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## Play, Family Involvement, Literacy Interest and Literacy Skills Among Preschoolers from Low-Income Families in Nigeria: Sex as a Moderator

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### Abstract

Previous research reported conflicting findings on the influence of play, family involvement and literacy interest on literacy skills as the influence of these variables varies by sex. Therefore, the present study was conducted to determine the moderating role of sex between these variables among pre-schoolers from low-income families in Taraba State Nigeria. 394 preschool children aged 3 to 5 years with their mothers were selected using a proportionate stratified random sampling technique. The findings confirmed significant direct positive effects of play, family involvement and literacy interest on literacy skills. It also revealed a significant moderating effect of sex on the relationship between play and literacy skills. It also confirmed that the influence of family involvement on literacy skills is moderated by sex. Contrarily, the moderating effect of sex on the relationship between literacy interest and literacy skill was not significant. The study concluded that preschool boys and girls were different in their natural creation which may cause differences in their literacy skills ability. The finding implied the need for more attention from the preschool setting to further improve their academic planning in order to enhance both preschool boys' and girls' literacy skills.

**Keywords:** Play, Family Involvement, Literacy Interest, Literacy Skills, Pre-schoolers

### Introduction

Earlier studies have investigated the extent to which play, family involvement and literacy interest have impacted on literacy skills. However, their findings were conflicting, while some reported gender differences on the effects of these variables on literacy skills across sex while others reported no differences across sex (Brandlistuen et al., 2020; Eggen & Kauchak, 2013; Bulotsky-Shearer et al., 2012). Interestingly, sex differences in literacy skills have captured the interest of social scientists, psychologist, and educators. Boys were observed to have better quantitative skills compared to girls and scored higher in mathematics; while in English higher scores were found for girls compared to their male counterparts (Calvin et al., 2010). The performance differences across sex could likely be a potential reason for such conflicting relationships. However, literature is yet to provide empirical evidence on whether sex can stimulate such conflicting findings within the extant literature in relation to play, family involvement, literacy interest and literacy skills. In fact, some studies have demonstrated

insufficient evidence of any gender variation, whether at regional level or global level (Jones & Myhill, 2007; National Research Council, 2015) especially within the context of preschoolers from low-income families.

Therefore, the motivation of this study is twofold. First, there are the paucity of empirical evidence on the direct effect of literacy interest alongside play and family involvement on the literacy interest in Nigeria. The paucity of this evidence is more pronounced especially the 3-5-year-olds, who need to pass through the transition from preschool to primary education in order to specify and provide the necessary support for those who need so. Hence, the need for empirical evidence that will enable future researchers to compare findings between Nigeria and other developed and developing countries. Secondly, in the Nigeria research context, studies relating to sex differences among preschool children's literacy skills ability have been relatively lesser compared to other western countries. Beyond Nigeria, extant literature did not reveal that the moderating effect of sex has been studied with respect to the effect of play, family involvement and literacy interest on literacy skills, hence, the need for empirical evidence that will address this important research gap.

### **Play and Literacy Skills**

Play is a very vital considering that the desire for children to play is inbuilt in their characters, hence it becomes an integral part of their growth (Hosokawa & Katsura, 2018). Play-based learning is hinged on the inbuilt sense of curiosity as well as children's exploration towards literal discovery of the world around them (Smith, 2010). Therefore, the critical aspect of learning through play has been seen as a social experience. In essence, when child learned through play, literacy can be achieved through such a literacy, considering that the learning environment could be stronger and more desirable for them to prosper (Rand & Morro, 2021;

Moore, 2020; Chopra & Khanna, 2019; Moyles, 2005; Arce (2000) reported that play offer strong chance for children to learn. Also, play enable teachers to better understand the best way to set up and manage a classroom which will make it more conducive and easier for children to play and learn skills (Dewar, 2017). It was concluded that play the impact of play is bigger in the potentials of children especially their academic achievement (Dewar, 2017; Bredekamp, 2005). While evidence have been clear on the influence of play on literacy skills, the existing empirical findings mostly emerged from developed countries, with lack of evidence from the perspectives of developing countries, especially Nigeria.

