 3: What challenges hinder effective multi-sector collaboration for strengthening teachers' STEM pedagogical competence?

Table 3: Mean rating and standard deviation on the challenges hinder effective multi-sector collaboration for strengthening teachers' STEM pedagogical competence

S/N	Items	Mean (Ũ	Std. Deviation
1	Inadequate funding limits effective collaboration between schools and external stakeholders.	3.36	0.61
2	Lack of clear policy frameworks hinders successful multi -sector collaboration for STEM education.	3.29	0.64
3	Poor coordination among government, private sector, and educational institutions affects collaboration outcomes.	3.42	0.58
4	Limited time and workload pressures prevent teachers from engaging in collaborative STEM initiatives.	3.18	0.69
5	Insufficient communication among collaborating partners weakens efforts to improve STEM pedagogy.	3.34	0.62
	Grand Mean	**3.32**	

Table 3 indicate that teachers perceive several significant challenges hindering effective multi-sector collaboration aimed at strengthening STEM pedagogical competence. Mean scores across the five items ranged from 3.18 to 3.42, all exceeding the benchmark mean of 2.50, suggesting general agreement that these factors constitute major barriers.

The highest mean score (3.42) was recorded for poor coordination among collaborating partners, indicating that ineffective alignment of roles and responsibilities is perceived as the most critical challenge. Inadequate funding (mean= 3.36) and insufficient communication among stakeholders (mean= 3.34) were also identified as prominent obstacles. The relatively low standard deviation values (0.58–0.69) suggest minimal variability in respondents' perceptions.

The findings suggest that structural, administrative, and logistical challenges significantly constrain the effectiveness of multi-sector collaboration initiatives designed to enhance teachers' STEM pedagogical competence.

Discussion of Findings

The findings from Research Question 1 indicate that multi-sector collaborations implemented in Lagos State assist to a high extent in strengthening primary school teachers' STEM competence. The grand mean of 3.31, with all item means exceeding the benchmark mean of 2.50, demonstrates strong agreement among teachers that these collaborations are effective. In particular, the highest-rated item relates to the overall positive influence of multi-sector collaboration initiatives on STEM competence, suggesting that teachers perceive tangible benefits from such partnerships.The prominence of training workshops and professional development activities underscores the critical role of capacity-building initiatives facilitated through collaboration among government agencies, private organizations, NGOs, and community-based groups. These findings align with the view of Epstein, (2018)that sustained professional development is essential for improving teachers' subject mastery, instructional confidence, and ability to deliver STEM content effectively. The consistency of responses, as reflected in the relatively low standard deviation values, further suggests that the perceived benefits of collaboration are widely shared among primary school teachers in Lagos State. This supports existing literature that emphasizes collaborative approaches as a viable strategy for addressing skill gaps and resource limitations in STEM education.

The results for Research Question 2 reveal a positive relationship between multi-sector collaboration initiatives and teachers' STEM pedagogical competence. The grand mean of 3.28 indicates that teachers generally acknowledge the importance of collaboration with industries, government institutions, NGOs, and other stakeholders in enhancing their pedagogical skills. Notably, access to resources through collaboration recorded the highest mean score, highlighting the significance of material and instructional support in improving STEM

pedagogy.These findings supportOtundo. (2024) who suggest that multi-sector collaborations do not only enhance teachers' content knowledge but also promote the adoption of innovative, inquiry-based, and learner-centred teaching strategies. Joint training programmes and institutional support appear to play a pivotal role in exposing teachers to contemporary pedagogical practices that are essential for effective STEM instruction. The relatively low variability in responses indicates a shared perception among teachers that collaboration across sectors is a key driver of pedagogical improvement. This corroborates prior studies which argue that partnerships between education systems and external stakeholders are instrumental in bridging the gap between theory and practice in STEM teaching.

Despite the positive outcomes associated with multi-sector collaboration, the findings from Research Question 3 reveal the existence of significant challenges that hinder its effectiveness. The grand mean of 3.32 indicates strong agreement among respondents that several structural and administrative barriers constrain collaborative efforts. Poor coordination among collaborating partners emerged as the most critical challenge, suggesting that unclear roles, weak alignment of objectives, and fragmented implementation processes undermine the potential benefits of collaboration.

Inadequate funding and insufficient communication were also identified as major obstacles, reflecting systemic issues that affect the sustainability and impact of collaborative initiatives (Sevrukova, 2018). Additionally, workload pressures and limited time were perceived as constraints that reduce teachers' active participation in collaborative programmes. These challenges highlight the need for coherent policy frameworks, adequate funding mechanisms, and efficient coordination structures to maximize the effectiveness of multi-sector collaborations. The consistency in respondents' perceptions further indicates that these challenges are pervasive and require deliberate policy and administrative interventions.

Conclusion

In Lagos State, Nigeria, this study assessed how multi-sector partnerships affected the growth of STEM (science, technology, engineering, and mathematics) pedagogical competency among primary school teachers. The results showed that collaborations between governmental bodies, commercial enterprises, non-governmental organisations (NGOs), and academic institutions are crucial for improving teachers' access to resources, exposure to innovative methods of instruction, and instructional skills.Collaborative initiatives including mentorship programs, teacher training seminars, and the distribution of digital learning resources have helped instructors become more competent and confident in their ability to teach STEM subjects. However, depending on the degree of institutional support, the longevity of partnerships, and the teachers' own readiness to incorporate new pedagogical approaches, the impact differs from school to school.In general, the investigation finds that STEM pedagogical competency is positive but unevenly impacted by multi-sector cooperation. To guarantee that these collaborations result in long-term enhancements in the caliber of instruction and learning outcomes for students in STEM fields throughout Lagos State, persistent cooperation, policy alignment, and regular monitoring are necessary.

Recommendations

Based on the conclusion, the following recommendations were madeto enhance the effectiveness of multi-sector collaboration in strengthening primary school teachers' STEM pedagogical competence in Lagos State;

1. Government education authorities should establish clear coordination frameworks that define roles, responsibilities, and accountability mechanisms for all collaborating stakeholders.
2. Sustainable funding mechanisms should be developed to support multi-sector collaboration initiatives.
3. Policymakers should formulate and implement comprehensive policies that explicitly promote multi-sector collaboration in primary education.
4. Regular capacity-building programmes such as workshops, seminars, mentoring, and refresher courses should be institutionalized through collaborative efforts.
5. School administrators should adopt strategies to manage teachers' workload by providing time allowances or incentives for participation in collaborative programmes.

