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Play-Based Learning as a Tool in Enhancing Physical Skill Development of Children

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ABSTRACT

The study examined play-based learning as a tool for enhancing physical skill development of Children. The study adopted a pre-test, post-test control group quasi-experimental research design. All children, aged 4 to 12 years in Asa Local Government Area of Kwara State make up the population, while 80 children were selected to participate in the study. Multi-stage sampling technique was used to select the sample. The reliability index of the instrument was determined using Pearson Product Moment Correlation (PPMC). Four research hypotheses were formulated and tested in the cause of the study with inferential statistics of Analysis of Covariance (ANCOVA) and t-test. Play-based learning was found to have a significant effect on children's physical skills development in Asa Local Government Area of Kwara State. It was therefore recommended that play-based learning should be used always to promote children's holistic development.

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1. INTRODUCTION

In recent years, there has been growing interest in play-based learning as a pedagogical approach to early childhood education that emphasizes the importance of play in children's development. In Nigeria, play-based learning is becoming increasingly popular, but little is known about its effectiveness in enhancing physical skill development in children. This study aims to fill this gap by exploring the effectiveness of play-based learning in enhancing physical skill development in children of Asa of the Local Government Area of Kwara State, Nigeria. Through a combination of literature review, and empirical research, it is hoped to contribute to a better understanding of how play-based learning can support the development of physical skills in young children, with potential implications for education policy and practice in Nigeria." Play-based learning is an approach to early childhood education that emphasizes the importance of play in children's development. Play-based learning has been shown to have numerous benefits, including enhancing physical skill development in children (Joo *et al.,* 2020, 2009; Goffin & Wilson, 2001). Physical skill development is essential for children's overall development and well-being, as it helps them build confidence, coordination, and social skills (Burton, 2016; Lobo & Winsler, 2006).

Research has shown that play-based learning can enhance physical skill development in young children. For example, a study by Hardy *et al*. (2010) found that children who participated in a play-based physical activity program showed significant improvements in their balance, coordination, and motor skills. Similarly, a study by Williams *et al*. (2008) found that play-based interventions can improve physical fitness and overall health in young children. Despite the potential benefits of play-based learning, there is a lack of research on the effectiveness of play-based learning in enhancing physical skill development in children in Nigeria. This study aims to fill this gap by exploring the effectiveness of play-based learning in enhancing physical skill development in children of Asa of the Local Government Area of Kwara State, Nigeria. According to the World Health Organization (WHO), physical activity is important for children's overall health and well-being. However, many children around the world, including in Nigeria, are not getting enough physical activity (Bello & Alao, 2019). This lack of physical activity can have negative consequences on children's physical, cognitive, and emotional development (Burton, 2016; Janssen & Leblanc, 2010).

Play-based learning has been defined as an approach to learning that is child-centered and based on the child's interests, abilities, and experiences (Taylor & Boyer, 2020). Play is considered to be a natural way for children to learn about the world around them, and it provides opportunities for children to develop a range of physical, cognitive, and social-emotional skills (Kidwai, 2020). Play-based learning is believed to be particularly effective in promoting physical skill development in young children because it is enjoyable, engaging, and developmentally appropriate (Lobo & Winsler, 2006). Asa Local Government Area of Kwara State, Nigeria, is a particularly relevant context for studying play-based learning and physical skill development because it has a high proportion of young children and a diverse population with different cultural and linguistic backgrounds. Additionally, there is a need for evidence-based interventions to promote physical activity and development in this region, given the high prevalence of physical inactivity among children in Nigeria (Bello & Alao, 2019).

According to the United Nations Children's Fund (UNICEF), Nigeria has one of the largest populations of children in the world, with over 93 million children under the age of 18 (see on https://www.unicef.org/nigeria/overview). However, many of these children face significant challenges to their health and well-being, including limited access to education, healthcare, and basic resources such as clean water and food. In addition, there is growing concern about

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the low levels of physical activity among Nigerian children. A recent systematic review of the physical activity levels of children in Nigeria found that only 22.5% of children met the recommended daily physical activity guidelines (Bello & Alao, 2019). This lack of physical activity is particularly concerning given the importance of physical activity for children's physical, cognitive, and emotional development (Burton, 2016; Janssen & Leblanc, 2010).

To address this issue, there have been efforts to promote physical activity and development in young children in Nigeria. One approach that has gained increasing attention is play-based learning. Play-based learning is believed to be particularly effective in promoting physical activity and development because it is enjoyable, engaging, and developmentally appropriate for young children (Lobo & Winsler, 2006; Williams *et al*., 2008). However, there is limited research on the effectiveness of play-based learning in enhancing physical skill development in Nigerian children. Most of the existing research on play-based learning and physical skill development has been conducted in high-income countries, and may not be directly applicable to the Nigerian context (Hardy *et al*., 2010; Williams *et al*., 2008).

