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EVALUATING THE IMPACT OF PLAY-BASED LEARNING STRATEGIES ON EARLY CHILDHOOD PERFORMANCE IN URBAN UGANDA

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Abstract

This study evaluated the impact of play-based learning strategies on the academic performance of early childhood learners in urban Uganda, with a focus on Makindye Division in Kampala. Despite widespread acknowledgment of play as a crucial component of early childhood development, its practical integration into teaching remains limited in Uganda's urban contexts, where formal instruction and academic pressure often overshadow developmental pedagogy. Guided by Caregiver Identity Theory, which emphasizes the caregiver's perceived role, commitment, and self-efficacy, the study investigated how caregivers implement play-based strategies and how this influence learner performance. A mixed-methods correlational design was employed, involving 70 caregivers selected through stratified random sampling. Quantitative data were collected using structured questionnaires and analyzed using Pearson Product-Moment Correlation Coefficient, revealing a statistically significant positive relationship between play-based learning and learner performance ($r = 0.563$, $p = 0.000$). Qualitative data, analyzed thematically, further supported these findings, with caregivers reporting improved learner engagement, communication, and task performance through storytelling, music games, and role play. However, barriers such as limited resources, large class sizes, and parental misconceptions were also noted. The study concludes that play-based strategies are both effective and underutilized, and recommends strengthening caregiver training, increasing resource access, promoting parental awareness, enforcing supportive policy measures, and conducting further longitudinal research to expand the evidence base for play-centered pedagogy in early childhood education.

Keywords: Play-based learning, Early childhood education, Caregiver identity theory, Learner performance, Uganda

Introduction

Globally, play-based learning is widely recognized as a foundational pillar of early childhood education (ECE), integral to children's cognitive, emotional, and social development. The approach is rooted in constructivist theories, particularly Vygotsky's socio-cultural framework, which emphasizes the role of social interaction and meaningful play in promoting learning and higher-order thinking skills (Vygotsky, 1978; Hirsh-Pasek et al., 2020). Play not only nurtures creativity and problem-solving skills but also contributes significantly to language acquisition, emotional regulation, and peer cooperation critical competencies for lifelong learning. High-income countries such as Finland, New Zealand, and Canada have institutionalized play-based curricula as part of national ECE policies, recognizing the pedagogical and developmental importance of active, child-centered learning environments (OECD, 2022).

In sub-Saharan Africa, and Uganda in particular, play-based learning is gaining increased attention from education stakeholders, including government ministries, NGOs, and teacher training institutions. Uganda's National Integrated Early Childhood Development Policy acknowledges play as central to a child's holistic development and calls for its inclusion in early childhood programs (MoES, 2016). However, the actual implementation of play-based pedagogy remains inconsistent across the country. In urban centers like Kampala, where economic pressures and performance-oriented schooling dominate, caregivers and teachers often prioritize rote learning and formal instruction over exploratory, play-oriented approaches (Ngwaru & Morara, 2019). As a result, many children are deprived of developmentally appropriate learning experiences that are essential during early childhood, particularly in densely populated urban contexts.

Despite its policy-level endorsement, play-based learning remains underutilized and undervalued in Uganda's urban early childhood education settings. In Kampala's low- and middle-income neighborhoods, caregivers often lack the training, resources, or institutional support to implement play-based strategies effectively (Khamis, 2022). The prioritization of early academic performance, often driven by parental expectations and school readiness pressures, compels caregivers and teachers to adopt formal, instruction-heavy methods. This focus on direct instruction and memorization not only contradicts best practices in early learning but also limits opportunities for young learners to build foundational cognitive and socio-emotional skills through structured play (UNICEF, 2021).

The implications of neglecting play-based learning are far-reaching. Children who are deprived of developmentally appropriate play opportunities may exhibit weaker problem-solving abilities, limited peer interaction skills, and increased anxiety associated with academic performance (Pyle et al., 2018). Moreover, in densely populated urban settings like Makindye Division, space constraints, lack of play materials, and large class sizes further hinder the integration of play in ECE classrooms (Musisi, 2022). These constraints contribute to an environment where caregivers rely more on worksheets, recitations, and repetitive drills, which, while measurable in the short term, may compromise holistic child development in the long term.

While global literature consistently highlights the benefits of play-based learning, much of this research is concentrated in high-income or Western contexts, leaving a significant gap in empirical evidence from sub-Saharan Africa particularly from urban, low-resource environments (Zosh et al., 2023). Existing studies in Uganda and other East African countries often focus on access to education, school readiness, or pandemic-related disruptions, with limited attention paid to the specific strategies caregivers use and how these influence developmental outcomes (Angrist et al., 2021). As a result, there is a lack of nuanced understanding of how play-based learning operates within Uganda's unique urban socio-cultural and economic conditions.

