

Influence of Child Play on the Intellectual Development of Early Childhood Learners in Zambia

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ABSTRACT

As early as infancy, children immerse themselves in playful activities with the purpose of making sense of the world around them. However, their effort to achieve this is most frequently halted by parents, care givers and teachers who work around with them. The purpose of this study is to examine the influence of child play on the intellectual development of early childhood learners in Zambia by answering the three objectives which are; establish the effect of materials for play on children's intellectual development in Chongwe District establish how types of play affect children's intellectual development in Chongwe district and establish strategies how play-based teaching method can be enhanced to improve children academic performance. Using a mixed method approach the study found that management's strategies through rewards and recognition of teachers who used play as a teaching method were positively related to teacher's efficiency. Lack of experienced teachers was a main challenge in promoting play as a means of teaching. Songs and dances were other activities beneficial for learners in this study. Overall play was conducted in all the schools and materials were readily available and sufficient.

Keyword: Infancy, Intellectual, Play-based, Influence, Efficiency.

BACKGROUND OF THE STUDY

The early years of human life provide a unique opportunity for social and cognitive investment, but at the same time this is the most vulnerable period for all forms of stunting in academic performance. Froebel (1987) writing on children's play contends that, play is not only the children's natural occupation before constraints and formal schooling takes over but it also serves as a major means which children use to communicate to themselves and to the world around. Children's play and teachers' involvement in play activities have received recognition and attention by philosophers and educationist for centuries due to its major contribution on children's academic performance (Froebel, 1987). The Convention on The Rights of The Child Article number 31, together with The African Charter on The Rights and Welfare of The Child, Article XIII, clearly stipulate and require state parties to recognize and promote the right of children to engage in play (UNICEF, 2007). Play is considered work for young children. Emerging science has for decades shown the importance and complexity of working with young children from infancy through the early elementary years. Young children thrive when they have secure, positive relationships with adults who are knowledgeable about how to support their development and learning. Childcare or preschool education has been used as an intervention strategy to improve the lives and development of specific groups (Josephson & Chua, 2015).

The period of Early Childhood Care and Education (ECCE) refers to the care and education in the period between zero and eight years. Historically, such care and education have largely been informal, involving family, household and community members. The formalization of these emerged in the nineteenth century with the establishment of kindergartens for educational purposes and day nurseries for care in much of Europe and North America, Brazil, China, India, Jamaica and Mexico (Hoffman & Russ, 2019). According to Madondo (2020), "Sub-Saharan countries face challenges in enhancing the quality of Early Childhood Care Education (ECCED) include: 1) improving staff qualifications, education and competences; 2) recruitment; 3)

professional development; 4) staff evaluation and monitoring; and 5) working conditions and retention.” Developing nations may have other challenges in addition to the list, such as lack of appropriate infrastructure, inadequate learning and teaching materials, long distances between schools and homes, illiteracy among parents, poor health conditions, among others. Studies in developing countries, however, show that ECCED programs lead to higher levels of primary school enrolment and educational performance, which in turn positively affect employment opportunities later in life. On the contrary, children who start school late and lack the necessary skills to be able to learn constructively are more likely to fall behind or drop out of school completely, often perpetuating a cycle of poverty. Early Childhood Education (ECE) in Zambia is popularly known as nursery schools and either privately run or the church ran. Welfare centres also operated some. Government leaders in Zambia acknowledged the importance of educating the children and in 1990, Zambia was a participant in the World Conference on Education for All held in Thailand where it was agreed to take the necessary steps to universalize primary education and reduce illiteracy before the end of the decade (Yoshikawa and Kabay, 2015).

Additionally, Zambia is among 190 countries that adopted the Millennium Development Goals and committed to meeting the goal of achieving Universal Primary Education by the year 2015. These two events provided an international backdrop for the development and expansion of Early Childhood Care and Education in Zambia and its potential impact on the quality of life for young children in the country (Ministry of Health, 2017)

The Day Nurseries Act of 1957 was the first innovative step towards the recognition of the importance of Early Childhood Education (ECE) in Zambia by the colonial government. This Act is still in effect and provides a legal backing for anyone capable of offering Early Childhood Education. Despite gaining independence in 1964, Zambia did not include Early Childhood Education in the mainstream education system. ECE was provided then, at the discretion of social welfare departments by local authorities, local communities, non-governmental organizations, private individuals and families (MOE, 2016).