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AN ASSESSMENT OF LITERACY SKILLS ACQUISITION AMONG PRESCHOOLERS IN SELECTED PUBLIC PRIMARY SCHOOLS IN LAGOS STATE

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Abstract

The study assessed Literacy Skills Acquisition among Preschoolers in Selected Public Primary Schools in Lagos State. Two objectives and hypotheses were formulated for this study.This study employed descriptive survey research design as information was sourced from many pupils in the state. Purposive sampling was used to identify Basic 5 and 6 pupils in Public and Private primary schools while simple random sampling technique was employed in the selection of 25 pupils from Basic 5 and 6 to form a sample of 100 pupils in Alimosho LGA in Lagos State. Literacy Skills Acquisition Questionnaire (LSAQ) was used in data collection as among preschoolers in selected public and private primary schools in Lagos State. Due to the tender nature of the pupils in item internalisation, their teachers who nuture and monitor them grow and develop assisted in filling the required questionnaires. Face and content validity was established and Cronbach-alpha coefficient value of .792 was obtained. Data was analysed via Analysis of Variance (ANOVA) and Post-Hoc statistics to show where the direction of the significance lies. Hypotheses were tested at .05 level of significance. The study revealed that acquisition of literacy skills among preschoolers is dependent on developmental, socio-environmental and latent ability of the child. It concluded that literacy skills acquisition among preschoolers in public primary schools remains suboptimal due to inadequate resources, limited teacher competence and environmental factors. The study recommended that government should strengthen teacher training programs to enhance early literacy pedagogy and classroom management in public preschools.

Keywords: Post-Hoc Statistics, Literacy Skills Acquisition, Preschoolers, Caregivers, Analysis of Variance

Introduction

The concept of literacy skills acquisition in the Nigerian context refers to the developmental process through which learners build the foundational abilities for reading, writing and effective communication. Beginning with emergent literacy in the home and early years and progressing through phonological awareness, letter sound knowledge (decoding), fluency, vocabulary and text comprehension. Nigerian national policy and programme documents frame literacy as both a learning outcome and a policy priority, directing that early grade instruction use appropriate language and structured curricula to develop basic literacy for all children (Okebukola, 2019).

Early childhood literacy is widely recognised as a foundational predictor of later academic achievement, social development and lifelong learning. Preschool experiences that promote emergent literacy like print awareness, alphabet knowledge, phonological awareness and oral languages strongly strongly influence children's readiness for formal schooling and subsequent reading success. In Nigeria, there has been repeated highlight of weaknesses as identified in studies by Newman (2015) and Oyetunde (2016) in provision of early literacy in

many public schools, calling for programmatic and research attention to how preschool experiences translate into measurable literacy outcomes in primary grades.

Among other studies, that of Mangvwat and Meshak (2022) highlights the instructional importance of systematic phonics and other explicit reading approaches for improving early reading outcomes in primary classrooms, while noting contextual constraints as language of instruction choices, limited instructional resources and uneven teacher preparation that shape how literacy skills are acquired in practice. The Nigerian Research and Policy treat literacy acquisition as an interaction of cognitive skills (phonemic and orthographic mapping), instructional practices (phonics, guided reading) and socio-cultural factors (home literacy, language policy, school resources). This implies that effective literacy development in Nigeria requires aligned curriculum, teacher training, and community support.

In one of the studies by Kim, (2015) that compares groups (children in different instructional programs, different teacher training conditions or different home language backgrounds) often uses analysis of variance (ANOVA) to test overall group differences. When ANOVA returns a statistically significant F-statistic, it only indicates that some group means difference. It does not identify which pairs of groups differ. Post-hoc statistical procedures using Tukey HSD, Bonferroni, Holm, Scheffé and Šidák are essential tools for disaggregating those differences while appropriately controlling Type I error across multiple comparisons.

A clear understanding and careful reporting of post-hoc choices are necessary for drawing valid conclusions about which instructional approaches or contextual factors are associated with stronger emergent literacy outcomes. Post Hoc statistics ensures the appropriate and actual group responsible for the identified differences captured. Although the mean scores give actual difference but the Post Hoc analysis identifies where the main difference lies or main contributor (Juarros-Basterretxea, 2024). A study by Musa (2025) carefully models literacy outcomes, applies appropriate omnibus tests and follows with transparent literacy skills acquisition, further stated that a well-chosen post-hoc analysis would advance both local evidence and methodological standards for Nigerian early childhood educational studies especially in the advancement of literacy skills acquisition among preschoolers.

Given the policy and practice stakes for early literacy, studies that only report omnibus tests without appropriate pairwise comparisons risk leaving educators and policymakers with incomplete or misleading guidance. In the Nigerian context where interventions vary based on the experience of the researcher, language of instruction policy and resource availability, rigorous post-hoc analysis allows researchers to specify which preschool experiences or program variants produce the largest gains in key literacy components. This precision matters when allocating scarce resources (teacher training, reading materials, play-based literacy resources) to the interventions that demonstrate work for particular subgroups of children (Adeyemi & Ajibade, 2021).

Again, another motivation for emphasisingpost-Hoc procedures in preschool literacy acquisition studies arises from general sampling realities in among preschoolers. Many studies compare more than two groups (different pedagogical approaches, urban vs. rural schools, or multiple age cohorts, public vs Private schools, Socio-Economic Status, High, Moderate and Low intelligence among others). Multiple pairwise tests without correction inflate the family-wise error rate thereby increase the chance of false positive findings. Overtly, conservative corrections can hide meaningful differences (reduce power) while selecting and justifying an appropriate post-hoc method that can lead to a substantive methodological decision that affects interpretation of literacy acquisition results (LibreTexts, 2025).