This study aims to address this gap in the literature by exploring the effectiveness of play-based learning in enhancing physical skill development in children of Asa of the Local Government Area of Kwara State, Nigeria. By examining the effectiveness of play-based learning in this specific cultural and environmental context, this study could provide valuable insights into the potential of play-based learning to promote physical activity and development in young children in Nigeria. A study by Doherty *et al*. (2017) investigated the effects of play-based learning on the physical development of preschool children in Ireland. The study involved 100 children who were randomly assigned to either a play-based learning group or a traditional learning group. The play-based learning group participated in structured play activities that were designed to promote physical skill development, while the traditional learning group received traditional classroom instruction. The results of the study showed that the children in the play-based learning group made significant improvements in their gross motor skills compared to the traditional learning group.

In another study, Williams *et al*. (2008) examined the effects of a play-based physical activity intervention on the motor skills of preschool children in the United States. The intervention involved providing children with a variety of toys and equipment that were designed to promote physical activity and skill development. The results of the study showed that the children who participated in the intervention made significant improvements in their motor skills compared to a control group. A study by Guan *et al*. (2017) investigated the effects of a play-based intervention on the physical activity levels and motor skills of Chinese preschool children. The intervention involved providing children with a variety of play-based activities that were designed to promote physical activity and skill development. The results of the study showed that the children who participated in the intervention had higher levels of physical activity and improved motor skills compared to the control group.

In a study conducted in South Africa, Pillay *et al*. (2014) examined the effects of a play-based intervention on the physical development of preschool children from disadvantaged communities. The intervention involved providing children with a variety of play-based activities that were designed to promote physical activity and skill development. The results of the study showed that the children who participated in the intervention had significant improvements in their motor skills compared to the control group. A study by Hamari *et al*. (2020) examined the effects of a play-based intervention on the physical activity levels and motor skills of Finnish preschool children. The intervention involved providing children with a variety of play-based activities that were designed to promote physical activity and skill development. The results of the study showed that the children who participated in the

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intervention had higher levels of physical activity and improved motor skills compared to the control group.

Equally, gender to as been found to be a significant factor in the effectiveness of play-based learning in enhancing physical skill development in children. For example, a study by Guan *et al*. (2017) found that a play-based intervention had a greater impact on improving the physical activity levels and motor proficiency of boys than girls. This finding is supported by research conducted by Williams *et al*. (2008) who found that boys were more physically active and had better motor skills than girls at the preschool age. In contrast, a study by Doherty *et al*. (2017) found no significant differences in the physical development of boys and girls who participated in a play-based learning intervention. However, the authors noted that there were fewer girls than boys in the study, and thus, the findings may not be generalizable to a larger population. It is important to consider gender when designing and implementing play-based learning interventions to ensure that both boys and girls receive equal opportunities to develop their physical skills. Further research is needed to better understand the gender differences in the effectiveness of play-based learning in enhancing physical skill development in children.

Another study by Hesketh *et al*. (2017) investigated the role of gender in the effectiveness of a play-based intervention in improving physical activity and motor skills in Australian preschool children. The results showed that boys had greater improvements in motor skills than girls. However, there were no significant gender differences in physical activity levels. Goh and Koh (2016) examined the gender differences in the effects of play-based learning on preschool children's physical activity and fundamental movement skills in Singapore. The results showed that both boys and girls showed significant improvements in their physical activity levels and fundamental movement skills. However, girls showed greater improvements in object control skills compared to boys.

Age is an important factor to consider when exploring the effectiveness of play-based learning in enhancing physical skill development in children. According to Williams *et al*. (2008), preschool-aged children are in a critical period of development when they are acquiring fundamental movement skills that serve as the foundation for more advanced motor skills. During this time, children are highly responsive to environmental factors, such as opportunities for play and physical activity, which can have a significant impact on their motor skill development. Studies have shown that play-based learning can be particularly effective in promoting physical skill development in preschool-aged children. For example, Pillay *et al*. (2014) conducted a study in South Africa that found that a play-based intervention led to significant improvements in the gross motor skills of children between the ages of three and five. Similarly, Doherty *et al*. (2017) conducted a randomized controlled trial in Canada that found that a play-based intervention led to significant improvements in the physical development of children between the ages of three and five. It is important to note that the effectiveness of play-based learning may vary depending on the specific age group being studied. Guan *et al.* (2017) conducted a study in China that found that a play-based intervention was more effective in promoting physical activity and motor proficiency among younger preschool children (aged three to four) than among older preschool children (aged five to six). This suggests that play-based interventions may need to be tailored to the specific needs and abilities of different age groups to be most effective.