In 1972 the Zambia Pre-school Association (ZPA) was created as an umbrella organization to look into issues of Early Childhood Education by managing nursery and pre-school matters in the country (UNICEF, 2020). Since then, the ZPA has broadened its mandate to include training of teachers in Early Childhood Education at certificate and diploma levels. It is worth noting that in the past and for many years, no single organization in Zambia was mandated with the responsibility of running the activities of Early Childhood Education. The local authorities merely maintained registers of all Early Childhood Centres within their localities without monitoring and evaluating their performance. Early childhood education was, in theory, viewed to be of great importance to the nation’s Ministry of Education (MoE). Currently, under the MoE, educational provision is guided by the national education policy document, *Educating Our Future*, which focuses on equitable access to quality education at all levels (MoE, 1996). The Fifth National Development Plan 2006-2010, a policy document outlining educational provision by the Ministry of Education in Zambia, defines Early Childhood Care, Development and Education as the level of education, both informal and formal, which a child from birth to age six undergoes prior to reaching the compulsory age (seven years) of entry into a primary or basic school (MoE, 2006). This policy document outlines critical strategies to develop a national Early Childhood Care, Development and Education curriculum framework as well as to produce and distribute teaching materials for early childhood learners (Zuilkowski; 2012). In 2004, Zambian early childhood education (ECE) programming was transferred from the Ministry of Local Government to the Ministry of General Education. Until 2014, private schools and churches offered ECE to the public at a fee. Following a national decree in 2014, the Government of the Republic of Zambia began enrolling ECE learners in centres attached to primary schools. Despite directives to create ECE centres within existing school infrastructure, enrolment levels remain low at 26.1 percent of potential ECE total enrollment figures (Ministry of General Education, 2017).

STATEMENT OF THE PROBLEM

Over the years in Zambia Play has been described as a vehicle for learning especially in early childhood. This implies that for effective learning, play must be incorporated in ECE programs. Since teachers are key determinants of the experiences that children are exposed to, it is necessary to ascertain that they embrace use of play as a teaching strategy in pre-primary.

Of note, is that access to early childhood education with a developed child play method of learning is low in Zambia, especially among vulnerable groups and remote areas. Only 17.3% of children enrolled in primary education, enjoyed any kind of child play in early childhood education. Moreover, the quality of child play in early childhood education is often substandard. Zambia needs good early childhood education and trained teachers to teach learners effectively and also to make sure that the developmental milestones are taken into consideration. In the past years, Pre-schools were operated by local communities (Welfare), NGOs and private individuals. In this way the relationship between child play by early childhood learners and their academic performance has never been explored so much in Zambia (United Nations, 2005).

Studies have shown that, at birth, a child's brain growth and development has reached 40%, and it rapidly grows and develops to 80% by the age of three (UNICEF, 2007). This implies that for the child to thrive and reach his full potential, it is crucial for teachers/caregivers to have proper knowledge and skills on how to harness children's play behavior to enhance both stimulation and smooth adaptability in teaching and learning activities. This in turn has an effect on their academic performance.

Contrary to the above statement some scholars have found a negative relationship between the use (s) of child play by teachers to enhance academic performance. Of note is that early childhood lays strong foundations for adulthood. Experiences, positive or negative, during this period have long-lasting effects. VVOB, one of the Government partners participated in the first National conference on early childhood education (ECE) held in Zambia at Mulungushi conference center from the 18th to 20th August 2014 with other stakeholders. Among the recommendations from the conference was "to promote play as a major method of teaching and learning by all ECE teachers in Zambia". (Lontia Chinkubala, VVOB Zambia 2014). It is for this reason that many early childhood centres have been built both in rural and urban areas. 80% of these early childhood centers now provide child play method as a way of enhancing their academic performance (CSO; 2015). The purpose of this paper therefore is to find the influence of child play in children's academic performance. The aim of this study is to examine the influence of child play on the academic performance of early childhood learners in Zambia by answering the following objectives,

1. Establish the effect of materials for play on children's intellectual development in Chongwe District.
2. Establish how types of play affect children's intellectual development in Chongwe district.
3. Establish play-based teaching methods that can enhance and improve children academic performance.

