

Influence of Selected Play Types on Cognitive Development of ECDE Learners in Kisii South Sub-County, Kisii County, Kenya

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Abstract: Play is anything that is spontaneously done for its own sake; it appears purposeless, produces pleasure and joy, and leads one to the next stage of mastery. Play is a very important tool in holistic growth and development of children. Many experts agree that play provides the foundation for learning and later academic success of young children. Unfortunately due to the demands for accountability in pre-school and pressure to accelerate young children's academic learning, time for play is either being eliminated or limited. The ECDE centres in Kisii South Sub-County, either lack play materials completely or have few materials which are either overwhelmed by the enrolment of learners in the centres or are inappropriate. The purpose of study was to investigate how selected play types contributes to cognitive development of preschool learners in Kisii South Sub-County. The research objective was to find out the influence of parallel play on cognitive development of ECDE learners.

Methods: The study used Vygotsky theory of cognitive development. The study adopted a Concurrent Triangulation design within the mixed method approach. The target population comprised of 61 public ECDE centers, 61 public primary school head teachers, 126 public ECDE teachers, 2592 public ECDE learners and 1 sub County ECDE programme officer. A sample size of 18 ECDE centers, 18 public primary school head teachers, 38 ECDE teachers, 778 ECDE learners and 1 Kisii South Sub County ECDE programme officer was selected using stratified and simple random sampling techniques respectively. Data was collected using self-administered questionnaires, interviews guide and observation checklists. Validity of research instruments was ensured by expert judgement by university supervisors. Reliability of questionnaires was ensured by Cronchbar reliability test and a Cronchbar reliability coefficient of $r=0.7824$ was reported. Trustworthiness and authenticity of instruments was enhanced by use of multiple sources of information and member checking. Quantitative data was analyzed by descriptive statistics and inferential statistics such as Pearson correlation while qualitative data was analyzed by thematic framework.

Results: The study found that learners, who parallel play, learn quite a bit from one another like taking turns and that parallel play enabled often mimicking the other ones behaviour, hence good behaviours are passed across. Parallel play also helped children begin language development and through communication and interaction, the learners develop their language and communication skills. The study also found that through parallel play, learners increase their understanding of size, shape and texture. Based on the first hypothesis, the study concluded that there was a strong significant ($p < 0.05$) positive relationship between parallel play and cognitive development of preschool learners. This implies that, it was acceptable to conclude that there were significant positive association between parallel play and cognitive development among the preschool learners.

Conclusion: The study conclude that there was a strong significant ($n= 36$; $r = .627$; $p < 0.05$) positive relationship between parallel play and cognitive development of preschool learners.

Keywords: Cognitive development, parallel play, play types, ECDE learners.

1. INTRODUCTION

Background:

Play is crucial for a child as it is not only fun, but it is also important for cognitive development. It is their “work” and their way of learning about the world. In fact, play may function as important, If not crucial, mode for learning (Sutherland and Friedman, 2013). In 1964, Marion and her colleagues published an exciting paper about brain growth in rats. The neuroscientists had conducted a landmark experiment, raising some rats in boring, solitary area and others in exciting, toy-filled colonies. When researchers examined the rats’ brains they discovered that the “enriched”. Rats had thicker cerebral cortices than did the “impoverished” rats (Inzlicht, Schmeichel and Macrae, 2014). Bachsbaum, Bridgers, Skolnick Weisberg and Gopnik (2012) suggested that studied report that kids who engage in frequent parallel play have stranger self-regulation skills (impulses, emotions and attention). All around the world, children engage in parallel play that stimulates the sorts of activities they will need to master as adults and when kids are fed information during dramatic play from knowledgeable peers or adults they take it in (Bachsbaum, Bridgers, Skolnick Weisberg and Gopnik 2012). Myers (2012) identified the following play ideas to support pre-schoolers’ cognitive development: children at play are problem – solving, creating, experimenting, thinking and learning all the time also suggested that play is the ‘child’s work’, therefore it sum up the importance of play to pre-schooler’s thinking and learning – that is his cognitive development.

Moss (2012) suggested that learning by doing is best at preschool age; pre-schoolers will learn faster if the teacher step back and provide encouragement and support from the side-lines. Moss identified the following play ideas which preschool teacher will use to support pre-schoolers cognitive development: offer challenging puzzles, Play broad games together, Read books and tell jokes and riddles, Encourage play memory card games, Encourage building and construction games and do simple jigsaw puzzles together. The following skills should be encouraged by teachers when observed in play as they will be transferred to academic tasks later: curiosity, engagement, attention, problem solving, task completion, persistence, enthusiasm, reliability, time management, self-direction and initiative, ability to work independently, organization and planning, collaboration with others, risk-taking and persistence (Brostrom, 2011).

