
Play Facilities/Equipment and Teachers Use of Play-Way Method Teaching as Determinants of Psychomotor Skills Development of Nursery School Pupils

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ABSTRACT

This study was to assess play space and learning materials: a critical analysis of the psychomotor skill development in nursery school. Correlational research design was adopted for the study. The study was conducted in Uyo Education Zone of Akwa Ibom State. The population of the study consisted of the all the nursery 2 pupils and their teachers in all the public pre-primary schools in Uyo Education Zone. Stratified and simple random sampling technique was used in selecting 400 nurseries 2 pupils and 80 teachers which was drawn from Uyo Education Zone as at the time of the study. This gave a total of 480 sample size used for the study. The instrument used in this study for data collection was a questionnaire titled " Play Space and Learning Materials Questionnaire (PSLMQ)". Face and content validation of the instrument was carried out by an expert in testing, measurement, and evaluation to ensure that the instrument has the accuracy, appropriateness, and completeness for the study under consideration. The reliability coefficient obtained was 0.80, and this was high enough to justify the use of the instrument. The researcher subjected the data generated for this study to appropriate statistical techniques such as percentage analysis. The test for significance was done at 0.05 alpha levels. The study concluded that each of the variables, such as, play facilities/equipment, and teachers use of play-way method of instructions that nursery school pupils are exposed to significantly relate to the development of psychomotor skills of nursery school pupils in Uyo Education Zone. One of the recommendations made was that teachers should also adopt the use of play-way method of instruction as main method of instruction for nursery school as this will help in the development of psychomotor skills of nursery school pupils.

KEYWORDS: Play Space, Learning Materials, Psychomotor Skill and Development

Introduction

Participation of pupils in activities such as: running, colouring, climbing, building with wood blocks and legos, throwing and catching small balls, riding tricycles, are healthy characteristics of all young children. Play is central in the lives of normal growing children as it affects all aspects of their development. Gumusdag (2019) noted that the play experiences of

young children serve as the primary vehicle by which they learn about themselves and their environment. They show this in play and the use of play facilities and equipment. Ekanem (2008) stated that play materials are so significant in the development of motor skills and saw them as the most extrinsic factors. In fact, experts, e.g., Obinaju (2012) and Bergen (2014) in early childhood education, observed that many pupils attend school with enthusiasm with the hope that it would afford them the opportunity to play with their peers and to have the opportunity to make use of the play materials that abound. Children's play activities take place in an environment. The play environment of children serves as a "silent teacher" where useful learning experiences are acquired through movement and interaction with play materials.

Materials that are immovable are considered as facilities, such as the merry-go-rounds, slides, see-saw, ladder, tunnel, and swing, while moveable play materials such as balls, tricycles, rubber rackets, baskets, and mattresses are equipment (Ekanem, 2012). The pupils use the existing facilities and equipment for running, jumping, kicking, throwing and catching, climbing and skipping outside other creative movement. Pupils need these activities to develop gross motor skills, particularly in the area of muscular control and co-ordination. Abass (2010) observed that the most valuable movement experiences are gained when children are at play. Every child has unique and general qualities. This position enables the child to share and to select his play activities as well as play facilities. Be that as it may, experts believed not so much in the long list of materials (play facilities/equipment) but in those that were appropriate, interesting, and safe with maximum effect on all round development.

Statement of the Problem

However, in spite of these obvious benefits of motor development, which require that pupils be given ample opportunity within a safe limit to develop their motor ability, pupils' rights to motor activities seem to have been suppressed. Teachers avoid exposing children to motor activities due to a lack of knowledge in the field; they overemphasise the cognitive aspect of learning at the expense of overall learning, which includes the psychomotor domain, and a lack of knowledge of acceptable pedagogical skills for pre-school learning. The essence of early childhood education may be defeated if pupils are not given appropriate psychomotor experience.

Objective of the Study

1. Determine the relationship between play facilities/equipment and psychomotor skills development of nursery pupils.
2. Ascertain the relationship between teachers use of play-way method teaching and psychomotor skills development of nursery school pupils.

Research Questions

1. How do play facilities relate to psychomotor skills development of nursery school pupils?
2. What is the relationship between teachers' use of play-way method instruction and psychomotor skills development of nursery school pupils?

Research Hypotheses

1. Play facilities do not significantly relate to psychomotor skills development of nursery school pupils.
2. There is no significant relationship between teacher's use of play-way method of instruction and psychomotor skills development of nursery school pupils.

