

INFLUENCE OF PLAY ON LEARNING DEVELOPMENT OF PRESCHOOL CHILDREN IN NGONG WARD, KAJIADO NORTH SUB COUNTY, KENYA

Priscah Mapemba Nyali and Boniface Njuguna Mwangi
Correspondent Author's Email: bkahuthu@gmail.com

Abstract

Most things that children need to learn are developed and practiced in play. The purpose of the study was to examine how play influences learning development of preschool children in Ngong Ward, Kajiado North Sub-County. The objectives of the study were to find out the influence of availability of play materials, establish the influence of teachers' perceptions on play and find out the influence of integrating play into teaching and learning on learning development of preschool children in Ngong Ward. The study employed the cognitive theory of play. The researcher adopted explanatory survey and correlational research designs to collect the data and answer research questions. The target population of this study was drawn from 79 pre-schools in Ngong Ward in Kajiado North Sub County. Twenty four schools were sampled to take part in this study. The respondents were the head teacher and a preschool teacher from each of the sampled schools. Data was gathered using structured questionnaires, observation schedules and interview schedules. Using test retest technique, teachers' questionnaire was found to have a reliability coefficient of 0.82. Data were analyzed using both descriptive and inferential statistics. It was found that most of the preschools in Ngong ward had the most basic play materials. However, most teachers' emphasized academic work and thus, the facilities were underutilized. The study found that independent variables contributed 72.6 % of variance in pupils' learning development ($R^2 = 0.726$). Integration of play into teaching and learning had the most significant relative influence to the prediction of pupils' learning development ($\beta = 0.526, p < 0.05$) followed by the availability of play materials ($\beta = 0.473, p < 0.05$) while the teachers' perception had the least and insignificant influence ($\beta = 0.294, p = 0.142$). The study recommends standardization of basic play material in preschools through ministry of education, and standardization on number of sessions teachers engage in learning on play during class activities.

Keywords: Early Childhood Play, Learning development, Preschool learners,

Introduction

According to Bose (2016) play refers to preschool activities which are enjoyed and for leisure rather than a serious or practical purpose. Learning development refers to changes occurring where a preschool child is growing and developing in the physically, cognitively and socio-emotionally (Eliason & Jenkins 2015). Play is very important for children's development and for learning life skills. Play is vital for children's development because it promotes language, physical, emotional and social development. As a child grows, play helps them learn how to act in society. There is existence of a relationship between play particularly symbolic, pretend play and the development of language skills (Lillard, 2013). It is a critical element of early childhood, curriculum and pedagogy development. In addition to being recognized as a vehicle for learning, play is described as a context in which children can demonstrate their own learning and help scaffold the learning of others (Woolkopf, 2004). Play is fun and self-motivated, and therefore anything learned during play is knowledge gained without the perception of hard work. According to Inzlicht (2014) this is in contrast with activities that are performed as duties. When learning is perceived to be arduous, our ability to stay focused may feel like a limited resource that is drained over time. According to Gray (2011) play helps children learn rules, make decisions, practice self-control, regulate their emotions, and cooperate with others. A study by Wathu (2017) contended that quality-learning environments support children's learning with a rich variety of materials that enable them to

explore and make discoveries. Wathu (2017) suggested that provision of play materials stimulates children's interest in the learning activities. Equipment, materials and experiences planned should allow for a variety of kinds of movement for development of motor skills, natural features such as horizontal tree trunks, rope structures and temporary arrangement for physical challenges broaden the possibilities for play activities (Oncu & Unluer, 2010).

Houghton (2014) notes research in Germany in the 1970s which showed that children in the fourth grade who had attended play-oriented kindergartens surpassed those from academic-oriented kindergartens in social, emotional, physical and mental development. The findings were so strong that Germany switched all its kindergartens to being play-oriented. Preschoolers in the United States have fewer opportunities for physical activities including play at child care (Tandon, Saelens & Christakis, 2015). Children have turned to electronic entertainment: videos, computers and television. Outside school hours, children spend three to five hours per day in front of screens. Kindergarten programs in the U.S. focus more on teaching numeracy, literacy, and other academic subjects that many children no longer have time to play.