### **Family Involvement and Literacy Skills**

Literature reports that children's interactions with home-based literacy have a significant role in the early growth of their literacy towards their adolescence (Vygotsky, 1978). Thus, parents' participation in storytelling with regards to the written items including storybooks, offered them a greater chance of concentrating on the print materials setting and involves them in the storybook reading interfaces (Vygotsky, 1978). Multiple findings from earlier studies on pre-school literature revealed a positive influence of family involvement on children's skills in reading and writing (Gay et al., 2021; Chau et al., 2017; Davis et al., 2016; Smith et al., 2013; Hood et al., 2008). Therefore, in examining the relationship between family involvement and child literacy skills, earlier studies showed that the behaviors of parents in the literacy of their children would have an influence on language and overall development of children (Hood et al., 2008). This implies that earlier studies established a clear relationship between parenting

and parental involvement (Dobbs-Oates et al., 2015). This study suggests that home is the first and most important contributor that improves literacy, which offers children full literacy skills (National Early Literacy Panel, 2008).

### **Literacy Interest and Literacy Skills**

Some previous studies showed that literacy interests of all kinds have contributed positively to the comprehension of the reader and strengthened their reader's literacy skills (Squires, et al., 2014). Miranda et al (2011) further explained that elevated interest in literacy such as reading was generally expressed in reading attitudes such as readiness to grasp words and thoughts in reading passages, and the most important point was that they would view reading as a pleasant experience. This may relate to the research carried out by Cambria and Guthrie (2010) and said that students can be encouraged to improve literacy by feeling friendly when they read their content and eventually their academic results. If interested in literacy, children were more likely to identify phrases and letters (Baroody & Diamond, 2010). Walgermo et al (2018) also confirmed these findings, testifying that children with less interest in reading will have less emerging reading at college entrance and further poor reading abilities after one school year (Viljaranta et al., 2009; Nurmi & Aunola, 2005). Therefore, some researchers proposed that children's interest in literacy should be instilled to support and inspire them in learning and to improve their literacy skills to increase learning (Silinskas et al., 2020; Walgermo et al., 2018).

### **Sex as a Moderator in the Relationship between Play, Family Involvement, Literacy Interest and Literacy Skills**

Sex has been defined as the biological and physiological characteristic used in identifying both men and women (Phillips, 2005). In this study, the attempt has been made in exploring whether sex can serve as a moderating variable as well as to determine whether the structural relationships between playful learning, family involvement, literacy interest, and literacy skills are stable across the sex of children among pre-school children from low-income families. Findings presented by earlier studies revealed conflicting results due to sex differences. For instance, sexual differences were established in the play, the interest in literacy, and literacy skills, with girls demonstrating different skills in play and literacy compared to the boys (Bulotsky-Shearer et al., 2012). This has been further confirmed by other previous studies which reported that girls exhibit more cooperative peer play skills and language competencies compared to boys (Bulotsky-Shearer et al., 2010; Fantuzzo et al., 2013; Ethier et al., 2006). Similarly, gender differences were also reported with respect to literacy interest. Most of the boys were found in previous studies to have different interests in reading text compared to girls (Oakhill & Petrides, 2007). In Nigerian context, like most of the African countries, there are prevalence of sex variations in terms of child education across gender (Arigbabu & Mji (2004). Tough some studies reported that there is insufficient evidence for gender variation generally around the world and regional levels (Jones & Myhill, 2007).

However, it was confirmed that there is dissimilarity in terms of writing, linguistic characteristics and methods between boys and girls, although only tiny variances were found (Jones & Myhill, 2007). Therefore, based on the foregoing evidence, it can be said that sex can be a moderator in the connections between playing, family involvement, literacy interests, and literacy skills. Thus, the need to explore the possible moderation effect of sex based on the conflicting result. Consequently, in line with the recommendation of Baron and

Kenny (1986) there is a need to explore a possible moderating effect of sex in the aforementioned relationships. Hence, this study proposed to examine whether the structural relationships between play parental involvement, literacy interest, and literacy skills among preschoolers from low-income families in Nigeria are moderated by sex as shown in Figure 1. The following conceptual framework is developed which is validated in this study using data relating to preschool children from low-income families.

