

Learning Outcomes of Kindergartners: The Roles of Physical and Socio-emotional Home Environments

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Abstract

The kindergarten age lays the foundation for future learning and academic achievements. Thus, kindergartners are expected to begin to demonstrate, through their learning outcome, the evidence that they can profit maximally from formal learning which commences in primary 1. Despite this, many kindergartners were found to have poor learning outcomes. Only few research efforts have addressed this problem without little or no focus on the role that physical and socio-emotional home environments play in learning outcomes of kindergartners. This study therefore examined the individual relationship of physical and socio-emotional home environments with learning outcomes of kindergartners in Ondo Town, Ondo State. Anchored on Ecological System Theory, the study adopted the survey design of the correlational type. Simple random sampling technique was used to select 200 kindergartners from 20ECD classes of public primary schools in Ondo Town. Three validated instruments used were “Physical Home Environment Questionnaire (PHEQ)”, “Socio-emotional Home Environment Questionnaire (SHEQ)” and “Kindergartners Learning Outcome Test (KLOT)”. Data collected were analyzed using Pearson Product Moment Correlation. Physical home environment ($N=200$; $r=.292$; $p<0.05$) and socio-emotional home environment ($N=200$; $r=.229$; $p<0.05$) had significant relationship with learning outcomes of kindergartners. This study justified the conclusion that home is a strong determinant of learning outcomes of kindergartners. Parents should ensure that they provide kindergartners with educationally rich home environment that is complemented with calm, friendly and socially-comfortable atmosphere.

Keywords: Learning outcome, Kindergartners, Home environment, Physical home environment, Socio-emotional home environment

Introduction

The early childhood period, especially the kindergarten age, is pivotal in the life of every child. It is a period, usually around 5 years plus in Nigeria when children attend 1-year pre-primary or kindergarten education. The kindergarten period is considered as a bridge between early childhood and formal education which begins at primary 1. Global views of educators have been that the period lays the foundation for future learning and academic achievements (Early Learning Association of Australia, 2017; Omotuyole, et al., 2019; Pan et al., 2019; Alotaibi, 2023; Education Today, 2023). Over the years, available research evidences have equally established that the early academic skills that children acquire in kindergarten determine their future academic success (Campbell et al, 2002; Duncan et al., 2007; Pianta, et al., 2008; Ray and Smith, 2010; Heckman et al., 2013; National Institute for Early Education Research, 2020). On the other hand, a child with poor academic skills during the kindergarten age may find it difficult to cope at primary and other levels of education (McClelland et al., 2000; McClelland et al., 2006; Foundation for Child Development, 2016).

The importance of the early childhood as well as the kindergarten period is usually underscored in the way it draws attention of nations and world leaders in international policy discussions and action plans. For instance, Olowe and Oduolowu (2017) submit that access to quality early childhood development and care for all children was considered as one of the outcome targets of Global Agenda 4 in 2015. Similarly, the Federal Government of Nigeria (FGN) had specifically targeted various efforts at giving Nigerian children the opportunity to experience quality early childhood care and education. One of this is the inclusion of one-year compulsory kindergarten education in the 6th edition of the nation's National Policy on Education, captured under the programmes of Universal Basic Education (FGN, 2013). As stated in the 6th edition of the NPE, one of the purposes of the kindergarten education is also to lay foundation and formally prepare children for primary level of education where formal learning and academic activities begin (FGN, 2013). The implication is that kindergartners are expected display evidence, through their learning outcome, that they would benefit optimally in academic programmes awaiting them in primary one. Learning outcomes for kindergartners encompass a broad range of developmental domains, including cognitive, social-emotional, physical, and language development. In this study, the researchers measured kindergartners' learning outcome using early literacy and numeracy performance, being a key aspect of cognitive domain.