Furthermore, few studies rigorously explore the correlation between caregiver-led play strategies and measurable learner performance outcomes, such as literacy, numeracy, or classroom engagement, in informal or semi-formal early childhood settings (Noor, 2020). This knowledge gap hampers the development of locally relevant pedagogical training programs and policy interventions aimed at strengthening ECE delivery. Given the increasing urbanization and educational inequality in Kampala and similar cities across Africa, research is urgently needed to examine how play-based strategies can be effectively adapted, supported, and scaled in urban early learning environments.

Theoretical Framework

This study is anchored in the Caregiver Identity Theory (CIT), as articulated by Montgomery and Kosloski (2022), which conceptualizes caregiving as both a behavioral role and a core component of an individual's

identity. The theory outlines three central constructs role commitment, role salience, and role mastery which collectively shape how caregivers perceive their responsibilities and the strategies they employ. Role commitment refers to the emotional attachment and sense of duty the caregiver feels, role salience captures the extent to which caregiving is prioritized in the individual's self-concept, and role mastery reflects the caregiver's perceived competence and confidence in performing caregiving tasks (Canell & Caskie, 2023; Li & Seltzer, 2022). These dimensions are particularly relevant in understanding how caregivers internalize and implement play-based learning strategies, especially when faced with competing demands or limited formal training.

In the context of early childhood education in urban Uganda, where caregivers often operate without standardized training and within resource-constrained environments, the application of CIT provides a valuable framework for interpreting behavioral differences in pedagogical practice. The theory helps explain why some caregivers are more likely to adopt child-centered methods like play-based learning because they see themselves as active educators and not just custodial figures while others may default to rigid instructional methods due to low role mastery or weak role salience. CIT thus informs not only the assessment of the effectiveness of play-based strategies but also the underlying motivational and identity-driven factors influencing their adoption. This theoretical lens is essential for designing sustainable training and support programs that align with caregivers' self-perceptions and contextual realities (Montgomery & Kosloski, 2022; Eifert et al., 2022).

Literature Review

Globally, extensive research affirms that play-based learning is central to the cognitive, emotional, and social development of young children. Studies grounded in developmental theory especially those inspired by Piaget and Vygotsky highlight that play allows children to explore their environment, experiment with ideas, and develop language and problem-solving skills in developmentally appropriate ways (Zosh et al., 2023; Hirsh-Pasek et al., 2020). High-income countries such as Finland, Canada, and Australia have adopted national curricula that prioritize play as an essential pedagogical tool in early childhood education (OECD, 2022). Furthermore, meta-analyses suggest that play-based instruction, when guided by trained adults, improves outcomes in literacy, numeracy, self-regulation, and school readiness (Pyle et al., 2018; Zosh et al., 2023). These findings continue to influence global education policy discussions, placing increasing emphasis on developmentally appropriate, child-centered learning in the early years.

In the African context, however, implementation of play-based learning remains inconsistent and under-researched, particularly in low-income urban settings. In Uganda, early childhood education (ECE) faces several systemic challenges, including inadequate funding, lack of trained personnel, limited infrastructure, and overcrowded classrooms (UNICEF Uganda, 2021; Musisi, 2022). Though Uganda's National Integrated ECD Policy (2016) emphasizes the importance of play and holistic development, many caregivers and early childhood educators rely heavily on rote memorization and formal instructional methods (Ngwaru & Morara, 2019). Cultural perceptions that equate academic success with early literacy and numeracy proficiency further marginalize play as an essential learning strategy. In urban areas such as Kampala's Makindye Division, these issues are compounded by socioeconomic disparities, which limit access to resources, safe play spaces, and continuous caregiver training (Khamis, 2022). As a result, many young learners miss out on developmentally appropriate experiences that could lay a stronger foundation for their future academic and social success.

Although some studies in East Africa acknowledge the importance of play in ECE, few have empirically examined the specific relationship between caregiver-implemented play strategies and learner performance outcomes in urban Uganda. Most available literature focuses either on general access to ECE

services or on the broader challenges caused by events like the COVID-19 pandemic (Angrist et al., 2021; Noor, 2020). Moreover, the limited studies that do touch on play tend to be qualitative in nature, lacking statistical rigor or comparative analysis across different types of learning strategies. This lack of data undermines the formulation of targeted interventions that support play-based pedagogy in a scalable and contextually relevant way. This study seeks to fill that gap by providing quantitative and qualitative insights into how play-based learning strategies adopted by caregivers affect early childhood learner performance in an urban Ugandan setting. By doing so, it offers an evidence-based foundation for informing training programs, caregiver support services, and policy reforms aimed at enhancing early childhood education outcomes.