Literature Review

Play Facilities and Psychomotor Skills Development

Play facilities as used in this study subsume all the fixed and moveable play materials such as: swings, merry-go-round, tunnel and ladder tricycle, mats, small balls, etc. for use by the nursery school pupils. Movement is at the very heart of a child's life. The child uses play activities to learn about people and things. Obinaju (2011) observed that for the child, play and work are not opposites as it is often thought; rather, play for the child is a way of exploring and experimenting while gaining information about himself and his environment. The nursery school child has passed the period of infancy and is no longer immobilised by his inability to get up and move on his own. To gain a better understanding of the world around him, the child requires appropriate and adequate play facilities and equipment.

Udoh, Amusa and Agaede in Ekanem (2012) agreed with Inyon (2012) and Uyoata (2016) that the development of motor skills depends upon the variety, amount and intensity of participation of pupils in motor activities during the years of growth and the harnessing of varied play facilities and equipment to their advantage. Children cannot be separated from the use of materials during play activities. Gumusdag (2019) reported that even in a direct instruction type of programme, play usually involves the use of equipment to teach specific concepts. Play is directed by the nature of the equipment.

The absence of play facilities becomes a matter of necessity as children learn through all their senses. The school, having accepted the responsibility to educate the child, should be in a better position to provide adequate, appropriate equipment for pupils to interact with within the course of play. The author remarked that the environment, as the basis on which play facilities are provided, should invite the child to participate in activities. This would enable the child to acquire experience through which he may learn the joy of discovering, of exploring, of creating, of experimenting, and observing. This requires many types of facilities and equipment in a suitable space apart from enhancing his psychomotor skills development. However, the teacher should directly appropriate the amounts, the variety, and the timing for use by the pupils. The need for play facilities and equipment for children's play is emphasised by Yarmkaya and Ulucan (2015), who note that amount, durability, and verballity are very important. According to the authors, too little equipment leads to quarrelling and too much equipment forces the child to make decisions that are beyond him. Bucher (2008) observed that effective motor activities depend on the harmonious working together of the muscular and nervous systems. Efficient motor skills cannot be developed in a single lesson. It takes years to acquire coordination, and the most important period for development is during the formative years of a child's growth. It is at that stage that the child attempts to synchronise the muscular and nervous systems for such movements as crawling, walking, running, jumping, and climbing. Some of the equipment and facilities that can be included in the motor/physical play activities of a preschool can be small,

large, or fixed to the ground, and can be chosen based on the child's maturity level and interest. Yarmkaya and Ulucan (2015) provided valuable information on popular equipment. The authors directed that the equipment should be located where pupils can be supervised during play and placed far apart enough to prevent accidents.

These are:

- (i) **The jungle Gym:** It is the arrangement of strong metal pipes or wooden rungs. For outdoor use a metal gym is recommended. The distance between rungs of the gym should be such that the children using the gym can manage it.
- (ii) **The sand Area:** This should be large enough for children to get in. A minimum of 50 to 60m square feet of space is desirable. It should be covered when not in use to prevent dirt, refuse and animals from it.
- (iii) **Swings:** This requires good supervision by the teacher to prevent accident. Safer type of swing with canvas strip for the seat is recommended. For the four or five-year-old a swing may be made by attaching an old tyre (with holes punched to prevent accumulation of water) to the end of a strong rope, suspended from well-braced frames. The position of the swing should be placed so as not to be in line of traffic as the children run from one piece of equipment to another.
- (iv) **Slide:** A standard slide that is metal and rust proof with a safe climbing ladder is recommended. The height of the ladder and slide should be relation to the age of the children. The slide should be placed so that it can be easily supervised, yet not in line of traffic to and from other equipment.
- (v) **Merry go round:** This piece of equipment is popular with children but it requires close and careful supervision to ensure safety for those using it. The apparatus offers opportunity for pushing and running at the pre-primary level. Pupils need these activities to develop gross motor particularly in the area muscular control and co-ordination.

Participation in activities is a healthy characteristic of all young children. They show this in play and the use of play materials. Arnold in Obinaju (2011) stated that play materials are so important in the development of motor skills and saw them as the most extrinsic factor. Similarly, the author made the following suggestions on suitable facilities for pupils at home and in school.

- ❖ Old boxes with moveable board for running and jumping off and or sliding down;
- ❖ A low railing for climbing and balancing on;
- ❖ Balls to kick over and above these there might be added such things as swings for swinging, mats for romping and rolling and quoits for throwing and catching.