Goldstein and Winner (2012) suggested that there is a substantial link between parallel play and brain development also noted that all learning – emotional, social, motor and cognitive– is accelerated, facilitated and fuelled by pleasures of play. Blair and Raver (2012) noted that preschool teachers should provide an opportunity for their learners for free play and that playground help to facilitate the child’s sensory impression and their cognitive development becomes expanded. Brostrom (2011) argues that play is how young children learn and assimilate new things into what they already know. Beck (2013) emphasized that learning materials should be carefully selected to enhance learning and discovery in early childhood education and pointed out that all stakeholders in preschool such as ECDE teachers, parents and school administration should participate in providing preschool with playground and play materials. Cooperative play sharpen problem solving and decision making, children can build mathematics skills such as comparing sizes (big verses small), matching numbers with objects, timing (does water or oil move faster), matching (same sizes and shapes) and classifying (buttons, beans and rice) and science skills such as cause and effect (what happens when I add water to sand?) and the state of matter (ice melts). Without realizing it, children grow into amateur scientists and even develop analysis skills (Beck, 2013). Simple associative play activities such as hide-and–seek games will help toddlers to use thinking and problem- solving skills (Brostrom, 2011).

Imenda (2012) found out the following cognitive benefits of play to pre-schoolers: dramatic play activities enhances children’s creativity and problem-solving, increases reading and writing activities, improve language and children who play out events in a story, have improved story comprehension and develop a stronger theory of mind, the understanding that others have different feelings, thoughts, views and beliefs. Nwachuku, Kingsley and Eleri (2015) suggested that the pupil’s attitude towards learners with special needs in Aba Abia state is negative but improved significantly after they were exposed to dramatic play exercise programme and bibliotherapy treatment. Kabali (2014) study indicated that home associative play based reading activities promoted the process of reading acquisition. Tarimo (2013) established the determinants of pre-primary schools teachers’ use of play as a teaching strategy in Mwanu District, in the Northern part of Tanzania. The study finding showed that 57.5% of the teachers used play as a teaching strategy whereas 42.5% did not use play as a teaching strategy indicating that about half of the respondents did not use play as a teaching strategy.

In Kenya, Sinyei (2012) reported that, parents, teachers and school managers are increasingly giving too much attention to excellent academic achievement in national examinations and confirmed that a lot of emphasis is now on rote learning and memorization to reproduce the learnt concepts without a clear understanding of the concepts learnt this practice has trickled down to the preschool institutions. Evidence of tense, dull, maladjusted and hype-active personalities have been noticed. Ochanda (2015) study found out that children were engaged in outdoor play with inadequate play equipment and without the supervision of teachers and repair or replacement of worn out play equipment was also lacking. Similarly Murundu, Okwara and Odongo (2014) also found out that; most teachers integrate relevant types of play activities except construct and manipulative play which seem to be; complicated, not interested and irrelevant to teaching and learning of young children. In addition Wangari (2011) also found out that inadequate outdoor play facilities hinder outdoor play activities. Similarly, Kerich and Okioma (2015) in Kisumu, Kenya found out that outdoor play environments did not accord opportunities for children's cognitive development.

Kisii South Sub-County ECDE programme officer (2016) suggested that many pre-schoolers in Kisii South Sub-County are lagging behind in cognitive aspects such as creativity, imaginative skills, working memory, strong theory of mind, attention span, story comprehension, flexibility, logical thinking, cognitive exploration and self-regulation. This could be attributed to acute shortage of enough play, play materials, indoor and outdoor play facilities play time and play grounds in ECDE centers. Hence the present study was a follow up to this and the study selected one type of play which is the most commonly practiced in many preschools in Kisii South Sub-County Table

2. METHODOLOGY

The study used Lev Vygotsky's theory of cognitive development. The study adopted a Concurrent Triangulation design within the mixed method approach. The target population comprised of 61 public ECDE centers, 61 public primary school head teachers, 126 public ECDE teachers, 2592 public ECDE learners and 1 sub County ECDE programme officer. A sample size of 18 ECDE centers, 18 public primary school head teachers, 38 ECDE teachers, 778 ECDE learners and 1 Kisii South Sub County ECDE programme officer was selected using stratified and simple random sampling techniques respectively. Data was collected using self-administered questionnaires, interviews guide and observation checklists. Validity of research instruments was ensured by expert judgment by university supervisors. Reliability of questionnaires was ensured by Cronchbar reliability test and a Cronchbar reliability coefficient of $r=0.7824$ was reported. Trustworthiness and authenticity of instruments was enhanced by use of multiple sources of information and member checking. Quantitative data was analyzed by descriptive statistics and inferential statistics such as Pearson correlation while qualitative data was analyzed by thematic framework.