Despite the importance of kindergarten period, a painstaking observation we conducted by the researchers revealed that quite a large number of kindergartners in ECD classes of public primary schools in our States (Ondo and Lagos) are bedeviled with undesirable learning outcomes. Exploring literature about this problem, it was discovered that the same situation has been lamented and reported in research outcomes of some government agencies and development partners (e.g. National Bureau of Statistics, 2017; UNICEF Nigeria, 2019; World Bank, 2020). With this situation, the desirable future learning and academic achievements expected of kindergartners in formal schooling may become far from being realized. Few researchers in Nigeria (Olamoyegun et al., 2022; Aguh and Olutola, 2023) identified shortage of professional teachers, poor supervision, poor capacity building programme, and non-usage or poor usage of mother tongue as factors responsible for the abysmal learning outcome of kindergartners. In other climes, overcrowded classrooms (Blatchford et al., 2007), inadequate teacher training (Goe, 2007), limited access to quality early childhood education (Barnett, 2008) and poor home learning environment among others (Melhuish et al., 2008) are reported. While it was acknowledged that substantial research efforts have explored the subject mostly in foreign scenes, research gap remains with regard to the role that home environment play in learning outcomes of kindergartners, especially in Ondo Town.

Home environment refers to the physical, social, and emotional surroundings in which a child is raised. It is made up of several key elements, including the safe and well-organized physical conditions, opportunities for children to play, explore and discover, availability of educational materials, parental involvement, emotional support, and the quality of interaction between or among family members (Bradley and Corwyn, 2002; Sylva et al., 2020; Lehl et al., 2020, UNICEF, 2024). Home environment is pivotal to shaping a child's ability to adapt to formal learning settings, laying the foundation for future academic success. The researchers considered two aspects of home environment namely, physical and socio-emotional home environment. In this study, physical home environment is taken to include only the availability of learning and play space, learning resources such as books, toys, and digital tools that contribute to academic success. While some researches have shown that physical aspects of the home significantly impact learning outcomes in young children (Parker, 1999; Melhuish et al., 2008; Gary, 2016; Tamis-LeMonda, 2017; Lehl et al., 2020; Qiu & Wang, 2024) others reported contrary results (Bradley and Corwyn, 2001; Evans and English, 2002; Mao, 2022).

Socio-emotional home environment is the emotional and social dynamics within a household that influence a child's development and learning achievements. It includes the quality of relationships between family members, the emotional support children receive, and the presence of social norms that promote positive behavior and emotional regulation (Lehrl et al., 2020; Li et al., 2023). The researchers measured socio-emotional home environment in the light of quality of relationship among family members and the emotional supports/relationship that a child receives. Good socio-emotional home environment is reported to have significant relationship with language development and learning outcome of children in early childhood stage (Kalin, 2000; Melhuish, 2010; Xie et al., 2024). Conversely, other studies such as Lehrl et al (2020) and Berry et al (2016) reported that poor socio-emotional home environment impacted negatively on children's cognitive and academic success.

In Ondo Town, studies that show the relationship of physical and socio-emotional home environment with learning outcome of kindergartners are under reported. The researchers undertook this study to bridge this research gap and to offer insights that could inform effective interventions and support systems to optimize home environments for development of academic skills that would help kindergartners to be well positioned for participating in formal learning in primary 1 class and beyond.

Theoretical Framework

This study is situated within the Bronfenbrenner's **Ecological Systems Theory** which posits that a child's development is influenced by multiple environmental layers, ranging from their immediate surroundings (e.g. family, school, neighbourhood, peers) to broader societal contexts (Bronfenbrenner and Morris, 2006; Qiu and Wang, 2024). Among these, the family or home environment is the most influential. The Ecological Systems Theory is crucial for understanding how a child's home environment, particularly in the kindergarten years, can shape their academic skills, cognitive, social, and emotional development. **Kindergartners raised in the home where there are** emotionally supportive and cognitively stimulating atmosphere are better prepared academically for school and have stronger language and social skills.

Objectives of the Study

The study was carried out to:

- i. **determine the relationship that exists between** physical home environment and learning outcome of kindergartners in Ondo Town.

- ii. **identify the relationship that socio-emotional** home environment has with learning outcome of kindergartners in Ondo Town.

Hypotheses

Ha1: Physical home environment has significant relationship with learning outcome of kindergartners.

Ha2: Socio-emotional home environment has significant relationship with learning outcomes of kindergartners.

