

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; $\alpha=0.93$). 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

H₀₁: 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

H₀₂: 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

H₀₃: *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 use | -0.47 | -3.11 | 0.003 |

Source: Field Report 2025

Decision Rule:

The regression analysis reveals that all identified challenges—technical issues, power supply, lesson overload, training gaps, and large class sizes—negatively 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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