Methodology

This study employed a correlational research design to investigate the relationship between play-based learning strategies adopted by caregivers and the performance of early childhood learners in Makindye Division, Kampala, Uganda. The target population consisted of 415 caregivers working across 83 early childhood centers within the division. From this population, a sample of 70 caregivers was selected using stratified random sampling, ensuring representation from both private and public early childhood institutions. This sampling approach allowed for greater generalizability within the urban context while controlling for institutional differences that might influence the use of play-based strategies.

Data were collected using a structured questionnaire and a semi-structured interview guide. The questionnaire was designed to gather quantitative data on the frequency and types of play-based learning strategies used, as well as the observed academic and behavioral performance of learners. The interview guide was used to gather qualitative insights into caregiver attitudes, experiences, and contextual challenges. Validity of the instruments was ensured through expert review by specialists in early childhood education, while reliability was established through a pilot study conducted among 10 caregivers outside the main sample, resulting in a Cronbach's alpha coefficient of 0.873, indicating high internal consistency. Data collection took place over a two-week period under strict ethical procedures. Informed consent was obtained from all participants, anonymity was guaranteed, and participation was entirely voluntary. Ethical approval for the study was granted by the relevant educational authorities within Kampala.

For data analysis, quantitative data were analyzed using Pearson's Product-Moment Correlation Coefficient to test the relationship between play-based strategies and learner performance. Hypotheses were tested at a 0.05 level of significance. The qualitative data from interviews were analyzed thematically, allowing the researcher to triangulate findings and contextualize the statistical results. The combination of both data types enhanced the depth and robustness of the findings, providing a comprehensive understanding of how play-based strategies influence early childhood learning outcomes in urban Uganda.

Results Presentation

Quantitative Data Analysis

To address the research question on the relationship between play-based learning strategies and early childhood learner performance, the study employed the Pearson Product-Moment Correlation Coefficient. This statistical method was selected to measure the strength and direction of the linear association between the frequency of caregiver-implemented play-based strategies and indicators of learner performance. The analysis was conducted at a 0.05 level of significance to determine the statistical relevance of the findings.

Hypothesis

Null Hypothesis (H_0): There is no significant relationship between play-based learning strategies adopted by caregivers and the performance of early childhood learners in Kampala.

Table 1: Correlation between Play-Based Learning Strategies and Learner Performance

Variable	N	Mean	Std. Deviation	Pearson correlation (r)	Sig. (2-tailed)
Play-based learning strategies	70	3.98	0.64		
Learner performance	70	4.12	0.51	0.563	0.000

The results of the correlation analysis revealed a moderate positive relationship between play-based learning strategies and early childhood learner performance, with a Pearson correlation coefficient (r) of 0.563 and a p -value of 0.000. Since the p -value is well below the threshold of 0.05, the correlation is statistically significant. This suggests that as caregivers increase the use of structured play in their teaching practices, learner performance outcomes such as classroom engagement, task completion, and cognitive responsiveness also improve. These findings confirm the relevance of play-based pedagogy in enhancing learning outcomes and support calls for greater integration of such strategies in Uganda's early childhood education frameworks.

Qualitative Data Analysis

To complement the quantitative findings, qualitative data were collected through semi-structured interviews with selected caregivers to gain deeper insights into their experiences, beliefs, and practices regarding play-based learning strategies. The analysis followed a thematic coding approach, identifying recurrent patterns in responses that align with the study's focus: how caregiver-implemented play influences early childhood learner performance in Kampala. The aim was to triangulate statistical evidence with lived experiences to present a holistic understanding of play-based pedagogy in urban Ugandan settings.

Research Question

What is the relationship between play-based learning strategies adopted by caregivers and the performance of early childhood learners in Kampala?

Selected Interview Questions and Sample Responses

How often do you use play in teaching young children, and what types of play do you prefer?

Respondent 4 (Private caregiver):

"We use play daily, especially storytelling and music games. They help children learn words and express themselves easily.

Respondent 7 (Public caregiver):

"We mostly use role play and physical games. Children enjoy it, and I see they remember lessons better."

What changes have you observed in learners who engage more in play-based activities?