Experts believed not so much in a long list of facilities as in those that are appropriate, interesting, and safe, with the greatest effect on motor skill acquisition and, to a large extent, overall development. Leaper, Skipper, and Witherspoon in Ekanem (2008) remarked that although physical facilities do not determine the environment, satisfactory facilities greatly assist in developing a challenging and satisfactory learning situation.

In assessing the significance of play facilities on motor development, Iroegbu (2016) conducted a study to investigate play materials availability and utilization for development of gross and fine motor skills by pre-primary school children in Ogun State.

To find out the level of availability of play materials (facilities/equipment), the extent of use of those found and the relationship between availability and utilization of play materials and development of gross and fine motor skills of pre-primary school children. A purposive research design was adopted in data collection from 20 Early Childhood Education (ECE) centres in one senatorial district of a state in Nigeria. The instruments used for data collection were an inventory sheet as well as questionnaire for heads of centres, ECE teachers and pre-school children; the data analysis revealed that eleven different play materials were found in different quantities in the various establishments. Their utilizations also varied. The data revealed that three play materials were highly available in only three institutions. Five play items were moderately available in 9 centres while play materials availability was low at eight other centres. The daily utilization of the items was high for four play facilities; moderate for another five and low for three play materials. A high positive correlation ($r=0.762$, $p<0.006$, $R^2 = 58.1$) was obtained for availability and utilization of play facilities, 58 percent of the relationship between play facilities availability and utilization for gross and fine motor skills development was accounted for by the experiment. The author recommended that more play facilities (materials) should be provided in pre-primary schools since the children will make more use of those provided for their overall development.

Teachers' Use of Play-Way Method of Instruction and Development of Psychomotor Skills

The Play-way method of instruction, which is also referred to as Play-Based Learning (PBL), has gained currency as a recommended curriculum approach in a number of national early childhood education (ECE) contexts (Daniels & Pyle, 2018). The High/Scope Curriculum (2019) maintains that children learn and develop their bodies and minds through play, thereby experiencing the world around them. Lynch (2014) maintained that, because play seems to come naturally to children and their enjoyment of it is self-evident and spontaneous, it surely must be a natural way of integrating and exercising their curiosity, energy vitality, and capacity for learning in the widest sense. Play-based learning is to learn while playing and also teaches through the play-way method to children. Pyle et al. (2017) asserted that it is through play that much of the learning and preparation for a worthwhile life in a society is fostered. The authors further said that perseverance, honesty, integrity, hard work, obedience, enthusiasm, cooperation, teamwork, decision-making, and other group dynamics need to be evolved in the growing child gradually but steadily. Play is also a way of exploring the environment by children as they try to find out about the nature, characteristics, and behaviour of materials and what the situations offer them. Children's play activities are used as situations or foundations for learning. This therefore means that schools should, of necessity, provide natural materials like sand, pebbles, bottle corks, water, wood, etc. for children to gain information about the environment. This is so because children learn more and faster by doing through play. According to the High/scope curriculum (2019), children's curiosity is piqued as they explore their individual interests. The teacher's role, according to them, is that of a facilitator who observes and interacts with children. The teachers or facilitators, and even the parents, need to understand child development and to recognise the various signals of child development and growth, because growth and development complement one another from birth. This is why

Bergen (2014) maintains that child development is the basis for human development and that people grow and develop into adulthood as children.

This therefore points to the role of the play-way method in early childhood education as children learn better and faster through play and exploration of the environment around them. Learning through play situations, however, needs to be carefully structured and supervised by a teacher or an adult to ensure active involvement, progression, and benefit for the child. If not guided, the child may degenerate into mere play, harmful or wasteful activities without gaining anything from such play. In order to guide the child's learning through play methods, Ahupa and Ushie (2008) suggested various types of play methods such as musical experiences, movement and dance, creative or imaginative play, and discovery play activities.

Play is an important aspect of the growth process in the life of a child. Experts in child development hold the view that pupils who did not acquire the fundamental skills at an early stage in life are at a disadvantage when they are of school age. Play is central in a child's life and must have informed the Federal Government's decision in the National Policy on Education (2014) revised, that the main medium of instruction in early childhood education shall be through play. The play-way method of instruction as an instructional strategy is emphasised for pre-school education. Play as an instructional strategy can take different forms, such as role play, dramatic, constructive, creative, symbolic communication, physical/motor, cooperative play, etc.