Statement of the Problem

Literacy skills acquisition among preschoolers in selected public primary schools has become a pressing concern due to persistent disparities in children's readiness for formal education and later academic success. Despite the inclusion of early literacy development in Nigeria's National Policy on Education (FRN, 2014), many preschoolers in public schools still struggle with foundational reading, phonemic awareness, vocabulary and comprehension skills compared to benchmarks expected at their developmental stage. Possible factors like inadequate instructional materials, overcrowded classrooms, poorly trained caregivers, inconsistent curriculum implementation and limited parental involvement may have been identified as contributory factors to weak literacy foundations among preschoolers. However socio-economic constraints in many public school

communities may also have exacerbated the problem by restricting access to quality preschool experiences and literacy enriched environment. As a result, children enter primary education with uneven literacy competencies thereby creating learning gaps that often persist throughout their schooling years. This situation underscores the urgent need for targeted interventions, teacher capacity development and evidence based pedagogical practices to improve literacy outcomes in public preschool settings, hence this among others endeared the researchers to investigate on how the use of Post-Hoc statistics can be help in the determination of actual contributor to Literacy Skills Acquisition among Preschoolers as against the excessive reliance on omnibus tests (ANOVA) in related studies.

Purpose of the Study

This study investigated the use of Post-hoc statistics in the determination of literacy skills acquisition among preschoolers in selected public primary schools in Lagos State while the specific objectives include are to:

i. assess the difference in literacy skills acquisition among Preschoolers by gender; and
ii. evaluate the difference in literacy skills acquisition of Preschoolers by public and private caregivers

Hypotheses

Two hypotheses were formulated for this study and tested at .05 level of significance.

$H_0$1: There is no significant difference in literacy skills acquisition among Preschoolers by gender

$H_0$2: There is no significant difference in literacy skills acquisition of Preschoolers by public and private caregivers

Methodology

This study employed descriptive survey research design as information was sourced from many pupils in the state. Multi-stage sampling procedure was used in this study as purposive sampling technique was used to identify Basic 5 and 6 pupils in Public and Private primary schools while simple random sampling technique was employed in the selection of 25 pupils each from Basic 5 and 6 to form a sample of 100 pupils in Alimosho LGA in Lagos State. The study employed the use of Preschoolers Literacy Skills Acquisition Questionnaire (PLSAQ) in data collection. The instrument was divided into two sections where Section A contained Bio-Data of respondents while Section B contained 20 closed ended items on 4-Likert Scale response format. as among preschoolers in selected public and private primary schools in Lagos State. Due to the tender nature of the pupils in item internalisation, class teachers assisted in filling the required questionnaires. Face and content validity was established and Cronbach-alpha coefficient value of .792 was obtained. Data was analyzed via Analysis of Variance (ANOVA) and Post-Hoc statistics to show where the direction of the significance lies. All hypotheses were tested at .05 level of significance.

Results

H_1: There is no significant difference in literacy skills acquisition among Preschoolers by gender

Table 1: ANOVA Analysis showing significant difference in Literacy Skills Acquisition Among Preschoolers by gender

	Sum of Square	Df	Mean Square	F	Sig
Between Groups	415.176	2	207.588	3.990	.004
Within Groups	5098.202	98	52.022		
Total		**100**			

Source: Researchers work (2025)

The data in ANOVA Table 1 reveals that at between groups sum of squares 415.176 with degree of freedom 2 and mean square 207.588, within groups sum of squares 5098.202 with degree of freedom 98 and mean square 52.022; With the calculated F-value of 3.990 and significant at .004 (P<.05). Since the p-value is less than the 0.05 level of significance, the result indicates that there is a statistically significant difference in literacy skills acquisition among preschoolers by gender.

Table 2: Post Hoc Test for Multiple Comparisons of the difference in Literacy Skills Acquisition among preschoolers by gender

(I) Variable	(J) Variable	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Male	Basic 5	-6.58960*	.37468	.012	-1.5867	-.1145
	Basic 6	-3.78502*	.37468	.006	-4.3970	-2.9248
Female	Basic 5	2.81034*	.37468	.000	2.0743	3.5464
	Basic 6	3.44433*	.37468	.000	2.9248	4.3970

Source: Researchers work (2025)

Data in Table 2 shows that the LSD Post Hoc Test was used to determine the direction of differences in the data generated. Male to Baisc 5 is significant at .012, Male to Basic 6 at .006; Female to Basic 5 is significant at .000, Female to Basic 6 is significant at .000 respectively. Hence the difference in the difference is attributed to female preschoolers with sig-value of .000 (p<.05).

H_2: There is no significant difference in literacy skills acquisition of Preschoolers by public and private caregivers

Table 3: ANOVA Analysis showing significant difference in Literacy Skills Acquisition of Preschoolers by public and private caregivers

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	709.405	2	354.703	5.638.	.000
Within Groups	6165.398	98	62.912		
Total		**100**			

Source: Researchers work (2025)

The data in ANOVA Table 3 reveals that between groups sum of squares 709.405 with degree of freedom 2 and mean square 345.703, within groups sum of squares 6165.398 with degree of freedom 98 and mean square 62.912; With the calculated F-value of 5.638 and significant at .000 (P<.05). Since the p-value is less than the 0.05 level of significance, the result indicates that there is a statistically significant difference in literacy skills acquisition among preschoolers by nature of schools.

Table 4: Post Hoc Test for Multiple Comparisons of the difference in Literacy Skills of Pupils in Public and Private Primary Schools

(I) Variable	(J)Variable	Mean Difference	Std. Error	Sig.	95% Confidence Interval	
		(I-J)			Lower Bound	Upper Bound
Public	Basic 5	-.61090*	.56464	.029	-1.5674	-.10953
	Basic 6	-3.46572*	.56464	.041	-4.4406	-2.4356
Private	Basic 5	3.84352*	.56464	.000	2.5647	3.1234
	Basic 6	4.75867*	.56464	.000	2.5643	4.1123

Source: Researchers work (2025)

Data in Table 4 shows that the LSD Post Hoc Test was used to determine the direction of differences in the data generated. Public to Basic 5 is significant at .029, Public to Basic 6 at .041; Private to Basic 5 is significant at .000, Private to Basic 6 is significant at .000 respectively. Hence the difference in the difference is attributed to private school preschoolers with sig-value of .000 ($p<.05$).