In Malaysian context, the play-based approach has been emphasized in the pre-school curriculum and teachers are encouraged to adopt play-based activities in their teaching and learning process. According to Lohmander & Samuelsson (2015) today, play and learning activities are not separated in the new ECE curriculum in Sweden. Instead, the two are integrated. Play is often perceived and linked to being a prerequisite for learning. Play is seen as necessary for children to make sense of the surrounding world. This is a paradigm shift on new perspective on play and learning. According to Weldemariam (2014), pretend and imaginary plays are encouraged since they help in developing the children's imagination and conquering their surroundings. Some of the play activities which available in a playgroup or kindergarten included a play house with rag dolls, doll clothes, baskets, wooden cups and real cups.

Africa has a rich history of children's play which has been recorded and admired for long. Finnegan (2014) observes both the traditional and the current situations regarding child's play in the African continent, with conclusions drawn on a combination of documentary sources, oral tradition, ethnographic work and images. He notes that in contrast of what is often believed, the outcomes of play in Africa are serious as well as playful, songs for work comprising the lore of adult-generated lullabies, and the all-too-serious slogans and play of child soldiers in the horrific wars of recent times. The African Charter on the Rights and Welfare of the Child simultaneously recognizes the rights of children to play and protection from child labor and economic exploitation as well as emphasizing on the right to have responsibilities towards their families and society (Nguku, 2015).

In Kenya, the Ministry of Education syllabus for preschool outlines use of play and play materials by teachers during teaching and learning process (KICD, 2008). The schools should promote equal opportunity for girls, boys, and children with special needs in all aspects of play. However, there is a lot of learning in pre-school with more weight on academic achievement frustrating the learner time to play. Kombo and Khalayi (2011) posit that there is a growing concern among Kenyan pre-school practitioners that some of the ECDE programs have put more emphasis on academic performance at expense of child development. Mahindu (2011) found very little time was allocated for play among pre-school class; where majority of the schools allocated 30 minutes for children play. According to a study by Ojuondo (2015) various elements of play

such as availability of play materials, role of the teacher during play and school policy on play, have influence on language skills development among children.

In Ngong Ward, Kajiado North Sub-County, many schools do not have space for play in their classrooms and no field for outdoor play. Due to the fact that there are so many preschools, the emphasis has been on academics. The researcher therefore seeks to find out the influence of play on learning development of preschool children in Ngong ward, Kajiado North Sub- County.

Objectives of the Study

The study was guided by the following objectives:

- i. To find out the influence of availability of play materials on learning development of preschool children in Ngong ward in Kajiado North Sub-County.
- ii. To establish the influence of teachers' perceptions on play on learning development of preschool children in Ngong ward in Kajiado North Sub-County.
- iii. To find out the effect of integrating play into teaching and learning on learning development of preschool children in Ngong ward in Kajiado North Sub-County.

Null Hypotheses

The following null hypotheses were formulated:

H₀₁: Availability of play materials has no significant influence on learning development of preschool children in Ngong ward in Kajiado North Sub-County.

H₀₂: Teachers' perceptions have no significant influence on learning development of preschool children in Ngong ward in Kajiado North Sub-County.

H₀₃: Integration of play into teaching and learning has no significant influence on learning development of preschool children in Ngong ward in Kajiado North Sub County.

Methodology

The study adopted explanatory survey and correlational research designs. Explanatory research ascertains any contributing relations between the factors or variables pertaining to the study problem. Creswell (2014) states that explanatory survey design seeks to describe "how and why" to search inter-relationship and possible similar links among the study variables. Correlation research design uses inferences to explain relationships among variables systematically and emphatically without direct control of independent Variables (Orodho, 2012). This hybrid design was found appropriate in this study since apart from seeking opinion, attitude and knowledge about the issue at hand, the study also sought to establish the degree to which each independent variable influences the dependent variable. The target population was drawn from 79 primary schools in Ngong ward in Kajiado North Sub-County from which 24 schools representing 30% were sampled for this study. Through simple random sampling one preschool teacher from each school was selected while the 24 head teachers from the sampled schools were involved in the study.

Results and Analysis

Out of the sampled 24 preschool teachers and 24 head teachers, 22 teachers filled and returned the questionnaires while all the 24 head teachers were interviewed posting a return rate of a response

rate of 91.7 % and 100% respectively. Babbie (2014) postulates that a response rate of more than 70 per cent is considered sufficient for a study. The study findings showed that, only five teachers (22.7 %) were male while 17 (77.3 %) were females implying that there was a notable gender inequality in staffing at preschool level in Ngong ward. Most of teachers reported to have attained a certificate (50.0%) as the highest level of qualification. 22.7% reported to have a diploma as their highest level of education while 27.3% had attained KCSE as their highest level of education.