Methodology

The study adopted correlation design. The population for the study was made up of children who within kindergartens age in ECD classes of public primary schools in Ondo Town which is located within Ondo West Local Government Area of Ondo State. Ondo Town was stratified into four zones namely west, south, north and east and five schools were selected from each zone totaling twenty. The sample consisted of 200 kindergartners. Selection of twenty (20) kindergartners was randomly done in ECD classes of the public schools using the ballot system. Having consulted relevant literature, three instruments used for the study were self-designed having consulted “Physical Home Environment Questionnaire (PHEQ)”, “Socio-emotional Home Environment Questionnaire (SHEQ)” and “Kindergartners Learning Outcome Test (KLOT).” PHEQ had two sections (A and B). Section A was based on demographic information of the kindergartners while Section B had twelve items used to gather data on physical environment of kindergartners. SHEQ had thirteen items which measured socio-emotional characteristics in the home of the kindergartners. The response type adopted for both PHEQ and SHEQ was Yes and No. KLOT contained 12 items which were based on literacy (letter work) and numeracy (number work) skills. The instruments used were subjected to scrutiny of two lecturers of Early Childhood Education who are vast in research methodology. The suggestions of the experts helped to ascertain the validity of all the instruments. Twenty copies of each of the instruments were used to gather data from another local government, Ile Oluji/Okeigbo Local Government Area, and the data collected were subjected to reliability test. The PHEQ and SHEQ were subjected to reliability test through Gutman’s Split Half Technique and they yielded reliability index of 0.74 and 0.83 respectively. The KLOT was subjected to kuder-Richardson 20 formula. The index was 0.72. The researchers including some research assistants collected the data. In most cases, the items of PHEQ and SHEQ were interpreted to the kindergartners to ensure that they gave appropriate responses. Data collected on the

demographic profile of the kindergartners were analysed using descriptive statistics of frequency count and percentage while inferential statistics of Pearson product moment correlation was used to analyse the data gathered through PHEQ, SHEQ and KLOT.

Results

Demographic Profile

Of the 200 kindergartners selected for the study, a total of 72% were female while the remaining 28% were boys. 64 of the kindergartners representing 32% were less than 5 years and the remaining 136 representing 68% were above the age of 5.

Test of the Hypotheses

Ha1: Physical home environment has significant relationship with learning outcome of kindergartners.

Table 1: Summary of Pearson Product Moment Correlation showing Relationship between Physical Home Environment and Learning Outcome of Kindergartners

| Variable | Mean | SD. | N | r | Sig | Remark |
|---------------------------|-------------|------------|----------|----------|------------|---------------|
| Physical Home Environment | 56.16 | 4.58 | 200 | .292 | .000 | Significant |
| Learning Outcome | 58.00 | 3.32 | | | | |

Table 1 shows that there is a positive and significant relationship between physical home environment and learning outcome of kindergartners ($N = 200$; $r = .292$; $p < 0.05$). Hence, the alternative hypothesis 1 is accepted giving room for the rejection of the null hypothesis that physical home environment does not have significant relationship with learning outcome of kindergartners.

Ha2: Socio-emotional home environment has significant relationship with learning outcomes of kindergartners.

Table 2: Summary of Pearson Product Moment Correlation showing Relationship between Socio-emotional Home Environment and Learning Outcome of Kindergartners

| Variable | Mean | SD | N | r | Sig | Remark |
|---------------------------|-------|------|-----|------|------|-------------|
| Physical Home Environment | 58.10 | 3.20 | 200 | .229 | .001 | Significant |
| Learning Outcome | 58.00 | 3.32 | | | | |

Table 2 shows that there is a positive and significant relationship between socio-emotional home environment and learning outcome of kindergartners ($N = 200$; $r = .229$; $p < 0.05$). Hence, the alternative hypothesis 2 is equally accepted giving room for rejection of the null hypothesis that socio-emotional home environment does not have significant relationship with learning outcome of kindergartners.