Respondent 2 (Private caregiver):

"They are more active in class, ask more questions, and complete tasks faster." *Respondent 10 (Public caregiver):* "Yes, the children who participate in games speak better English and even help others with numbers."

What challenges do you face when using play-based strategies?

Respondent 6 (Private caregiver):

"Sometimes we lack materials like toys, and classes are too big."

Respondent 8 (Public caregiver):

"Parents don't always support it they think we are just playing, not teaching."

Thematic analysis revealed that caregivers widely recognize play as an effective pedagogical tool that improves learner engagement, memory, communication, and problem-solving. Many preferred interactive forms of play such as storytelling, music games, and role play, which align with cognitive and language development goals. Respondents noted observable improvements in learner performance, particularly in task completion and verbal expression, supporting the quantitative finding of a positive correlation. However, caregivers also highlighted contextual challenges, including large class sizes, limited materials, and misconceptions from parents about the academic value of play. These insights reinforce the need for context-sensitive training and community sensitization to promote structured play as a credible educational strategy.

Discussion

The results of this study indicate a statistically significant positive correlation between play-based learning strategies adopted by caregivers and the academic performance of early childhood learners in Kampala ($r = 0.563$, $p = 0.000$). This finding confirms that caregivers who frequently engage children in structured play such as storytelling, music games, and role play observe improved learner outcomes in areas like task completion, verbal expression, and classroom engagement. This aligns with global evidence which emphasizes the educational value of play, suggesting that developmentally appropriate practices enhance a child's learning by fostering cognitive flexibility, emotional regulation, and social interaction (Hirsh-Pasek et al., 2020; Zosh et al., 2023). The findings affirm Vygotsky's sociocultural theory that children learn best through guided, interactive, and playful social experiences.

Qualitative responses from caregivers further corroborate the quantitative data. Caregivers reported that play-based activities stimulate learner interest, increase retention of information, and support expressive language development. For instance, several caregivers observed that learners exposed to daily music games or role play were more likely to speak confidently and solve problems during class tasks. These observations echo the findings of Pyle et al. (2018), who noted that children involved in guided play demonstrate stronger academic and interpersonal skills compared to those taught through direct instruction alone. Importantly, caregivers expressed a strong belief in the educational value of play, despite working in resource-constrained environments. However, they also identified key challenges such as lack of materials, overcrowded classrooms, and limited parental support factors that significantly affect the consistency and quality of play-based implementation.

These results highlight a critical issue in early childhood education in Uganda: while policy frameworks recognize play as a vital pedagogical tool (MoES, 2016), implementation on the ground is hampered by inadequate training, insufficient infrastructure, and social misconceptions. Many parents and school administrators in urban Uganda still view play as mere recreation, not a legitimate form of learning. This disconnect between policy and practice undermines the potential of play-based learning to transform early education outcomes, particularly in urban centers like Makindye Division where children face a complex interplay of academic pressure and socio-economic disadvantage (Musisi, 2022; Ngwaru & Morara, 2019). Thus, this study fills a critical empirical gap by not only establishing a direct link between play-based learning and learner performance but also by exploring the caregiver's role and the contextual limitations shaping pedagogical choices.

Overall, this study provides actionable insights for early childhood education reform in Uganda and similar contexts. It underscores that investment in play-based pedagogy should not focus solely on materials or

infrastructure, but also on shifting caregiver mindsets, improving professional competence, and engaging parents as partners in the learning process. By drawing on both quantitative and qualitative evidence, the study contributes a holistic and context-specific understanding of how play can be repositioned from a marginal activity to a central strategy in improving early learning outcomes. This supports the growing global call to prioritize playful learning in education systems, especially those serving vulnerable and underserved populations.

Conclusion

This study established a significant positive relationship between play-based learning strategies and the academic performance of early childhood learners in Kampala, Uganda. By integrating both quantitative and qualitative data, the findings demonstrate that structured play not only enhances learner engagement and skill development but also reflects caregivers' pedagogical intentions and professional identity. The study fills a crucial gap in sub-Saharan African early childhood education research by providing empirical evidence from an urban, resource-constrained context and emphasizes the need to support both caregivers and communities in adopting developmentally appropriate, play-based learning approaches.

Recommendations

- 1) Integrate play-based pedagogy into all caregiver training and professional development programs.
- 2) Provide schools and caregivers with accessible, low-cost, and culturally relevant play materials.
- 3) Launch public awareness campaigns to educate parents on the academic value of play.
- 4) Strengthen policy enforcement and monitoring of play-based learning in early childhood education.
- 5) Support further research on the long-term impact and contextual variations of play-based strategies.

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