LITERATURE REVIEW

According to Lyabwene (2017) intellectual development refers to the growth of a child's ability to think and reason. It is about how individuals organize their minds, ideas and thoughts to make sense of the world they live in. Intellectual development refers here to the changes that occur, as a result of growth and experience, in a person's capacities for thinking, reasoning, relating, judging, conceptualizing, etc. In particular it concerns such changes in children. Children gain an understanding of size, shape, and texture through play. (Britto 2017)

Participating in children's play by teachers is important in helping children develop their academic performance. Kruse (2007) argues that by being a participant in the child's play, this allows the children to feel more comfortable. Getting down at the child's physical level, squatting, and kneeling, sitting or even lying down allows the child to be more open be the leader during play. This also builds a teacher-child relationship and also encourages children to describe their efforts, ideas, and products" (Kruse; 2007).

Academic performance of children is a key feature in education (Rono; 2013) It is the center around which the whole education system revolves Narad and Abdullah (2016) According to Abdullah 2016 academic performance is the knowledge gained which is assessed by marks by a teacher set by the students and the teachers to be achieved over a specific period of time which is assessed through continuous assessments and or examinations. Jona (2014) found that as children explore during play in the Reggio Emilia classroom setting,

they are able to create their own projects which encourages decision-making and choices based on what the child enjoys. This initiates cooperation and consultation of peers which in turn increases and strengthens. Children's academic performance as well as their desire to continue to keep learning (Edwards; 1998). When children initiate in play that they enjoy and desire, they are more likely to make those decisions repeatedly. If a child likes playing with trains one day, that next day, he is more likely to play with trains than to go to the blocks center.

White book (2003) cited that play is important for children's intellectual development and for children to bond. It gives a chance to connect with your child. As children grow, play helps them learn how to act in society. Parents need to make time to play with their children. You start to play when your child is an infant. When your baby starts to smile and you smile back, you are engaging in play. Play is directed by the child and the rewards come from within the child. Play is enjoyable and spontaneous. Play helps your child learn social and motor skills and cognitive thinking. (Miller & Almon; 2018)

Different scholars have different opinions on whether the numbers of teaching years have an influence on teachers' attitude and self-efficacy (Branyon, 2012; Ndegwa, 2015). A study by Aiken (1970) on whether experience influences teacher's attitude towards arithmetic revealed that experienced teachers had more positive attitude towards the subject than the less experienced teachers. Good and Brophy's (1990) opinion on the effect of experience on behavior asserted that people who are confident of their abilities will seek challenge while those who lack confidence will avoid it. A study by White book (2003) cited that lack of teachers who had experience was one of the challenges related to child play in many countries. Another study by (Sifuna; 2017) found that lack of materials that are used in child play was a major hindrance in implementing child play. Kinuthia (2019) focused on teachers' motivation and found that lack of motivated teachers remained a hindrance in child play and its effect to children academic performance.

CONCEPTUAL FRAMEWORK

A conceptual framework is a tool that illustrates ideas that are positioned within a rational and successive strategy. It is built on specific ideas and plans resulting from experimental observation and perception. A conceptual framework is important to have because it gives a guide to the presentation of research queries and findings. (Dennis, 2019)

The word *play* is usually used to describe the activities for children from babyhood until the early teenage years. There is no definite definition that will cover all the meanings given by parents or teachers, however Play includes a range of self-chosen activities, undertaken for their own interest, learning, enjoyment and the satisfaction that results for children. (Sutherland & Friedman, 2013) Very young children, even babies, show playful behavior when they explore sound and simple actions and experiment with objects of interest. We focus our discussion on strategies, activities, benefits and challenges that influence child play in early childhood centers in Chongwe district of Zambia. The diagram below shows this relationship.