Children of pre-school age engage in lots of physical activity. This process paves the way for good health, an understanding of their abilities and capabilities as well as their environment. While in an instructional atmosphere, pre-school children are expected to learn the contents through play, as it is accepted that there is no dull moment in nursery class. The pupils are expected to be in action so as to sustain their interest in the lesson and create an avenue for motor development. Play as the only acceptable method of instruction in an early childhood classroom is to lay a solid foundation for fundamental movements in children, thereby enhancing their overall development in cognitive, affective, and psychomotor domains. During play activities, no part of a child's life is idle. When instruction is given using play, the totality of the child is captured. The following happens, which helps in the motor skills development of children. Art and play expose children to different tactile experiences. They learn about the filling of wooden blocks, soft plushy toys, wet paints and many more art materials which children can harness to their advantage; play increases physical activity when compared to passive forms of instruction like watching the television, playing games on the Ipad or listening to the teacher talk without being active; children build muscle mass and coordination as they jump, climb, swing, run, dance, sing and move during play-based learning periods. Similarly, Wonderschool (2020) puts it that during play-based learning, children practise fine and gross motor skills, build muscles and coordination, and grow through a variety of tactile experiences.

Children are happiest when they are engrossed in play. That can happen in different forms, like playing with toys, playing outdoor games, hide-and-peek, or simply by running. Children improve their motor skills and enhance their imagination and creativity by playing. Playing enhances various aspects of a child's development, such as physical, social, psychological, and intellectual skills. Both gross and fine motor skills come under physical development. At preschool level, learning through play, or the play-way method, is a very popular methodology of

imparting education to children. The Play-way method is mostly "activity-based" or "Hands on Experience" learning. Children step out of their homes and familiar surroundings to learn among different people, which include their peers and teachers. Ramya (2019) agreed that a child's body development is influenced by physical activity. It provides opportunities for the movement of various parts of the body, which helps his or her muscular development. The blood circulates more freely when they are playing; this helps in the elimination of bodily wastes. The Play-way method of instruction helps the child to keep physically fit.

In a study conducted by Syafril et al. (2018) to see how to develop fine motor skills in early childhood using the play-way method. The study was conducted using a qualitative descriptive approach (multi-case single-site case study design) involving 2 teachers. Data were gathered through observation and interviews, and then thematically analysed using NVIVO 10 software. The results showed that fine motor skill development was carried out using the method of assignment in four ways: (i) providing tools and materials; (ii) providing direction and opportunities for practice; (iii) observing children individually and in groups; and (iv) evaluating their fine motor skill development on an ongoing basis. This study shows that these four ways can be used as alternatives in developing fine motor skills in early childhood. Hence, through play-way, children learn to co-operate and help each other while playing. Along with gaining knowledge, it inculcates various other skills in a child. It helps them connect with peers and teachers—easily facilitating the overall and holistic development of a child.

Methodology

Correlational research design was adopted for the study. The study was conducted in Uyo Education Zone of Akwa Ibom State. The population of the study consisted of the all the nursery 2 pupils and their teachers in all the public pre-primary schools in Uyo Education Zone. Stratified and simple random sampling technique was used in selecting 400 nurseries 2 pupils and 80 teachers which was drawn from Uyo Education Zone as at the time of the study. This gave a total of 480 sample size used for the study. The instrument used in this study for data collection was a questionnaire titled " Play Space and Learning Materials Questionnaire (PSLMQ)". Face and content validation of the instrument was carried out by an expert in testing, measurement, and evaluation to ensure that the instrument has the accuracy, appropriateness, and completeness for the study under consideration. The reliability coefficient obtained was 0.80, and this was high enough to justify the use of the instrument. The researcher subjected the data generated for this study to appropriate statistical techniques such as percentage analysis. The test for significance was done at 0.05 alpha levels.

Results

Research Questions

Research Question One: The research question sought to find out the relationship between play facilities/equipment's and psychomotor skills development of nursery school pupils. In order to answer the research question, descriptive analysis was performed on the data collected as shown in Table 1.

Table 1: Relationship between play facilities and psychomotor skills, N = 480

Variable	N	X	SD	r
Facilities	480	11.78	1.78	0.90
Psychomotor Skills	480	28.70	1.64	

Source: Field survey

Table 1 presents the result of the descriptive statistics of the relationship between play facilities and psychomotor skills development of nursery school pupils. The value of R of 0.90 indicated that there existed a positive above average relationship between play facilities and psychomotor skills development of pupils in Nursery school.