Discussion of Findings

The result in hypothesis one reveals that there is a significant difference in literacy skills acquisition among Preschoolers by gender. This is so as gender has been identified as one of the contributors to literacy skills acquisition among preschoolers. The study consistently finds a small but reliable female advantage in early literacy as girls tend to enter school with stronger oral language and pre-reading skills on the average and outperform boys on early reading measures an indication that often widens across the school years. This gender difference appears in large scale reviews and meta-analyses and is partly explained by differences in home literacy environments, patterns of parental linguistic engagement and the ways boys and girls respond to early instruction. However, effect sizes are always modest and interact with socioe-conomic, cultural and programmatic factors so that these gray areas vary by context. The outcome of this study conforms to that of Magnuson (2016) and Etchell (2018) who suggested sex moderates the relationship between family/play factors and emergent literacy, reinforcing that local household and program conditions shape observed differences. Stating that female preschoolers due to natural composition acquire better and faster literacy skills than their male counterparts when growing up.

Result from hypothesis two reveals that there is a significant difference in literacy skills acquisition of Preschoolers by public and private caregivers. Preschoolers' literacy acquisition often differs between those cared for in public versus private settings, but the gap is driven more by program quality, resources and family selection than by sector alone. In Nigeria specifically, evaluations point to considerable within country variation where differences in literacy skills acquisition between public and private preschoolers are often linked to the extent and level of funding, available classroom materials and home literacy environments rather than being an inherent public-private split. The findings of this study corroborates with studies by Azubuike *et. al*., (2024) and Oyinlola (2014) who stated that preschoolers in private schools acquire literacy skills better than their public school counterparts due to prevalent environment they find themselves. In private schools due to close monitoring and periodic evaluation teachers are privy to in-service training, curricular supports, and parental engagement at intervals on the well-being of their children while those of public are deficient in these areas thereby contributing to deficiency in acquisition of literacy skills.

Conclusion

The study concludes that literacy skills acquisition among preschoolers in public primary schools remains suboptimal due to inadequate resources, limited teacher competence and environmental factors. It also suggests

that without deliberate policy action and pedagogical reforms, the nation risks perpetuating early learning inequalities that hinder long-term educational achievement of pupils.

Recommendations

The study identified numerous recommendations, however, the stated ones includes the following:

1. Government across federal, state and local levels can strengthen teacher training programs to enhance early literacy pedagogy and classroom management in public preschools.
2. Parental and community involvement in literacy-related activities can also be promoted through adequate and timely sensitization and literacy awareness programs.
3. Evaluators, curriculum developers and assessors of early childhood education programs can organise regular monitoring and evaluation activities of early childhood literacy curricula in other to ensure that gray areas are modified, ambiguous areas expunged and important areas are better enhanced for further implementation.
4. Adequate funding and provision of age-appropriate reading materials, visual aids and interactive learning tools be prioritized by government and NGOs; Partnerships between government, NGOs and educational researchers can be fostered to design and scale up evidence-based early literacy interventions.

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INFLUENCE OF PARENTAL FACTORS ON EXCLUSIVE BREASTFEEDING IN BADAGRY LOCAL GOVERNMENT AREA OF LAGOS STATE

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Abstract
The study explored the influence of exclusive breastfeeding on child-rearing practices in the Badagry Local Government Area of Lagos State. A descriptive survey research design was employed; all parents in Badagry local Government area Lagos Statewere involved, with 384 respondents randomly sampled. Data were collected using a questionnaire, and both face and content validity were used, to examine the reliability, test re test method was used and yielded a coefficient of 0.71. Research questions were answered using frequency counts, percentages, and mean values. Hypotheses were tested using a t-test at a 0.05 level of significance. The findings revealed that parents' occupation has a low influence on exclusive breastfeeding in the Badagry Local Government Area. Similarly, parents' culture has a low influence on exclusive breastfeeding in the same area. There was no significant difference in the mean rating of respondents regarding the level of exclusive breastfeeding based on parents' occupation in the Badagry Local Government Area of Lagos State ($F(3,380) = 1.321$, $p > 0.05$). Likewise, there was no significant difference in the mean rating of respondents regarding the level of exclusive breastfeeding based on parents' culture in the Badagry Local Government Area of Lagos State ($F(6,380) = 82.661$, $p > 0.05$). It was concluded that there was no significant difference in the mean rating of respondents regarding the level of exclusive breastfeeding based on parents' occupation or culture. Health authorities and community leaders should organize regular awareness campaigns to educate parents about the importance of exclusive breastfeeding, irrespective of their occupational or cultural backgrounds.

Keywords: *exclusive breastfeeding, child rearing practice, parent, early childhood*

Introduction

There are numerous health advantages for both the mother and the child when it comes to exclusively breastfeeding, which is widely acknowledged as the best method for providing nutrition to infants. Exclusive breastfeeding for the first six months of a child's life is crucial for encouraging normal growth and development, reducing childhood diseases, and establishing the mother-child attachment, according to the World Health Organization (WHO) and other health organizations.Global breastfeeding rates remain below the desired levels in spite of these recommendations, and various factors influence whether mothers initiate and maintain exclusive breastfeeding. However, the practice of exclusive breastfeeding is infrequent; despite its many advantages, it is impacted by a range of parental factors, including socioeconomic position, cultural standards, occupational situations, and health difficulties.

Among these factors, parental occupation and culture have emerged as critical influences on exclusive breastfeeding practices. The time she has available for breastfeeding, the support she receives at work, and her general attitude toward breastfeeding can all be affected by a mother's occupation. As cultural norms and societal expectations can either encourage or discourage breastfeeding, a mother's decision to exclusively breastfeed plays a significant role in shaping cultural beliefs and practices regarding breastfeeding. (Ramat, 2024)One important factor that can either make or break exclusive breastfeeding is the parent's occupation. According to Adejuyigbe*et. al*. (2017), working mothers, particularly those in formal employment, may face obstacles such as inadequate maternity leave, a lack of workplace support, and time constraints, all of which can make it more difficult for them to breastfeed exclusively.

According to WHO (2020), the absence of workplace policies that are supportive of breastfeeding frequently forces mothers to start formula or complementary feeding earlier than is recommended. This dynamic

demonstrates how important it is to investigate the impact of workplace demands on breastfeeding practices, especially in the Badagry Local Government Area, where informal employment is common. Attitudes and actions regarding breastfeeding are also significantly influenced by cultural factors. In many African communities, cultural norms and traditional beliefs influence infant feeding practices, sometimes discouraging exclusive breastfeeding (Adepoju & Kolawole, 2019). For instance, contrary to the tenets of exclusive breastfeeding, some cultures advocate feeding newborns water or herbal preparations.