The conceptual framework above illustrates the interactions of activities that affect child play and further how

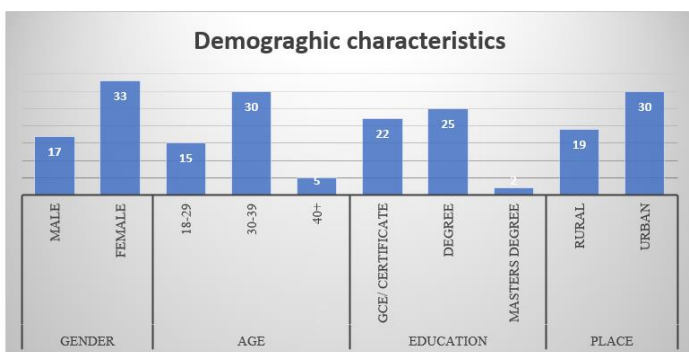
child play will affect the academic performance.

METHODOLOGY

This research used cross sectional data with both qualitative and quantitative approaches. Our study used a mixed approach to collect both qualitative data and quantitative data. A quantitative in nature research is an approach for testing objective theories by examining the relationship among variables. These variables, in turn, can be measured, typically on instruments, so that numbered data can be analysed using statistical procedures. (Brown, Durbin, and Evans,1975). To carry out the study, questionnaires, interview guides and class observations were used targeting teachers, those in administration and learners mainly for observation purposes. Stratified random sampling was used in selecting schools because it enabled the researcher to select from fifty four schools to be selected randomly from the Sample frame of all the schools in Chongwe District. From the 54 schools with early childhood education 54 teachers who teach early childhood programs were selected from the schools. The researcher used simple random sampling for the categories to determine the respondents among the early childhood schools. The questionnaires had two sections A and B. Section A comprising demographic information of respondents while Section B comprised of information on the influence of child play on the academic performance of early childhood learners in Chongwe District in Zambia. Data was mainly analysed using software’s such as Excel and SPSS.

PRESENTATION OF FINDINGS.

In this section we first present the demographic characteristics of the respondents in this study. We focus our interest on gender, age, education background and place of residents as these variables may have influence on the outcomes of early childhood learners in schools in Chongwe district. The table below shows that out of all the respondents 34 percent were males whereas those that were females were at 66 percent. The majority of the respondents in this study were from the age group 30-39 at 30 percent whereas those from 18-29 and those who were above 40 years were at 15 percent and 10 percent respectively. The findings from the table show that in terms of education the majority of the respondents had degrees at 50 percent while those that had GCE or certificates and those that had masters degrees where at 22 percent and 4 percent respectively. When we focus on the place of residents of the respondents the study found that majority of the respondents were from rural areas at 60 percent were as those that were from urban areas were at 38 percent.



DEMOGRAPHIC CHARACTERISTICS

The diagram below presents the findings of the study in terms of the availability, usefulness and sufficiency of the play materials in schools to promote early child education and in turn develop their intellectual abilities. We find that the majority of respondents in the study disagreed that the availability of teaching materials using play method were not available with 55 percent of respondents noticing that there was lack of materials to promote play as a teaching method. However, 45 percent of the respondents noted that there was readily available resources that were used to promote play as a teaching method. The respondents noted that the materials available included in schools were balls, bottle tops, sticks, stones, blocks, charts, water, rolling pops, sand, boxes, maps, campus, and magnets. The results also show that the majority of the respondents did not see the materials in schools to be sufficient. 63 percent of the respondents disagreed that the materials in

schools were not sufficient. However, 60 percent of the respondents in this study agreed that the play materials as a strategy of enhancing child development were useful in improving performance of children in schools of Chongwe district.