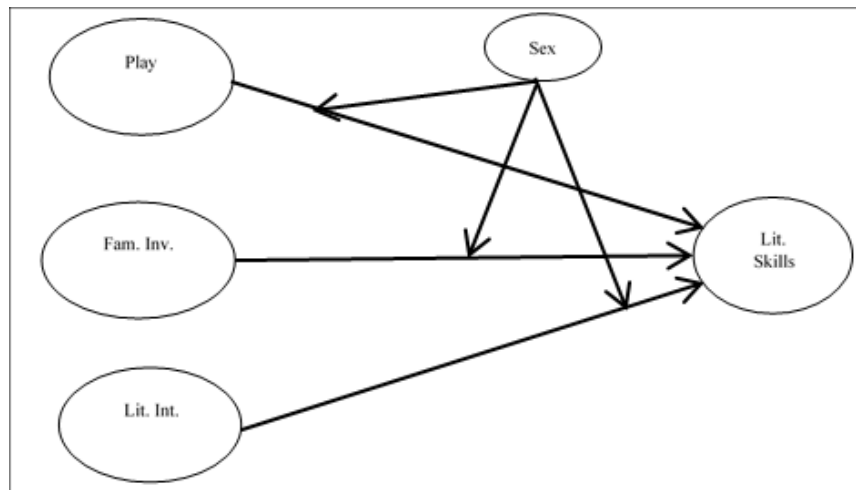


Figure 1: Conceptual framework of the study

## Research Methodology

### Participants and Procedure

The participants of this study were 394 mothers from low-income families with preschool children aged 3 to 5 years. Mothers in the selected preschools were recruited as respondents in the current study if they fulfilled the criterion. Firstly, they had preschool-aged children or children who study in preschool between the age of three to five years old and they lived together with the child. Secondly, they provided chances for their kids to be involved or conduct literacy activities at home. Thirdly, children must be from low-income families. Only mothers and children who fulfill the criteria were selected to participate in this research. The sampling technique considered in this research is proportionate stratified random sampling to get a representative sample of pre-schoolers aged between three and five years in Taraba State. Ethical clearance was obtained from the Ethics Committee for Research Involving Human Subjects, Universiti Putra Malaysia, prior to starting data collection. Permission was also sorted from the headmasters of the selected schools before data collection started. A pilot study was conducted before the main study involving 40 mothers who fulfilled the criteria of the study. All the recruited participants were properly briefed, and their consent was obtained to guarantee their confidentiality.

### Instrumentation

Research instruments in form of a survey questionnaire in English were designed and used for data collection.

Toddler and Play Scale Questionnaire (TPSQ) was developed by Manz and Bracaliello (2016). This measure has a total of 13-item with a 5-point Likert scale with an internal consistency of .83. By summing up the responses of the 13 elements, the total scores were determined. The

higher the ratings, the more parents believed play is necessary for their children's social and linguistic development, as well as their school readiness skills. Higher scores also indicated parents performed their roles in the play of children.

Family Involvement Questionnaire – Short Form (FIQ-SF) (Fantuzzo et al., 2013). was utilized to measure family involvement. The FIQ-SF is a 21 item self-report instrument with a 5-point Likert scale, which is from 1 = Strongly Disagree; 2 = Disagree; 3 = Undecided 4 = Agree, 5= Strongly Agree. The internal reliability of Cronbach's alpha was .97. It consists of three subscales that measure different aspects of family involvement. For the scoring parts, responses are based on a 5-point Likert scale ranging from 1 (Strongly Agree) to 5 (Strongly Disagree). Higher scores suggested that a particular family or parent is highly involved in preschool children's education.

Preschooler's literacy interest was evaluated by the Children's Interest Measure (Baroody, & Diamond, 2019) This instrument, consisting of 17 objects, including reading, letters, and writing, provides a measure of the interest of children in literacy in two parts: the enjoyment and frequency of involvement in literacy activities. Based on a five-point Likert Scale, these things are graded, which is from 1= Never to 5= Regular. Higher scores reflect a higher interest level in literacy.