Discussion of Findings

The study examined the individual relationship between physical home environment, socio-emotional home environment and learning outcomes of kindergartners in this study. It was hypothesised that physical and socio-emotional home environment will have significant relationship with learning outcome of kindergartners. We found that physical home environment had significant positive relationship with learning outcome of kindergartners, implying that the more improved the physical home environment gets, the better the learning outcome of kindergartners. The physical home environment as we conceived it in this study is taken to include only the availability of learning and play space, learning resources such as books, toys, and digital tools that contribute to academic success (Sylva et al., 2020; Lehl et al., 2020, UNICEF, 2024). The finding contributes to the wide view in literature that physical home environment has tremendous impact on child development and cognitive skills.

Thus, this finding is not surprising as it is consistent with the results of avalanche of existing researches indicating a positive impact of physical characteristics of home environment on young children. Qiu and Wang (2024) found in their study that material home environment (including books, digital materials and learning space) had significant relationship with 2-year old Chinese children's language development. Similarly, Han et al. (2023) in their study titled "Early-life home environment and child cognitive function: A

meta-analysis”, found that early-life home environment contributed to child cognitive function, implying the physical characteristics of home environment effects on early academic skills of the child. Other researches such as Melhuish et al (2008), Gary (2016); Tamis-LeMonda (2017) and Lehl et al (2020) equally showed that physical aspects of the home significantly impact learning outcomes in young children. However, this result is not in tandem with some previous researches that reported non-significant impact or relationship of home environment with one form of learning outcome or the other (e.g. Bradley and Corwyn, 2001; Evans and English, 2002; Mao, 2022).

As for socio-emotional home environment and learning outcome of kindergartners, we found that a significant positive relationship also exists between them. The implication of this finding is that a further improvement in the socio-emotional atmosphere surrounding the kindergartner would lead to a better learning outcome. This finding strengthens the fact that socio-emotional home environment, measured only as quality of relationship among family members and the emotional supports/relationship that a child receives, plays pivotal role in academic achievement of kindergartners (Lehl et al., 2020; Li et al., 2023). This finding substantiates previous research findings that socio-emotional home environment has significant relationship with academic skills of children in early childhood (Melhuish, 2010; Xie et al., 2024). Both of our findings in this study lends credence to the Ecological Systems of Theory of Bronfenbrenner which posits that a child's development is influenced by their immediate surroundingse.g. family, school, neighbourhood, peers (Bronfenbrenner and Morris, 2006; Qiu and Wang, 2024).

Conclusion

Based on the findings, the study concluded that home environment is one of the key factors that determine the learning outcome of kindergartners. The level at which the environment is positive, educationally rich, socially-supportive, conducive and comfortable for kindergartners has a direct link with their academic achievement both in the now and in future educational ladders.

Implications, Limitations and Recommendations

Findings from this study have implications for a few key actors in the education of kindergartners. Parents who become aware of the findings are kindled in their responsibility to ensure that the physical home environment surrounding their children of kindergarten age is well-informed or equipped with age appropriate learning and play space, learning resources such as books, toys, and digital tools. Consequently, this would position the kindergartners

for better school performance. Not only this, parents could be spurred to take decisive decisions with regard to making sure that the socio-emotional environment of their kindergarten age children is such that is devoid of chaos or emotional stressors.

Relevant government agencies such as State Universal Basic Education Board (SUBEB) may be spurred to come up with effective interventions and support systems (e.g. seminars, workshops) that could help parents to be informed and exposed to recommended ways and practices that can optimize home environments for development better academic skills in kindergartners.

In this study, we did not consider both physical and socio-emotional home environments as variables that comprise several other dimensions as done in many previous studies (e.g. Feye&Abdi, 2019; Tamis-LeMonda, 2017; Lehl et al, 2020). So, future researchers should take into consideration other aspects which were not considered in this study. Also, data was collected from the view of the kindergartners themselves interpreting to them where necessary. Although this was done to ensure authenticity of the information collected, future researchers could collect the data from both kindergartners and their parents to juxtapose the two sources of data.

Parents need to provide kindergartners with physical home environment that is educationally rich in learning resources such as books, toys, digital materials, play and learning space among others. Likewise, parents should create a supportive socio-emotional home environment that is complemented with calm, friendly and socially-comfortable atmosphere. SUBEB should work towards bringing parents of kindergartners in the study area together to imbue them with knowledge of what can be done to ensure that they provide desirable physical and socio-emotional home environments, thereby promoting the development of key academic skills in kindergartners.

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