3. RESULTS

Socio-demographic characteristics of Respondents:

Table 3.1: Respondents Characteristics

Variables	Preschool Teachers (n=36)		Head Teacher (n=18)	
	F	%	F	%
Age				
18-25 years	06	16.67	00	00.0
26-35 years	17	47.22	00	00.0
36-45 years	10	27.78	07	38.9
46-50 years	01	2.78	09	50.0
Above 50 years	02	5.56	02	11.1
Gender				
Male	02	05.6	13	72.2
Female	34	88.9	05	27.8
Level of Education and Training				
KCSE certificate	04	11.11	00	00.0
ECDE certificate	15	41.67	00	00.0
ECDE Diploma	16	44.44	00	00.0

Bachelor's/Master's degree	01	2.78	18	100.0
Years of service				
Below 5 years	06	16.67	02	11.1
5-10 years	21	58.33	11	61.1
Above 10 years	09	25.00	05	27.8

The table 3.1 above depicts that most of the teachers in ECDE centres were between the age 26-35 years, as represented by 47.22%, those between 36-45 were between 27.78%, while preschool teachers with 25 years and below and above 50 years were indicated by 16.67% and 5.56% respectively. This shows that majority of the respondents (ECDE teachers) were in the middle age, either fresh from ECDE college or secondary. On head teachers, those within 36-45 years were 38.9%, while 46-50 years were 50.0%. This shows that most of the head teachers were above 45 years hence had well experience and were informative on the relationship between play type and cognitive development

The study also sought to find out the gender of the respondents (ECDE teachers and head teachers). Based on this, the study revealed that majority of the respondents was female at 88.9% while only 5.6% were males. This shows that most ECDE centres were managed by female teachers. On the contrary, based on head teachers, most of them were males at 72.2%, while females were only 27.8%. This shows that female gender was underrepresented in leadership position and there could be many factors that explain female ascendancy to leadership position.

It was imperative to determine level of education and training of the ECDE teachers as well as head teachers as this would affect their service quality and ability to understand the importance of play. Out of the 36 ECDE teachers that took part in the study, the study found that most of the ECDE teachers at 41.67% and 44.4% had ECDE certificate and ECDE diploma respectively. This shows that most of the preschool teachers were informative and well educated hence could provide adequate information on the role of play in cognitive development. The study also found that all the head teachers sampled had either bachelor degree education or masters, hence were also informative on the subject under study.

Influence of parallel play on cognitive development of preschool learners:

The study sought to find out influence of parallel play on cognitive development of preschool learners. This objective of the study was investigated by researcher through the use of a well-designed questionnaire, which explored the underlying characteristics of parallel play as the independent variable. The items of the questionnaire were related to acuties which were linked to parallel play. The preschool teachers' respondents were presented with statements that were Likert-scaled type of statements, in which they were to rate from 5-point score; Strongly Agree (SA), Agree (A), Neutral (N), Disagree (D) and Strongly Disagree (SD). The respondents were asked to score on each statement based on their personal judgment of the statement in respect to parallel play. From the pre-school teachers responses the researcher computed percentage frequencies of their responses on various items and was tabulated as shown in Tables 3.2.

Table 3. 2 Influence of parallel play on cognitive development of preschool learners:

Statement	SA	A	N	D	SD
Learners, who parallel play, learn quite a bit from one another like taking turns.	21(58.3%)	8(22.2%)	4(11.1%)	2(5.6%)	1(2.8%)
Parallel play enables often mimicking the other ones behaviour.	24(66.7%)	7 (19.4%)	2(5.6%)	1 (2.8%)	2(5.6%)
Parallel play helps children begin language development.	22 (61.1%)	11(30.6%)	1(2.8%)	2 (5.6%)	0(0.0%)
Learners increase their understanding of size, shape and texture through parallel play.	25 (69.4%)	9(25.0%)	1(2.8%)	0(0.0%)	1(2.8%)
Learners will understand relationships as they try to put a large object in a small space.	27 (75.0%)	6(16.7%)	2(5.6%)	1(2.8%)	0(0.0%)

This study found that majority of the respondents of about 80.5% agreed, while a minority of 8.4% disagreed, while only 11.1% were neutral that learners, who parallel play, learn quite a bit from one another like taking turns. The response from interview also indicated that parallel play enables the learners to learn from each other. A representation statement from one of the head teachers said;

From the age of 18 months to two years, children begin to play alongside other children without any interaction. This is called parallel play. Parallel play provides the toddler with opportunities for role-playing such as dressing up and pretending and this help in building or inculcating social development among the children and in the end, they develop cognitive skills [Head Teacher, 11].