Availability of Play Materials in Pre-Schools in Ngong Ward

The first objective of this study was to determine the availability of play material in pre-school in Ngong Division. The study found that there were play materials in most of schools. Figure 1 shows that there were swings in all the sampled preschools in Ngong Ward. The study also found tyres were common in most schools as implied by 90.9% of schools represented in this study. This was closely followed by ropes which were in 81.8% of the schools studied. Other play materials such as utensils, clothes and food were found in approximately 50% of schools while blocks, slides and plasticine were found in less than 50% of schools studied, with slides only in 18.2% of schools studied.

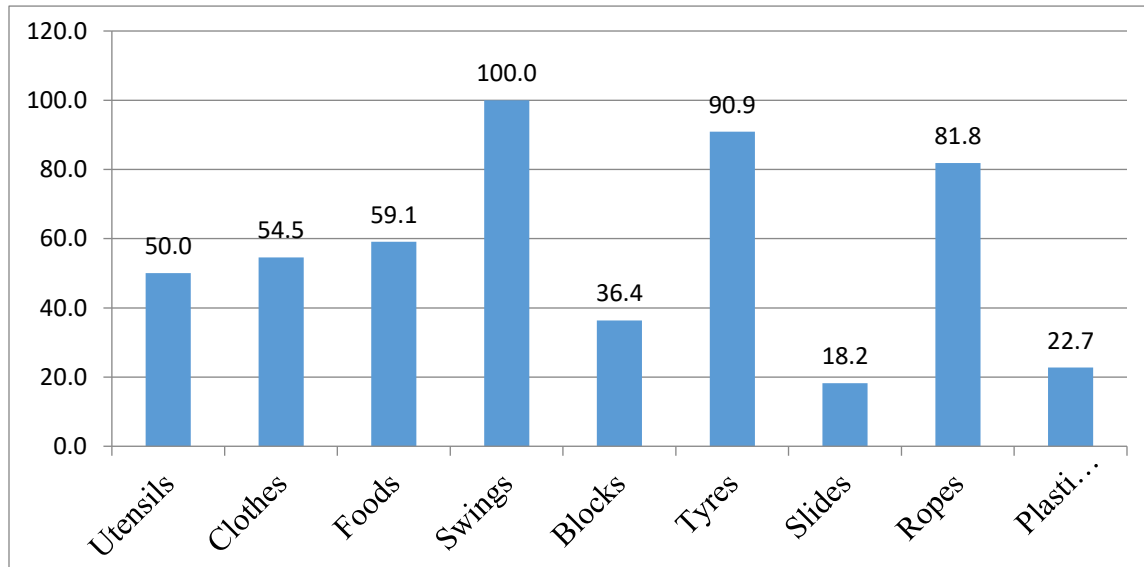


Figure 1: Availability of Play Materials

Teacher's Perception on Play Materials in Ngong Ward

The third objective analyzed in this study was teachers' perception on play and play materials and its influence on learning development. Study used five likert scale to rate teachers' perception on play and play materials. Table 2 depicts the summarized analysis.

Table 2: Teacher's Perception on Play Materials

	Neutral		Agree		Strongly Agree		Mean	Std. Dev
Play prevents obesity	11	50	9	40.9	2	9.1	3.59	0.666
Play promotes decision-making skills	0	0	9	40.9	13	59.1	4.59	0.503
Play improves children's mood	0	0	6	35.3	11	64.7	4.65	0.493
Play enhances creativity and imagination	3	15	15	75	2	10	3.95	0.51
Play helps children to understand and respect nature	2	9.1	15	68.2	5	22.7	4.14	0.56
Play gives children opportunity to use surplus energy	3	13.6	11	50	8	36.4	4.23	0.685
Children learns how to interact more when they play	5	22.7	5	22.7	12	54.5	4.32	0.839

Play was perceived to prevent obesity as shown by mean of 3.59 which shows that teachers agreed with notion that play prevents obesity. Apart from prevention of obesity among children, teachers felt that Play promoted decision-making skills($M=4.59$, $SD=0.503$), improved children moods($M=4.65$, $SD=0.493$), enhances creativity and imagination($M=3.95$, $SD=0.510$), helped children to understand and respect nature($M=4.14$, $SD=0.560$), gives children opportunity to use surplus energy($M=4.23$, $SD=0.685$), and enhancement of child interaction skills as implied by a mean of 4.32 and standard deviation of 0.839 as shown in Table 2.