Understanding how cultural influences operate in particular local contexts like Badagry is essential because these practices are frequently rooted in generational traditions and may persist despite educational interventions. In developing regions like Nigeria, where breastfeeding practices vary widely across communities, the interaction between parental occupation and cultural norms in determining exclusive breastfeeding rates is especially pertinent (National Population Commission [NPC], 2018). Cultural beliefs may have a greater impact in rural areas, where traditional lifestyles are more prevalent, while occupational demands may take precedence in urban or semi-urban areas. The Badagry Local Government Area's distinctive socioeconomic and cultural dynamics make it the ideal setting to investigate how these factors influence breastfeeding practices. According to Agho *et. al*., (2019), previous studies have emphasised the significance of implementing targeted interventions to remove obstacles to exclusively breastfeeding, such as workplace policies, community education, and healthcare support.

However, very little research has examined how occupational and cultural factors interact in particular local contexts. By investigating how parental factors affect exclusive breastfeeding patterns in Lagos State's Badagry Local Government Area, this study aims to fill that void and contribute to a greater comprehension of how socio-cultural and economic contexts influence outcomes for maternal and child health. Since exclusively breastfeeding has numerous advantages for both the mother and the child, every mother longs for the joy of doing so with her child. Nevertheless, there are substantial challenges in spite of this enthusiasm that prevent exclusive breastfeeding from being implemented successfully. These difficulties are influenced by a variety of factors, including societal norms, personal circumstances, and inadequate support systems, and can vary from person to person (Ramat, 2023).

Exclusive breastfeeding is the practice of providing a newborn or infant with just breast milk and no other liquids or solid foods. Breast milk, the greatest and most natural food source for babies, provides all the nutrients the baby needs during this time. For the first six months of a baby's life, exclusive breastfeeding is advised by the World Health Organization (WHO) and other health organisations. After this period, complementary foods can be offered while breastfeeding for up to two years or longer if the mother and child so choose. There are numerous advantages to exclusive breastfeeding for both the mother and the child. Breast milk gives the baby vital nutrients, antibodies, and other bioactive elements that boost their immunity, promote healthy growth, and reduce their risk of contracting a number of diseases and infections. It also helps the mother and child form a solid attachment. Breastfeeding exclusively can help the woman lose weight, recuperate from childbirth, and reduce her risk of developing certain diseases like ovarian and breast cancer. Additionally, because breastfeeding doesn't involve any equipment or preparation, it is a convenient way to feed the baby and offers emotional fulfilment.

Breast milk contains all of the essential antibodies that guard against illnesses and infections, as well as nutrients for growth and development, making it the best food and immunological shield for infants. Obesity, diabetes, asthma, and sudden infant death syndrome (SIDS) risk reduction have all been linked to breastfeeding. Breastfeeding can benefit a mother's mental health while also reducing her risk of breast and ovarian cancer and diabetes and fostering a close bond with her child. However, breastfeeding is an essential skill that can be challenging for some mothers and requires training and support. As a result, to guarantee effective breastfeeding outcomes, healthcare professionals must inform and assist new mothers.

With many benefits for both mother and child, breastfeeding is a crucial aspect of childrearing. The Latin word "nutricus" (meaning "to suckle at the breast") is where the term "nutrition" originates. The three components of a balanced diet food security, disease prevention, and caring are all included in the single action of nursing. Breast milk is the gold standard since it's the best way to feed a baby. Two of the eight goals for human development that world leaders agreed upon at the United Nations Millennium Summit in 2000 are critical for 2015: a three-

fourths reduction in maternal mortality and a two-thirds reduction in child mortality.Breastfeeding may be the public health intervention that saves more lives and improves women's and children's health than any other. The act of breastfeeding best exemplifies the mother and child as an unbreakable pair.

According to the World Health Organization (2013), early sucking stimulates the release of a hormone that aids in the involution of the uterus to its normal size following delivery. Breastfeeding also benefits mothers. The benefits of breastfeeding are well-known and well-documented. Breastfeeding is strongly linked to a lower rate of infant mortality and morbidity in developing nations, whereas there is a lot of evidence in developed nations that breastfeeding protects against sudden infant death syndrome (Victora *et. al*., 2016). Even in developed nations, research findings highlight both the advantages of breastfeeding and the drawbacks of formula feeding. The term "parent occupation" refers to the particular work or profession that a parent or career pursues as their main source of income. It includes all of the different roles and responsibilities that people play in their professional careers. A child's financial situation, access to resources, educational possibilities, and general well-being can all be significantly impacted by a parent's line of work. Parents can work in a variety of industries, including technology, healthcare, education, business, and skilled professions like plumbing and carpentry.

The child's development and upbringing may be affected in a variety of ways depending on the occupation. (Sirin, 2005; Lareau, 2011) In addition, a child's career aspirations and choices can be influenced by a parent's occupation because children frequently look up to their parents as role models (Mortimer & Lorence, 2012; Eccles, 2014). According to Lincoln *et. al*., (2019), parents' professional networks and connections can also contribute to the provision of valuable opportunities and mentorship for their children. (Conger & Donnellan, 2007; Conger & Donnellan, 2007; Conger & Donnellan, 2007; McLoyd, 2008). By comprehending the intricate relationships between parent occupation and child development, researchers, policymakers, and practitioners can create ways to support families from a variety of occupational backgrounds and encourage fair opportunities for children's growth and achievement.

In addition, a child's career aspirations and choices can be influenced by a parent's occupation because children frequently look up to their parents as role models (Lorence, 2012; Eccles, 2014 Mortimer &). According to Lincoln *et. al*., (2019), parents' professional networks and connections can also contribute to the provision of valuable opportunities and mentorship for their children. However, it is essential to acknowledge that there are multiple factors that influence exclusive breastfeeding, including parent-child relationships and more general socioeconomic factors (Conger & Donnellan, 2007; McLoyd, 2008). Within a society, individual and collective behaviour is influenced by cultural norms and values. Triandis (2014) defines norms as socially accepted rules and expectations that define appropriate behaviour in particular circumstances. They differ from culture to culture and include greetings, social graces, gender roles, and emotional expressions. A society's cultural values are the ideals and concepts that it values highly and finds important.