This finding was also confirmed by observation when ECDE learners were noticed to be playing side by side in their own little world. It therefore shows that parallel play enable learners to learn from each other. This finding concur with Hoffman (2014) who also found that significant improvement in organization, imagination and effect expression in play for intervention compared to the control group as well as a significant interaction of time and group for divergent thinking.

On whether parallel plays encouraged imitation of one's behaviour, 86.1% agreed with the statement, 8.4% disagreed, while only 5.6% were neutral on the statement. Similarly, a response from the interview also indicated that parallel play promotes mimicking of one's behaviour. For instance one of the ECDE teachers said;

We're used to seeing children play and communicate with one another. But before this, they go through a stage where they don't interact yet play next to each other. They influence each other's behaviour. This phase starts from the age of 12 or 18 months and continues till at least the age of 3 years. Known as parallel play, it helps them gradually move from being solitary players to social players [ECDE teacher, 12]

This finding was also confirmed by observation made by the researcher, when he noticed that ECDE learners were playing parallel to each other and copying or imitating one another's' behaviour. This finding was in line with that of Youhne (2009) who investigated the positive benefits of play among and between young children in single-age and multi-age classrooms in South Korea. The result indicated that the two groups had similar views of the value of play on child behavioural development and believed it to be developmentally appropriate and a cultural learning process. It can therefore be inferred that parallel play was important for behaviour development of the preschool learner because good behaviours were passed across.

The study also found that majority of the respondents at 91.7% agreed that parallel play helps children begin language development, 5.6% disagreed with the statement, while only 2.8% were neutral on the statement. Similarly, representation statement from the interviews also indicated that parallel play helped the learners to develop his/her language. For instance, one of the head teachers said;

Parallel play is essential for a child's language development because it's an important step in learning how to interact with others. During parallel play in 18-month-old toddlers, you can see them shyly and slyly observe their companions and gradually start to imitate their peers [Head Teacher, 10]

This finding was also confirmed by observation made by the researcher, who noticed that learners were able to develop their language through parallel play. From these findings, it shows that parallel play helped children begin language development and through communication and interaction, the learners develop their language and communication skills. This finding concurs with that of Ye Yang (2013) who also found that play serves multiple functions which including recreation functions, learning functions, developmental functions, revelatory function, therapeutic function and class management function in the kindergarten practice.

It was also found that through parallel play, learners increase their understanding of size, shape and texture as indicated by majority of the respondents at 94.0%, while only 2.8% disagreed with the statement and another 2.8% were neutral with the statement. Another 91.7% of the respondents also agreed that through parallel play, learners would understand relationships as they try to put a large object in a small space, 2.8% disagreed with the statement, while only 5.6% were neutral about it. Qualitative response from the interviews also shows that parallel play boost learning of the environment and shape and texture of the play materials. A representative response from the ECDE program officer said;

Parallel play enables the learner to independently scrutinize their play materials such as toys and equipment and through this learners are able to know the physical characteristics of their play materials such as shape, size and texture. [ECDE program officer]

This finding shows that parallel play encouraged individual or independent learning among the ECDE learners. Similarly, Youhne (2009) also found that the value of play among the children is that it helps in developmentally appropriate and a cultural learning process.

Therefore, parallel play is beneficial to children involved in make-believe play because playing alongside other children encourage social interaction among the children, stimulate several types of learning, such as learning to understand the idea of property right such as “mine. This concurs with the findings of Ye Yang (2013) whose research findings revealed that parallel play serves multiple functions which including recreation functions, learning functions, developmental functions, revelatory function, therapeutic function and class management function in the kindergarten practice. However, Kerich and Okioma (2015) seemed to contradict these findings when they found that outdoor play environments did not accord opportunities for children’s cognitive development.

Research Hypothesis 1:

To establish whether there was any significant relationship between parallel play and cognitive development of preschool learners, the researcher computed Pearson’s Product-Moment Coefficient of correlation between the scores of the two variables.