Integration of Play Materials in Learning among Preschools in Ngong Ward

Finally, the study sought to find out the integration of play material in learning of pupils in pre-school in Ngong Ward. The study used 5 level likert scale to measure integration of play materials in learning. Most of the teachers indicated that they had a high level of integration of play into various learning areas as evident by the high mean values in Table 3. Teachers integrated play when teaching life skills to help children understand better ($M=3.91$, $SD=0.294$). Teachers also integrated play while teaching science subjects to help promote child's decision-making skills ($M=4.45$, $SD=0.686$). Further, teachers integrated play in learning to help promote child's concentration in class ($M=4.23$, $SD=0.612$), in teaching Physical education to help promote child learning process, creativity and imagination ($M=4.41$, $SD=0.666$), in solving class problems to help in enhancement of child development ($M=4.41$, $SD=0.503$) and lastly involvement of children in choosing of appropriate play material for various games as implied by mean of 4.05 and standard deviation of 0.486.

Table 3: Integration of Play Materials in Learning Rating

	Neutral	Agree	Strongly Agree	Mean	Std. Dev
	%	%	%	Mean	Std. Dev
I integrate play when teaching life skills to help children to understand better	9.1	90.9	0	3.91	0.294
I Integrate play while teaching science subjects to promote child's decision-making skills.	10	35	55	4.45	0.686
I integrate play in learning to promote child's concentration in class.	9.1	59.1	31.8	4.23	0.612
I integrate play in teaching Physical education to promote in child learning process enhances creativity and imagination	9.1	40.9	50	4.41	0.666
I integrate play in solving class problems to enhance child development.	0	59.1	40.9	4.41	0.503
I involve children in choosing of appropriate play material for various games.	9.1	77.3	13.6	4.05	0.486

Learning Assessment among Pre-schools in Ngong Ward

In this section, the study employed observation method to assess learning development as a result of play. The study found various play material that were used by children during play sessions. In all cases during the observation children were being instructed by teacher. The observation was also done outside classroom. Teacher guided children on learning process through play. The study further found that all children enjoyed the play activities. Finally, the study tested the general children response to various developments as a result of introduction of play. These findings are presented in Table 4.

As evident in Table 4, play impacted language and emergent of literacy as implied by a mean of 4.2 and a standard deviation of 0.7164. Cognitive development was found to be good among the pupils who engaged into play ($M = 3.5$, $SD = 0.7164$). The study also found approaches to learning were good ($M = 3.7$, $SD = 1.040$). Play was also found to influence social emotional attributes of learners development ($M = 3.8$, $SD = 0.6708$) and motor development ($M = 3.4$, $SD = 0.9119$).

Table 4: Children Response to various Developments as a Result of Introduction of Play

	Very Good	Good	Acceptable	Poor	Mean	Std. Dev
	%	%	%		Mean	Std. Dev
Language and emergent literacy	40	45	15	0	4.2	0.716
Cognitive development	15	45	40	0	3.5	0.7164
Approaches to learning	25	30	30	15	3.7	1.04
Social-emotional development	10	45	45	0	3.8	0.6708
Motor development	35	20	45	0	3.4	0.9119

Hypotheses Testing

In order to ascertain both the composite and relative influence of the three independent variables in this study on the dependent variable (learning development of preschool children), multiple regression analysis was conducted. Each of the three variables (availability of play materials, teachers' perception and integration of play into teaching and learning) was hypothesized to be a predictor of dependent variable. The three null hypotheses were tested at 95% confidence level. Tables 5, 6 and 7 depict the summary of multiple regression analysis.

Table 5: Multiple Regression Model Summary

Model	R	R²	Adjusted R²	Standard error of the estimate
1	0.852	0.726	0.688	0.1972

Predictors: (constant), Availability of play materials, teachers' perception, integration of play into teaching and learning

Dependent variable: Learning development of preschool children

It was evident from Table 5, that there was a strong correlation between the observed values of dependent variable and the values of dependent variable predicted by the multiple regression model ($R = 0.852$). In other words, there was a strong correlation between the predicted and observed values of the preschool learning development. It can also be deduced from the value of R^2 in Table 5, that 72.6 % of variance in the preschool children learning development could be explained by the influence of availability of play materials, teachers' perception on play and integration of play into teaching and learning. Table 6 shows the analysis of variance output.