People's choices and actions are influenced by their attitudes, priorities, and decision-making processes (Hofstede, 2019). A culture's symbolic practices are recited and handed down through rituals and traditions. They reinforce cultural beliefs and values and give people a sense of continuity, belonging, and identity. According to Hobsbawm and Ranger (1983), rituals can be religious, social, or personal, and they can be used to mark significant life transitions, express gratitude, or strengthen social bonds. Culture shapes social roles and expectations, which define the behaviour and responsibilities of various positions in a society (Ridgeway, 2011).

These responsibilities may be influenced by factors such as age, gender, occupation, or social standing. Cultural expectations about gender roles, for example, can affect individual opportunities, family relationships, and the distribution of labour (Eggly& Wood, 2013). Culture has a significant influence on parents' attitudes and views about how to raise their children. Cultural perspectives on health, disease, and well-being can impact breastfeeding decisions. For example, because of cultural ideas regarding the advantages of nursing for the infant's health and the mother-child attachment, it is considered the norm and heavily supported in certain societies (Mandal *et. al*., 2013).On the other hand, there is a dearth of studies that particularly look at how parental culture and occupation affect exclusive breastfeeding. Decisions about breastfeeding may be influenced by cultural norms or taboos in different cultures.

Statement of the Problem

It is widely acknowledged that exclusively for the first six months of a child's life, breastfeeding (EBF) is essential for the child's survival, growth, and development. However, despite efforts to raise awareness of the practice, exclusive breastfeeding rates in Nigeria remain low. Only 29% of infants fewer than six months are exclusively breastfed, far less than the 50% global target set by the World Health Assembly for 2025, according to the National Population Commission (NPC) and the Nigeria Demographic and Health Survey (NDHS).

Even though Lagos State is one of the most urbanised areas in Nigeria, exclusive breastfeeding rates remain unacceptably low, with substantial differences between urban and rural communities. Cultural practices, occupational demands, and a mix of urban and rural characteristics in the Badagry Local Government Area may contribute to a low rate of exclusive breastfeeding adherence. Lack of maternity leave, insufficient time, and breastfeeding support are among the obstacles that many mothers in the region face, particularly those who work in informal or labour-intensive occupations, which may make it difficult to exclusively breastfeed. Additionally, cultural beliefs and practices have a significant impact on breastfeeding behaviour. Contrary to EBF guidelines, some Badagry communities may follow traditional practices like giving infants water or herbal mixtures during the first six months. Exclusive breastfeeding efforts are significantly undermined by these practices, which frequently stem from generational traditions.

There is a dearth of research specifically addressing the interaction between parental occupation and cultural practices in influencing breastfeeding behaviour in the Badagry Local Government Area, despite numerous health campaigns and interventions to promote exclusive breastfeeding. Targeted interventions are further complicated by a lack of localised data, leaving many mothers without sufficient support for exclusive breastfeeding. This investigated the impact of parental variables on exclusive breastfeeding in the Badagry Local Government Area, including occupation and cultural customs.In order to develop culturally appropriate, effective interventions that will raise exclusive breastfeeding rates and ultimately improve child health outcomes in the region, an understanding of these factors is essential.

The main objectives are to:

i. examine the influence of parents' occupation on Exclusive Breastfeeding Among parents in Badagry local Government Area of Lagos state.

ii. examine the influence of parents Cultural Belief on Exclusive Breastfeeding Among parents in Badagry local Government Area of Lagos state.

Research Questions

The following questions were raised to guide this study.

i. To what extent does parents' occupation influence exclusive breastfeeding in Badagry local government?

ii. To what extent does parents' cultural beliefinfluence exclusive breastfeeding in Badagry Local Government?

Research Hypotheses

The following research hypotheses were formulated for this study.

$H_0$1: There is no significant difference in the mean rating of respondents on the level of exclusive breastfeeding based on parents' occupation in Badagry Local Government Area of Lagos State.

$H_0$2: There is no significant difference in the mean rating of respondents on the level of exclusive breastfeeding based on parents' culture belief in Badagry Local Government Area of Lagos State.

Methodology

The research design adopted for this study is a descriptive survey design. This method is used to provide a detailed and comprehensive description of a specific phenomenon, event, or population. The population for this study consisted of all parents in Badagry Area of Lagos state. This includes both mothers and fathers who have children residing in the Badagry Area. The term "parents" refers to individuals who have biological, adoptive, or legal responsibility for the care and upbringing of their children. According to Annual national population census 2006, there are Two hundred thirty-seven thousand seven hundred thirty-one. (237,731) parents in Bagagry local Government area of lagos state.

To determine the sample size for this study, the researcher made use of a research advisor. According to research advisor (2006) when population is 237, 731, a sample size of 384 is recommended. Therefore, the sample size for this study was 384.To select respondents, multi-stage sampling technique was employed. The first stage involved stratifying Badagry Local Government into three zones: Badagry Central, Badagry West, and Olorunda. In the second stage, simple random sampling techniques were used to select five communities from each zone, resulting in a total of 15 communities. Finally, in the third stage, convenience or accidental sampling technique was used to sample 26 parents from each of the 15 communities, yielding a total of 390 respondents for the study.

A structured questionnaire was utilized as the research instrument, divided into two sections: Section A focused on demographic information, while Section B addressed the research objectives. The face and content validity of the questionnaire were ensured. Reliability testing yielded a coefficient of 0.71 for the exclusive breastfeeding scale, indicating acceptable consistency. A letter of introduction and a consent form were provided to all respondents for their approval and participation in the study.

The data collected were analyzed using both descriptive and inferential statistics. Descriptive statistics, including mean, percentage, and frequency counts, were used to summarize demographic data and answer the research questions. Inferential statistics, specifically Analysis of Variance (ANOVA), were employed to test all the hypotheses at a 0.05 level of significance. This approach ensured a comprehensive analysis of the data to achieve the study's objectives.

Results

Demographic profile of the respondents was presented using frequency counts, mean and percentages. Inferential statistics of Analysis of Variance (ANOVA) was adopted to analyze the research hypotheses generated at 0.05 at level of significance.