Table 3.3: Correlations between parallel play and cognitive development of pre-schoolers

		Parallel play	Cognitive development
Parallel play	Pearson Correlation	1	.627**
	Sig. (2-tailed)		.000
	N	36	36
Cognitive development	Pearson Correlation	.627**	1
	Sig. (2-tailed)	.000	
	N	36	36

** . Correlation is significant at the 0.05 level (2-tailed).

Researcher’s Data, 2016

The analysis showed a strong significant ($n = 36$; $r = .627$; $p < 0.05$) positive relationship between parallel play and cognitive development of preschool learners, as indicated in the SPSS output shown in Table 4.4. This implies that, it was acceptable to conclude that there were significant positive association between parallel play and cognitive development among the preschool learners. This also means that an increase of parallel play would also mean increase in cognitive development of preschool learners. This resonates well with the generally held opinion that parallel play as shown by children playing the same activity or with similar materials besides each other encourages them to follow their own interests, improve on their working memory, cognitive flexibility and inhibitory control. These findings agree with the findings of Youhne (2009) who also found that the value of play among the children is that it helps in developmentally appropriate and a cultural learning process. Similarly, Nicolich (2008) found that play promotes cognitive development of learners since they remember things learned when they act or play over a concept.

4. CONCLUSION

The study concluded that there was a strong significant ($n = 36$; $r = .627$; $p < 0.05$) positive relationship between parallel play and cognitive development of ECDE learners.

REFERENCES

- [1] Beck, L., A. (2013). *Child Development* (8th Ed.). Boston, M. A: Ally and Bacon.
- [2] Blair, C., & Raver, C., C. (2012). Individual development and evolution: Experiential Canalization of self-regulation. *Developmental psychology*, 48,647-657 doi: 10. 1037/a 0026472.
- [3] Brostrom, S. (2011). Fiction, drawing and play in a Vygotskian perspective. In A. Tuna and J. Hayden (Eds.) *Early childhood programs as the doorway to social cohesion: application of Vygotsky's ideas from an East-West perspective*. Newcastle: Cambridge Scholars Publishing.
- [4] Imenda, G., M. (2012). *Promotion and benefits of play in foundation phase teaching and learning*. Zululand: Brookline.
- [5] Inzlicht, M., Schmeichel, B.J. & Macrae, C.N. (2014). Why self-control seems (but May not be) limited. *Trends in cognitive sciences*
- [6] Jent, J., F., Niec, L., N. & Baker, S., E. (2011). Play and interpersonal processes. In S. W. Russ and L., N. Niec (Eds.). *Play in clinical practice: Evidence-based approaches*. New York, NY: Guilford Press.
- [7] Kerich, M., E. & Okioma, L., M. (2015). Suitability of children's out Environment in city ECD centers for their cognitive development. *Journal of research and Methods in Education Volume 5, Issue 4 Ver. 1 (Jul-Aug. 2015)*. pp. 576I
- [8] Moss, S. (2012). *Natural childhood*. National Trust, UK.
- [9] Murundu, Z., O., Okwara, M., O., and Odongo, B., C. (2014). *Relevance of play Activities, Integrated in Early childhood Development and Education curriculum*. *Educational Research International*. Vol. 3 (6) pgs 264-287.
- [10] Myers, E. (2012). *A case study on the Actual Amounts of Time students in preschool and kindergarten Are playing at school on a Daily Basis, Compared to the recommended Time Amounts of play for students*. Unpublished Master Thesis, University of Arkansas.
- [11] Nicolich, J., (2008). *Music's influence on cognitive development*. Education Masters. Paper82. <http://fisherpub.Sjfc.Edu/Education-EDT-Master>
- [12] Ochanda, E., A. (2015). *Effect of play equipment on preschool children's participation in outdoor play activities in Suba East Division, Migori county*. Master's thesis, University of Nairobi, Kenya.
- [13] Sinyei, C., Mwonga J., and Wanyama M., N. (2012). *Dealing with the prevailing Attitudes and challenges for Effective Implementation of Early childhood Music and Movement curriculum in Eldoret Municipality, Kenya*. *Research Journal in organizational psychology and Educational studies*, (5) 295-302.
- [14] Tarimo, J., J. (2013). *Teachers' use of play as a teaching strategy in pre-primary Schools*. Unpublished Med thesis, Kenyatta University.
- [15] Wangari, N., M. (2011). *Factors hindering outdoor play in preschool in Makadara District-Nairobi County, Kenya*. Unpublished M.ed Thesis, University of Nairobi, Nairobi. Ye
- [16] Yang, Y., Y. (2013). *Teachers' Interpretation of play in Chinese Early childhood classrooms*. Unpublished Med thesis, The University of Warwick, UK.
- [17] Youhne, M, S. (2009) "examining play among young children in single –age and multi-age preschool classroom setting" .UNLV Theses/dissertations professional papers/capstones. Paper 5. <http://digital.scholarship.unlv.edu/theses/dissertations>.