Literacy skills was measured by Get Ready to Read! (GRTR) which is developed by Whitehurst (2000) from the National Centre for Learning. In this instrument, there are three central domains of readiness: Print awareness, such as separating written words from photographs, understanding of books and printed letters; emergent writing skills. The GRTR consists of 20 items with four response choices for each item. For reliability and validity, the GRTR has an alpha of .78 and split-half reliability of .80 (Whitehurst & Lonigan, 2001). The options are presented to the child as four pictures, and he or she must respond by pointing to the correct answer after listening to the instructions or questions from parents. For scoring part, scores for three domains are achieved by summing all correct answers for each section in print knowledge, emergent writing skills and phonological awareness. Hence, a total score of a child is calculated with all the correct answers he or she gets. According to Baroody and Diamond (2019) ratings of 0 to 6 indicate very poor early literacy skills, 6 to 9 indicate weak skills, 9 to 12 indicate average literacy skills, 12 to 16 indicate good skills, and 16 to 20 indicate very strong skills. The highest score is 20 and the lowest score is 0. If the child obtained the highest score, that means he or she has better skills of literacy.

## Results

### Respondents Demographics

Most of the mothers involved in the present study are aged 25 -35 years old (69%), with an average age of 40.17 (SD=5.02). While about 56.3% of the mothers have certificates in education. Additionally, most of the respondents have 1 to 3 children (76.6%). In regard to family monthly income, most of the families within the income range of N20,001 to N25,000 (38.6%), while those within the income range of N30,001 to N35,000 are the least (0.3%). In this study, out of 394 preschool children surveyed, those at the age of two years are 0.3%, those aged three years 60.9%, those aged four years 28.9%, and those aged five years 9.9%. In terms of their sex, the majority of the preschool children are female, accounting for 55.8%, while the rest about 44.2% are male children.

### Structural Model Assessment

The results of the study are shown in Table 1. The moderating effect of sex between family involvement and literacy skills and play and literacy skills found no significant difference between males and females because both are significant, however, the path between literacy interest and literacy skills found a significant difference between males and females as the p-value for a female is insignificant and male found significant that confirms significant moderation effect. The moderating effect of sex between family involvement and literacy skills and play and literacy skills found no significant difference between males and females.

Table 1

#### *Moderation effect of sex result*

Hypotheses	OS/Beta (Female)	OS/Beta (Male)	t-Value (Female)	t-Value (Male)	p-Value (Female)	p-Value (Male)	Moderation Decision
Family Involvement -> Literacy Skills	0.209	0.210	2.823	2.245	0.005	0.025	No Moderation
Literacy Interest -> Literacy Skills	0.096	0.187	1.056	2.332	0.292	0.020	Moderated
Play -> Literacy Skills	0.242	0.274	4.193	3.952	0.000	0.000	No Moderation

### Conclusions and Implications

This paper examined the moderating effect of sex in the relationship between play, family involvement, literacy interest and literacy skills among preschool children from low-income families in Nigeria. The finding from the study revealed that sex has a significant moderating effect on the relationship between play and literacy skills as well as between family involvement and literacy skills, but such has not been established between literacy interest and literacy skills. This implies that the influence of play and family involvement on literacy skills varies across sex. Differently, the influence of literacy interest on literacy skills was found to be the same across gender.

In practice, the study offers important policy insights to educational authorities as well as the family of preschoolers. It revealed that when developing educational policies for which play could be desired to improve literacy interest, different provision should be made between male and female preschoolers because the relationship between play and literacy skills varies by gender. Moreover, when family desired to be involved in the literacy activities of their preschool children care need to be taken on the deployment of such strategy across gender as there is varying influence of family involvement on literacy skills between male and female preschoolers. However, similar approach can be deployment when literacy interest has been a focus for improving literacy skills of preschool children.

The model developed and validated in this study can be adapted and further validated using preschoolers from other low income developing countries by future researchers. This will enable cross-country validation and comparison of findings. This study suggested that future researchers should integrate additional variables that can add to the explanatory power of the model. This research was also able to establish the moderating effect of sex with respect to only two out of three variables, it means that there could be other potential moderators that can establish moderating effect between literacy interest and literacy skills beyond gender. Thus, it is suggested that future researchers should explore those potential moderators.

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