Table 1: Distribution of respondents based on gender

Gender	Frequency	Percentage
Male	181	47
Female	203	52
Total	**384**	**100.0**

Table 1 shows the gender respondents on parental factors on exclusive breastfeeding among parents in Badagry. One hundred and eight-one (181) of the respondents representing 47.1% were male while two hundred and three (203) of the respondents were female representing 52.9%. From the analysis above, it was indicated that female respondents were found to be more in number than male respondents. Therefore, in view of the above result, female respondents prevailed of parental factors on exclusive breastfeeding among parents in Badagry.

Table 2:Distribution of respondents based on Parent Occupation

Parent Occupation	Frequency	Percentage
Civil Servant	148	38.5
Self-employed	94	24.5
Artisans	80	20.8
Farmer	62	16.2
Total	**384**	**100**

Table 2 shows the occupation of the respondents on the parental factors on exclusive breast feeding among parents in Badagry. It was indicated that one hundred and forty-eight (148) of respondents representing 38.5% were civil servant, ninety-four (94) of respondents representing 24.5% were self-employed, eighty (80) of respondents representing 20.8% were Artisans, while sixty-two (62) of respondents representing 16.2% were farmer. From the analysis above, it was indicated that the respondents who were civil servant found to be more in number than others with highest frequency and percentage. Therefore, in view of the above result, parent who were civil servant prevailed of parental factors exclusive breast feeding among parents in Badagry.

Table 3: Distribution of respondents based on Parent Culture belief

Parent Culture	Frequency	Percentage
Egun	93	24.2
Awori	83	21.6
Yoruba	78	20.3
Hausa	51	13.3
Igbo	31	8.1
Agoyin	28	7.3
Whedah	20	5.2
Total	384	100

Table 3 shows the parental cultural believe of the respondents on the parental on exclusive breast feeding among parents in Badagry. It was indicated that ninety-three (93) of respondents representing 24.2% were Egun, eighty-three (83) of respondents representing 21.6% were Awori, seventy-eighty (78) of respondents representing 20.3% were Yoruba, fifty-one (51) of respondents representing 13.3 % were Hausa, thirty-one of the respondents representing 8.1% were Igbo, twenty-eight of the respondents representing 7.3% were Agoyin. While, twenty (20) of the respondents 5.2% were Wheldah. From the analysis above, it was indicated that the respondents who were Egun found to be more in number than others with highest frequency and percentage. Therefore, in view of the above result, parent culture who were Egun prevailed of parental factors on exclusive breast feeding among parents in Badagry

Research Question One: To what extent does parent's occupation has influence on exclusive breastfeeding in Badagry Local Government?

Table 4: Frequency on the extent does parent occupation has influence on exclusive breastfeeding in Badagry Local Government.

S/N	Parent occupation and exclusive breastfeeding	VHE	HE	LE	VLE	Mean
1	Parents in higher demanding occupation find it difficult to practice exclusive breastfeeding	10(2.6)	46(12.0)	141 (36.7)	187 (48.7)	1.68
2	Flexibility and inflexibility of your 'work schedule influence your support for exclusive breastfeeding.	20(5.2)	51(13.3)	124(32.3)	189 (49.2)	1.74
3	The nature of your occupation influences your ability to lactate breastmilk effectively	20(5.2)	55(14.3)	113(29.4)	196 (51.0)	1.74
4	Parental stress arising from occupational demands affect your ability to establish successful breastfeeding practices.	20(5.2)	46(12.0)	71(18.5)	247 (64.3)	1.58
5	Occupation of the mother influences her access to breastfeeding resources and information?	10(2.6)	55(14.3)	148(38.5)	171 (44.5)	1.75
	Weighted Mean					**1.69**

Decision rule: Very High Extent: 3.0-4.0, High Extent: 2.0-2.9, Low Extent: 1.0-1.9, Very Low Extent: 0-0.9. Note: The figures in parentheses are in percentages

Table 4 shows the responses of the respondents on the extent to which parent's occupation has influence on exclusive breastfeeding in Badagry Local Government. It was indicated that Parents in higher demanding occupation does not find it difficult to practice exclusive breastfeeding (mean=1.68), Flexibility and inflexibility of 'work schedule does not influence support for exclusive breastfeeding (mean=1.74), The nature of occupation does not influences ability to lactate breastmilk effectively (mean=1.74), Parental stress arising from occupational demands does not affect ability to establish successful breastfeeding practices (mean=1.58), and Occupation of the mother does not influences her access to breastfeeding resources and information (mean=1.75). In the light of the result, it was revealed that the extent to which parent's occupation has influence on exclusive breastfeeding in Badagry Local Government is low. The weighted mean (**1.69**) which is a numeric indicator that the extent to which parent's occupation has influence on exclusive breastfeeding in Badagry Local Government low.

Research Question Two: To what extent does parent's culture has influence on exclusively breastfeeding in Badagry Local Government?

Table 5: Frequency on the extent to which parent culture has influence on exclusively breastfeeding in Badagry Local Government.

S/N	Parent culture and exclusive breastfeeding	VHE	VHE	VHE	VHE	Mean
1	Cultural upbringings influence your willingness to seek advice or guidance on exclusive breastfeeding from healthcare professionals	6(1.6)	48(12.5)	112(29.2)	218(56.8)	1.59
2	Parent cultural background influence your beliefs and practices regarding exclusive breastfeeding?	27(7.0)	48(12.5)	179(46.6)	130(33.9)	1.93
3	Traditional ceremonies or rituals in your culture influence the duration of exclusive breastfeeding for your child?	7(1.8)	126(32.8)	128(33.3)	123(32.0)	2.04
4	Cultural community's attitude towards breastfeeding in public influence your comfort level with exclusively breastfeeding in public?	32(8.3)	33(8.6)	147(38.3)	172(44.8)	1.80
5	Awareness and acceptance of modern healthcare practices related to breastfeeding exists within the cultural context of Badagry?	37(9.6)	83(21.6)	121(31.5)	143(37.2)	2.04
	Weighted Mean					**1.88**

Decision rule: Very High Extent: 3.0-4.0, High Extent: 2.0-2.9, Low Extent: 1.0-1.9, Very Low Extent: 0-0.9.