Despite the recognized importance of physical skill development in children, there is a lack of effective and engaging methods for achieving this in ASA Local Government. Traditional teaching methods may not always be the most effective for engaging young children in physical activity, which could lead to lower levels of physical skill development. The use of

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play-based learning as a tool for enhancing physical skill development in children has shown promise in other settings, but its effectiveness in ASA Local Government has not been thoroughly explored. Therefore, the problem to be addressed is whether play-based learning can effectively enhance the physical skill development of children in ASA Local Government, and if so, how it can be implemented effectively in the local context.

Research hypotheses are the following:

(i) Ho1: There is no significant effect of play-based learning on children's physical skills development in Asa Local Government Area of Kwara State.

(ii) Ho2: There is no significant effect of play-based learning and gender on children's physical skills development in Asa Local Government Area of Kwara State.

(iii) Ho3: There is no significant effect of play-based learning and age on children's physical skills development in Asa Local Government Area of Kwara State.

(iv) Ho4: There is no significant effect of play-based learning, gender, and age on children's physical skills development in Asa Local Government Area of Kwara State.

2. METHOD

This study used a pre-test post-test quasi-experimental design with a control group. The experimental group received play-based learning interventions designed to enhance physical skill development, while the control group received traditional teaching methods. The population for this study is all children in the Asa Local Government Area of Kwara Srare. This study engaged a sample of children aged 3 to 12 years old who attend public primary schools in ASA Local Government. A sample size of 80 children was used with 40 children in the experimental group and 40 children in the control group. Stratified random sampling was used to select the participants. The communities were stratified based on their location (urban, rural) and size (small, medium, large), and then random sampling was used to select the desired communities. Physical skill development was measured using a rating scale that was administered as a pre-test and post-test for both the experimental and control groups with items indicating gender and age. The experimental group received a play-based learning intervention that was implemented for 12 weeks, twice a week, for 45 minutes each session. The intervention was designed to promote physical skill development and was used based on the principles of child-centered learning, creativity, and active engagement. Data were analyzed using inferential statistics. The mean scores of the pre-test and post-test were calculated for each group, and the differences in means were compared using ANCOVA. Before the study, informed consent was obtained from the parents and guardians of the children. Participants' anonymity and confidentiality were ensured throughout the study.

3. RESULTS AND DISCUSSION

3.1. Results from Hyphothesis 1 (Ho1)

Ho1 is no significant effect of play-based learning on children's physical skills development in Asa Local Government Area of Kwara State. **Table 1** shows the significant effect of play-based learning on children's physical skills development in the Asa Local Government Area of Kwara State. There was a significant main effect of play-based learning on children's physical skills development in Asa Local Government Area of Kwara State ($F(1; 79) = 25.8$, $P < 0.05$). The hypothesis is therefore rejected in light of the result since the significant value (.000) is less than 0.05. This implies that play-based learning had a significant effect on children's physical skills development in Asa Local Government Area of Kwara State

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Table 1. Summary of Analysis of Covariance (ANCOVA) showing the Main effect of play-based learning on children's physical skills development in Asa Local Government Area of Kwara State.

Source	Type III Sum of Squares	Df	Mean Square	F	Sig.
Corrected Model	18571.624[a]	12	1547.635	3.973	0.000
Intercept	26714.266	1	26714.266	68.581	0.000
Pre-test	1558.624	1	1558.624	4.001	0.050
Treatment	9887.016	1	9887.016	25.382	0.000
Treatment* gender	111.178	1	111.178	0.285	0.595
Treatment * age	426.338	2	213.169	0.547	0.581
Treatment * gender * age	49.677	2	24.839	0.064	0.938
Error	26098.326	67	389.527		
Total	254590.000	80			
Corrected Total	44669.950	79			
a. R Squared = .416 (Adjusted R Squared = .311)					

Table 2 shows that the difference between play-based learning and traditional approach is the cause of the significant main effect highlighted by **Table 1**. Lay-based learning is the experimental group, whereas the control group represents the traditional approach. This suggests that those exposed to play-based learning (65.85) acquired more physical skills than those exposed to the traditional method significantly (36.76).

Table 2. Summary of bonferroni's poc hoc pairwise comparison of the scores within the two groups.

Treatment	Mean Difference	Experimental	Control Group
Play Based Lea	65.85[a]	*	
Conventional Method	36.76[a]		*

3.2. Results from Hyphothesis 2 (Ho2)

Ho2 is no significant effect of play-based learning and gender on children's physical skills development in Asa Local Government Area of Kwara State. The effect of play-based learning and gender on children's physical skills development in Asa Local Government Area of Kwara State was shown by data in **Table 1**. The results demonstrate that play-based learning and gender had no combined effect on children's physical skills development in Asa Local Government Area of Kwara State ($F(1; 79) = 0.285$; $P > 0.05$). Because of the outcome, the hypothesis is therefore not ruled out because the significant value (.595) is higher than 0.05. This suggests that Play-based and gender did not significantly affect children's physical skills development in Asa Local Government Area of Kwara State.