Table 6: Multiple Regression Model Significance (ANOVA)

	Model	Sum of Squares	df*	Mean Square	F	Sig.
1	Regression	27.631	3	9.210	48.347	0.006
	Residual	3.810	20	0.1905		
	Total	31.441	23			

The F -ratio in the ANOVA table tests whether the overall regression model is a good fit for the data. That is, the ANOVA shows whether the model, overall, results in a significantly good degree of prediction of the outcome variable. The table shows that the joint independent variables statistically significantly predict the dependent variable, $F(3, 20) = 48.347$, $p < 0.05$ and that other variables not included in this model may have accounted for the remaining variance. In other words, the regression model was a good fit for the data. Table 6, depicts the model coefficients.

Table 6: Summary of Multiple Regression Model Coefficients

Model	Unstandardized Coefficients		Standardized Coefficients		t	Sig. value
	Beta	Std. Error	Beta			
1 (Constant)	.294	0.211			4.82	0.127
Availability of play materials	.521	0.144	0.487		4.73	0.014
Teachers' perception	.308	0.124	0.294		3.29	0.142
Integration of play into teaching and learning	.587	0.131	0.526		5.33	0.002

Dependent variable: Preschool Pupil's Learning Development

Table 6 reveals the relative contribution of the three independent variables to the dependent variable, expressed as beta weights. The regression model capturing the hypothesized relationship was given as: $Y = \beta_0 + \beta_1 x_1 + \beta_2 x_2 + \beta_3 x_3 + \varepsilon$ and where y = preschool pupils' learning development, x_1 = availability of play materials, x_2 = preschool teachers' perception towards play, x_3 = integration of teaching and learning while ε is the error term. Assuming the error term ε to be zero and substituting the unstandardized coefficients β values, the estimated multiple regression equation becomes: $y = 0.295 + 0.521 x_1 + 0.308 x_2 + 0.587 x_3$.

The β values indicate the individual contribution of each predictor to the model if the effects of all other predictors are held constant. In other words, the β values show the extent to which pupils' learning development is influenced by each predictor. Thus, when the availability of play materials increases positively by one unit, pupils' learning development increases by 0.521 units ($\beta = 0.521$) while holding the other factors constant. Similarly, when the teachers' perception increases positively by one unit, preschool children learning development increases by 0.308 units ($\beta = 0.308$) and so on.

In order to test the study's three formulated hypotheses, the t statistic that tests whether a B value is significantly different from zero ($H_0: \beta = 0$) is considered (refer to Table 6).

HO₁: Availability of play materials has no significant influence on learning development of preschool children in Ngong ward in Kajiado North Sub-County

As shown in Table 6, the unstandardized beta value for availability of play materials was significantly greater than zero ($\beta = 0.521$, $t = 4.73$, $p < 0.05$). Subsequently, the null hypothesis was rejected, hence, availability of play materials had a significant influence on preschool

children's learning development Ngong Ward. This implied that the EDCE centres which had invested in the various play materials enhanced learning development to a greater extent.

HO₂: Teachers' perceptions have no significant influence on learning development of preschool children in Ngong ward in Kajiado North Sub-County

In reference to Table 6, the unstandardized beta value for the teachers' perception towards children's play, was not significantly greater than zero ($\beta = 0.308$, $t = 3.29$, $p = 0.142$). Subsequently, the null hypothesis was retained, hence, teachers' perception had no significant influence on preschool pupils' learning development preschools in Ngong ward, Kajiado North Sub County. This implied that the teachers' perceptions towards children's play was not a major factor in pupils' learning development.

HO₃: Integration of play into teaching and learning has no significant influence on learning development of preschool children in Ngong ward in Kajiado North Sub County

Table 6 shows that the unstandardized beta value for the level of integration of play in teaching and learning was significantly greater than zero ($\beta = 0.587$, $t = 4.5.33$, $p < 0.05$). Subsequently, the null hypothesis was rejected, hence, integration of play in teaching and learning, had a significant influence on pupils' learning development.

Conclusions

Based on the study findings, the following conclusions were made:

1. Most of preschools in Ngong ward lacked adequate variety of play materials. However, most provided tyres, ropes, swings and slides. Most of the schools lacked adequate space for children play and thus thwarting the exploitation of the maximum potential in learning development. In some schools, the play facilities were found underutilized since teachers' utilized most time on academic matter.
2. Most of the preschool teachers' perception towards children play was positive, however, since teachers' preferred guided play, children creativity was limited leading to less learning development.
3. Most of the preschool teachers were able to integrate various forms of play in their teaching and learning and thus enhancing pupils learning development. However, due to time constraints, most teachers found challenges in incorporating meaningful play in their teaching.