The table below the strategies of management in promoting play as a means of teaching in schools. The study focussed four strategies used to promote child play which are; 1. Encouragements of teachers, recognition of teachers, rewards of teachers and the environment of schools. The results illustrate management encourages teachers to use play as a teaching method in most schools. 89 percent of the teachers interviewed in this study agreed that teachers were encouraged.

The results show that 57 percent of the respondents were not satisfied with the rewards given to promote child play. 89 percent of the respondents were satisfied with the environmental conditions that would encourage play as a means of teaching and we also find that 88 percent of the respondents were satisfied that management recognised teachers that used play as a teaching method. Overall we found that the efforts that management has put in place to promote play as a teaching method in schools in Chongwe district.

Management strategies in promoting play as a teaching method in Chongwe district			
	Yes	No	Total
Teachers encouragement	56	44	100
Recognition of teachers	88	12	100
Rewards	43	57	100
Environment	89	11	100

A cross tabulation table below shows the association of the sufficiency of materials and the type of schools in Chongwe district in terms of whether it is private or public institutions.

Compared to those in private schools the majority of those in public schools at 88 percent were satisfied with the play materials available in their schools were as those in private schools majority were not satisfied with the materials that were available at 15 20 percent not satisfied against only 12 percent of those that were satisfied. The results of the chi2 (0.000) show that the relationship between the two variables is significant.

	Sufficiency of play materials		
Type of school	YES	NO	Total
Public	88	80	85
Private	12	20	15
Total	100	100	100
Chi2 P-value 0.000			

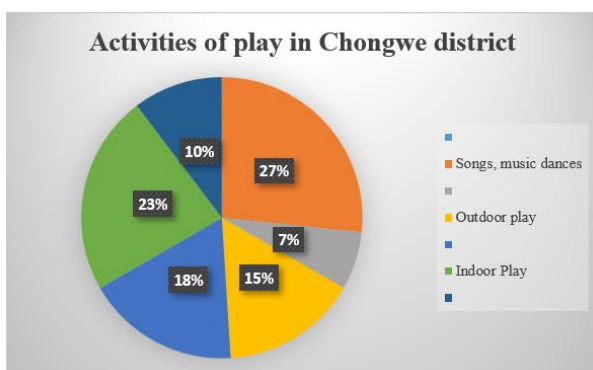
Cross Tabulation Between Type of School and Sufficiency of Materials in Schools

The association between the gender of a teacher and the usefulness of the available materials was tested in this study using the chi2 test. The results show that the females compared to males found the materials of play to be useful as compared to the males in this study. The table shows that for females 52 percent agreed that the materials were useful as compared to the males’ counterparts who were at 48 percent. Results suggest that females develop good relationships with children even with less materials. The chi2 p value of 0.004 shows that the association between the variables are significant.

	Usefulness of play materials		
Gender	YES	NO	Total
Males	48	23	37
Females	52	77	63
Total	100	100	100
Chi2 P-value 0.004			

Cross Tabulation Between Type of School and Sufficiency of Materials in Schools

The pie chart below illustrates the activities of play in Chongwe district and their consequent results in shaping intellectual development among early childhood learners in Chongwe district. Results show that majority of the teaches in Chongwe district relay so much on songs, music and dances in using play as a method of teaching at 27 percent compared to other methods employed. The results show that only 15 percent of the teachers in Chongwe district use outdoor play activities to enhance play as a teaching method. We also find that find that 18 percent of the early childhood learners in Chongwe district use indoor play activities to stimulate learning among the early childhood learners.



The table below presents the results on the association of experience of teachers with ECE and their effectiveness in teaching early childhood education for schools in Chongwe district. We find that compared to other teachers those that had 9 years and above of experience were more likely to be efficient with 18 percent

against 16 percent who were not efficient. We find that those with less experience in ECE were less likely to be effective in using play materials to promote intellectual development in children. The chi2 p-value of 0.002 show that the association between years of experience and effectiveness of play as a teaching methods on learners is significant given the p-value less than 0.005.