3.3. Results from Hyphothesis 3 (Ho3)

The effect of play-based learning and age on children's physical skills development in Asa Local Government Area of Kwara State was shown by data in **Table 1**. The results demonstrate that play-based learning and age had no combined effect on children's physical skills development in Asa Local Government Area of Kwara State ($F(1; 79) = 0.547$; $P > 0.05$).

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Because of the outcome, the hypothesis is therefore not ruled out because the significant value (.581) is higher than 0.05. This suggests that Play-based and age did not significantly affect children's physical skills development in Asa Local Government Area of Kwara State.

3.4. Results from Hyphothesis 4 (Ho4)

Ho4 is no significant effect of play-based learning, gender, and age on children's physical skills development in Asa Local Government Area of Kwara State. The effect of play-based learning gender, and age on children's physical skills development in Asa Local Government Area of Kwara State, was shown by data in **Table 1**. The results demonstrate that play-based learning, age, and gender had no combined effect on children's physical skills development in Asa Local Government Area of Kwara State ($F (1; 79) = 0.064$; $P > 0.05$). Because of the outcome, the hypothesis is therefore not ruled out because the significant value (.938) is higher than 0.05. This suggests that Play-based, gender, and age did not significantly affect children's physical skills development in the Asa Local Government Area of Kwara State.

3.5. Discussion Findings

The major finding of this study is that there was a significant main effect of play-based learning on children's physical skills development in Asa Local Government Area of Kwara State ($F (1; 79) = 25.8$, $P< 0.05$). this finding supports the work of Stodden and colleagues (2008) study that found structured physical activity programs, which included play-based activities, to improve motor skills among children aged 3 to 6 years old. Another study by Sallis and McKenzie (1991) found that play-based physical activity interventions in schools led to significant improvements in children's physical fitness and motor skills. Furthermore, a systematic review by Durlak and colleagues (2010) found that play-based learning interventions, particularly those focused on physical activity, were effective in improving various outcomes among young children, including physical health and motor skills. However, this finding is not in agreement with the work of Pellegrini and Smith (1998) which found that a play-based physical activity program did not affect the motor skills of preschool children this may be a result of little knowledge at the time.

This study also revealed that play-based learning and gender had no combined effect on children's physical skills development in the Asa Local Government Area of Kwara State. This is in line with the finding is a study by Piek *et al*. (2008), which found that gender does not have a significant effect on physical skills development in children. The study found that boys and girls have similar levels of physical skills and that any differences can be attributed to individual differences rather than gender. This finding is in contradiction with the finding Barnett *et al*. (2008) found that gender does affect physical skills development in children, with boys performing better than girls on tasks such as throwing and catching. The study also found that play-based learning can have positive effects on physical development, but the effects were stronger for boys than for girls.

Another finding of this study is that play-based learning and age had no combined effect on children's physical skills development is an interesting one. While it may seem counterintuitive that age would not play a role in physical skills development, research has shown that the quality of the play experiences and the types of activities provided to children during play can be more important than their chronological age. One study by Stagnitti and Rodger (2012) examined the effects of play-based occupational therapy on the physical skills development of 5- and 6-year-old children. The results showed that the children who participated in the play-based therapy showed significant improvements in their physical skills, including balance, coordination, and fine motor skills. On the other hand, some studies

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have found no significant relationship between play-based learning and physical skills development in young children. For example, a study by Mandigo *et al*. (2013) examined the effects of a play-based physical activity program on the motor development of 4- and 5-year-old children. The results showed that while the program had some positive effects on the children's physical activity levels, it did not significantly improve their motor development. Equally, this study revealed that play-based learning, age, and gender had no combined effect on children's physical skills development in the Asa Local Government Area of Kwara State.

4. CONCLUSION

In conclusion, the finding that play-based learning has a significant effect on children's physical skills development in Asa Local Government Area of Kwara State is consistent with a lot of studies, and some studies have found gender and age-related differences in physical skills development. Based on this study, it is recommended that further research be conducted on the impact of play-based learning interventions on physical skills development in children of different ages and genders, using larger sample sizes and longer intervention durations. This would help further clarify the role of play-based learning in promoting physical skills development in children and provide more conclusive evidence to guide future educational policies and interventions. Moreover, educators and caregivers should incorporate play-based learning interventions into early childhood education programs to enhance children's physical development. Play-based learning provides a fun and engaging way for children to develop their physical skills, such as balance, coordination, and strength, which are critical for healthy growth and development. Therefore, it is crucial to support and encourage the use of play-based learning interventions in educational settings to promote physical development in children.

5. AUTHORS' NOTE

The authors declare that there is no conflict of interest regarding the publication of this article. The authors confirmed that the paper was free of plagiarism.

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