Recommendations

The study recommended that:

1. Since Early Childhood Education (ECE) is a fundamental right to every child and an indispensable element for learning at the subsequent levels as the child goes through the education system, the County government should have a vote head in its budgetary allocation each year to not only remunerate teachers but also to provide teaching and learning materials. Parents and other stake holders can then be mobilized to cater for any deficit in the budget.
2. In order to enhance teachers' positive perceptions towards learners play, the head teachers should plan and sponsor teachers for in-service training. Bench marking with private and other

better schools should also be scheduled as a termly event. Teachers' motivation should be enhanced by exposing the teachers to new challenging methods and strategies of integrating play in teaching and learning.

3. From the findings of the study, the researcher recommends standardization of basic play material in preschools through ministry of education. The study also recommends standardization on number of sessions teachers engage in learning on play during class activities. Additionally, the researcher recommends that both private and public head teachers should undergo basic training to understand the importance of play materials in pre-school teaching.

References

- Bose, K., & Seetso, G. (2016). Science and mathematics teaching through local games in preschools of Botswana. *South African Journal of Childhood Education*, 6(2), 1-9.
- Creswell, J. W. (2014). Research design qualitative, quantitative, and mixed methods approaches (4th ed.). Thousand Oaks, CA: SAGE Publications
- Eliason, C. F., & Jenkins, L. T. (2015). *A practical guide to early childhood curriculum*. Pearson.
- Finnegan, R. (2014). Child play is serious: children's games, verbal art and survival in Africa. *International Journal of Play*, 3(3), 293-315.
- Lillard, A. S., Lerner, M. D., Hopkins, E. J., Dore, R. A., Smith, E. D., & Palmquist, C. M. (2013). The impact of pretend play on children's development: A review of the evidence. *Psychological Bulletin*, 139(1), 1.
- Lohmander, M. K., & Samuelsson, I. P. (2015). Play and learning in early childhood education in Sweden. *Psychology in Russia*, 8(2), 18.
- Houghton, C. (2014). Capturing the pupil voice of secondary gifted and talented students who had attended an enrichment programme in their infant school. *Gifted Education International*, 30(1), 33-46.
- Gray, P. (2011). The decline of play and the rise of psychopathology in children and adolescents. *American Journal of Play*, 3(4), 443-463.
- Inzlicht, M., Schmeichel, B. J., & Macrae, C. N. (2014). Why self-control seems (but may not be) limited. *Trends in Cognitive Sciences*, 18(3), 127-133.
- Kombo, K., & Khalayi, W. (2011). *Factors that Influence the quality and Relevance of ECE in Kenya* (Unpublished Doctoral Dissertation). University of Nairobi.
- Mahindu, J. W. (2011). *Influence of play on the development of preschool children's social skills in Kabete Zone, Kenya*. University of Nairobi, Kenya.

- Mokua, M. T. (2012). *Influence of teaching and learning materials on children performance in pre-schools in Borabu district, Nyamira County, Kenya* . University of Nairobi.
- Nguku, R. K. (2015). *Play and children's academic performance in Yatta Sub-county, Kenya*.
- Ojuondo, M. A. (2015). *Influence of play on development of language skills among preschool children in Kisumu central sub-county, Kenya*. University of Nairobi.
- Oncu, E. C., & Unluer, E. (2010). Preschool children's using of play materials creatively. *Procedia-Social and Behavioral Sciences*, 2(2), 4457-4461.
- Orodho, J. A. (2012). *Techniques of writing research proposals and reports in education and social sciences*. Nairobi: Kanezja Publishers.
- Tandon, P. S., Saelens, B. E., & Christakis, D. A. (2015). *Active play opportunities at child care. Pediatrics*, 135(6), 1425-1431.
- Wathu, W. M. (2017). Availability and use of play materials, and their influence on social and emotional development of pre-school children in Kyangwithya Zone, Kitui County. *International Journal of Asian Social Science*, 7(4): 278-283.
- Weldemariam, K. T. (2014). Cautionary tales on interrupting children's play: A study from Sweden. *Childhood Education*, 90(4), 265-271.
- Wool Kopf, A. (2004). *Educational psychology*. Delhi: Pearson Education Inc.