Efficiency of play	Years of experience teaching ECE				Total
	0-2	3-5	6-8	9 and above	
Yes	41	18	14	18	22
No	45	27	27	16	18
Total					
Chi2 P-value 0.002					

DISCUSSION OF RESULTS.

Our results found that the main strategy applied by management to enhance play as a teaching method in schools in Chongwe district is recognition of teachers who use play as a teaching method by rewarding them. The results show that 88 percent of the teachers that used play as a teaching method were recognised and rewarded. These findings are similar to the findings of Jones (2015) who conducted a research in Ghana to investigate the relationship between child play and academic performance and found that teacher’s participation in play makes learners to be comfortable in learning. In this way emphasis is made on making sure that teachers are encouraged and motivated to use play as a teaching method by recognising them and awarding them. Our results also found that the environment in which play as a teaching method is significantly associated with child intellectual development with 89 percent of the respondents agreeing that the environment in Chongwe district supports play as a teaching method.

The findings of this paper show a significant relationship between experience of teachers in ECE and efficiency in terms of delivering to expectations of learners. We find that the more experienced the teacher the higher the chances of them being effective. The presentation of results show that teachers with 9 years’ experience in teaching early childhood education were 0.18 percent more likely to be effective than those that had less than 9 years’ experience. However the study found that teachers with vast experience in teaching early childhood education were few in Chongwe district. The study found that only 5 teachers out of 54 had the necessary experience. Our study findings are similar to a study by Aiken (2008) on whether experience influences teacher’s attitude towards arithmetic revealed that experienced teachers had more positive attitude towards the subject than the less experienced teachers. Brophy’s (1990) opinion on the effect of experience on behaviour asserted that people who are confident of their abilities will seek challenge while those who lack confidence will avoid it. A study by White book (2003) cited that lack of teachers who had experience was one of the challenges related to child play in many countries. Another study by (Sifuna & Obonyo, 2017) found that lack of materials that are used in child play was a major hindrance in implementing child play. On the centrally a study done in Tanzania by Betram & Pascal, (2016) did not find any significant relationship between teachers experience and their effectiveness in using play as a teaching method to enhance learning through play.

Our results also found that the activities that were used in using play a method of teaching were mainly songs, music and dances which were conducted both indoors and outdoors. 27 percent of the activities comprised of songs which was the majority whereas those that involved outdoor activities comprised of 15 percent. Mainly the activities were done indoors at 23 percent. Overall the study finds those play activities that were in form of songs, music and dances to be very effective in delivering play as a teaching strategy.

CONCLUSION

Throughout this research, it is evident that play is significant in children’s development. Play is their job. They are learning when they play. It is how children learn about the world around them. Children are like sponges,

so every time they engage in play, they will learn something new. Play is an essential part of a well-rounded child. It increases the physical, cognitive, social, emotional, and linguistic abilities of children.

The impact of social play in a child's environment makes a difference in their life. The ability to regulate emotions is something that children learn from the beginning of their life. This is especially crucial during the preschool years because as children regulate their emotions, they are developing socially. Developing socially through regulating emotions also creates relationships.

As children play, they are interacting. At different ages, children are in different stages of play. The six stages of play help us to understand the interactions between peers and teachers. Peer interaction is a major factor in a child's social development. This interaction increases relationships because it enables children to create and develop feelings towards others. Play also increases the desire to have a relationship between children because children crave interaction.

Overall, play proves to be a crucial part of child development. Play is how children learn about the world. Play is necessary in school because it allows children to develop, think outside the box, and interact with others, just like they will have to their entire life. Play provides children with a basis to build relationships, explore their interests, and to find their most pure, authentic selves.

We recommend that the government through the Ministry of Education needs to come up with clear policy guidelines regarding play in pre and primary school centers and clearly define the play activities according to the developmental stages of children. Teachers also need to create more time for the pupils to be engaged on play materials. This would expose pupils to more activities indicated that exposing children to more time of play enables children use their hands, develop their eye-hand co-ordination as they usually concentrate carefully on what they are doing.

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