Table 5 shows the responses of the respondents on the extent to which parent's culture has influence on exclusively breastfeeding in Badagry Local Government. The respondents indicated that; Cultural upbringings does not influence willingness to seek advice or guidance on exclusive breastfeeding from healthcare professionals (mean=1.59), Parent cultural background does not influence beliefs and practices regarding exclusive breastfeeding (mean=1.93), however, traditional ceremonies or rituals in culture does influence the duration of exclusive breastfeeding for children (mean=2.04), meanwhile cultural community's attitude towards breastfeeding in public does not influence comfort level with exclusively breastfeeding in public (mean=1.80), and Awareness and acceptance of modern healthcare practices related to breastfeeding exists within the cultural context of Badagry (mean=2.04). In the light of the result, it was revealed that the extent to which parent's culture has influence on exclusively breastfeeding in Badagry Local Government is low. The weighted mean (**1.88**) which is a numeric indicator that the extent to which parent's culture has influence on exclusively breastfeeding in Badagry Local Government is low.

Table 6: Summary of Analysis Variance (ANOVA) showing significant difference in the mean rating of respondents on the level of exclusive breastfeeding based on parents' occupation in Badagry Local Government Area of Lagos State

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	50.714	3	16.905	1.321	.267
Within Groups	4863.284	380	12.798		
Total	4913.997	383			

The results of analysis of variance as presented in Table 16 revealed that the calculated value of F was 1.321 ($F_{3,380}$=1.321) and observed probability value is .267 which is greater than the fixed probability value of 0.05(P>0.05). This indicated that the hypothesis which stated that, there was no significant difference in the mean rating of respondents on the level of exclusive breastfeeding based on parents' occupation in Badagry Local Government Area of Lagos State was not rejected. This implied that there was no significant difference in the mean rating of respondents on the level of exclusive breastfeeding based on parents' occupation in Badagry Local Government Area of Lagos State ($F_{3,380}$=1.321, p>0.05). Considering this result, there was no significant difference in the mean rating of respondents on the level of exclusive breastfeeding based on parents' occupation in Badagry Local Government Area of Lagos State.

H_{O3} There is no significant difference in the mean rating of respondents on the level of exclusive breastfeeding based on parents' culture in Badagry Local Government Area of Lagos State.

Table 7: Summary of Analysis Variance (ANOVA) showing significant difference in the mean rating of respondents on the level of exclusive breastfeeding based on parents' culture in Badagry Local Government Area of Lagos State

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	1924.989	6	320.831	82.661	.095
Within Groups	1463.251	377	3.881		
Total	3388.240	383			

The results of analysis of variance as presented in Table 14 revealed that the calculated value of F was 82.661 ($F_{6,380}$=82.661) and observed probability value is .095 which is greater than the fixed probability value of 0.05(P>0.05). This indicated that the hypothesis which stated that, there was no significant difference in the mean rating of respondents on the level of exclusive breastfeeding based on parents' culture in Badagry Local Government Area of Lagos State was not rejected. This implied that there was no significant difference in the mean rating of respondents on the level of exclusive breastfeeding based on parents' culture in Badagry Local Government Area of Lagos State ($F_{6,380}$=82.661, p>0.05). In the light of the result, there was no significant difference in the mean rating of respondents on the level of exclusive breastfeeding based on parents' culture in Badagry Local Government Area of Lagos State.

Discussion of Findings

The results show that in the Badagry Local Government, only a small percentage of parents' employment has an effect on exclusive breastfeeding. This may be because jobs with demanding schedules or extended work hours may make it difficult for a mother to exclusively breastfeed. Frew *et.al*., (2020) found that moms working in governmental and non-governmental organisations in the research area had incredibly low exclusive breastfeeding practices. This result lends credence to the idea that maternal employment may impede exclusive breastfeeding practices. The results show that very few infants in Badagry Local Government are exclusively breastfed.

This could be due to the fact that some cultures within the Badagry local government may have outdated ideas or misconceptions regarding breastfeeding, which could make it more challenging to breastfeed on your own. This finding is in line with Williams's. This study examined how newborn feeding behaviours in a local area were influenced by cultural influences. The results showed that while cultural practices and beliefs did have an impact, exclusive breastfeeding practices were not dominated by them. Furthermore, the findings indicated that respondents in Lagos State's Badagry Local Government Area did not significantly differ in their mean assessment of the degree of exclusive breastfeeding according to the parents' work.

This suggests that regardless of the kind of employment parents held, there was no discernible variation in how parents in Badagry, Lagos State, perceived or rated exclusive breastfeeding. The findings of Kasahun and Abdul (2021), who discovered that being a parent had a major advantage over breastfeeding alone, conflict with this outcome. Frew*et.al.,* (2020) found that moms working in governmental and non-governmental organisations in the research area had incredibly low exclusive breastfeeding practices. These results, however, also run counter to this conclusion. Therefore, maternal employment may be a barrier to exclusive breastfeeding practices.

Additionally, these results are in opposition to those of Santos and Catrina (2022), who found that working mothers were less likely to exclusively breastfeed their children. This could be because it is difficult to maintain a work-life balance while breastfeeding, such as a lack of facilities for breastfeeding at work or limited breaks.

Conclusion

Based on the findings of the study, it was concluded thatthere was no significant difference in the mean rating of respondents on the level of exclusive breastfeeding based on parents' occupation culture in Badagry Local Government Area of Lagos State

Recommendations

Based on the findings for this study, the following recommendations were made

1. Since occupation and culture had a low influence, targeted education on the importance of exclusive breastfeeding should be provided to mothers through community-based workshops and healthcare settings to increase awareness and knowledge
2. Healthcare workers should offer consistent counseling and postnatal support to mothers regarding breastfeeding practices during and after pregnancy, ensuring that all mothers have access to accurate information and practical assistance
3. Policies that support breastfeeding in the workplace, such as paid maternity leave and designated breastfeeding spaces, should be implemented to make breastfeeding easier for working mothers, irrespective of their occupation
4. Community leaders, including traditional and religious leaders, should be involved in advocacy programs to promote breastfeeding in culturally appropriate ways, ensuring the integration of breastfeeding messages into local practices

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