Research Question Two: The research question sought to find out the relationship between teachers' use of play-way method instruction and psychomotor skills development of nursery school pupils. In order to answer the research question, descriptive analysis was performed on the data collected as shown in Table 2.

Table 2: Relationship between play-way method of instruction and psychomotor skills N = 480

Variable	N	X	SD	r
Play-way method	480	16.70	1.64	0.78
Psychomotor Skills	480	28.70	1.64	

Source: Field survey

Table 2 presents the result of the descriptive statistics of the relationship between teachers' use of play-way method instruction and psychomotor skills development of nursery school pupils. The value of R of 0.78 indicated that there existed a positive (above average) relationship between play-way method of instruction and psychomotor skills development of pupils in Nursery school.

Hypotheses Testing

Hypothesis One: The null hypothesis states that there is no significant relationship between play facilities and psychomotor skills development of nursery school pupils. In order to test the hypothesis, two variables were identified as follows:

1. Play facilities as the independent variable
2. Psychomotor skills development of nursery school pupils as the dependent variable

Pearson Product Moment Correlation analysis was then used to analyze the data in order to determine the relationship between the two variables (see table 3)

Table 3: Pearson Product Moment Correlation Analysis of the relationship between play facilities and psychomotor skills development of nursery school pupils

Variable	$\sum x$	$\sum x^2$	$\sum xy$	Cal-r
	$\sum y$	$\sum y^2$		
Play Facilities (X)	7605	123391	186967	0.90*
Psychomotor Skills (Y)	11635	284951		

***Significant at 0.05 level; df =478; N =480; Critical r-value = 0.098**

Table 3 presents the obtained r-value as (0.90). This value was tested for significance by comparing it with the critical r-value (0.098) at 0.05 levels with 478 degree of freedom. The obtained r-value (0.90) was greater than the critical r-value (0.098). Hence, the result was significant. The result therefore means that there is significant relationship between play facilities/equipment and psychomotor skills development of nursery school pupils.

Hypothesis Two: The null hypothesis states that there is no significant relationship between teacher’s use of play-way method of instruction and psychomotor skills development of nursery school pupils. In order to test the hypothesis, two variables were identified as follows:

1. Teacher’s use of play-way method of instruction as the independent variable
2. Psychomotor skills development of nursery school pupils as the dependent variable

Pearson Product Moment Correlation analysis was then used to analyze the data in order to determine the relationship between the two variables (see table 4)

Table 4: Pearson Product Moment Correlation Analysis of the relationship between teacher’s use of play-way method of instruction and psychomotor skills development of nursery school pupils

Variable	$\sum x$	$\sum x^2$	$\sum xy$	Cal-r
	$\sum y$	$\sum y^2$		
Teacher’s use of Play-Way Method of Instruction (X)	7944	134642	174356	0.78*
Psychomotor Skills (Y)	11635	284951		

***Significant at 0.05 level; df =478; N =480; Critical r-value = 0.098**

Table 4 presents the obtained r-value as (0.78). This value was tested for significance by comparing it with the critical r-value (0.098) at 0.05 levels with 478 degree of freedom. The obtained r-value (0.78) was greater than the critical r-value (0.098). Hence, the result was significant. The result therefore means that there is significant relationship between teacher’s use of play-way method of instruction and psychomotor skills development of nursery school pupils.

Discussion of the Findings

The results of the data analyses in tables 1 and 3 indicate that there is a significant relationship between play facilities/equipment and psychomotor skills development of nursery school pupils. The result supports the findings of Udoh, Amusa and Agaede in Ekanem (2012) who agreed with Inyon (2012) and Uyoata (2016) that the development of motor skills depend upon the variety amount and intensity of participation of pupils in motor activity during the years of growth and harnessing of varied play facilities/equipment to their advantage. The nursery school child has passed the period of infancy and is no longer immobilized by his inability to get up and move on his own. To enable the child, acquire greater experiences of the world around him demands appropriate and adequate play facilities/equipment. Therefore, the significance of the result caused the null hypothesis to be rejected while the alternative was upheld.

The results of the data analyses in tables 2 and 4 also indicate that teachers use of play way method of instruction significantly relate to development of psychomotor skills development. This finding is in line with Anuna & Obi, (2011) that young children learned best through play and through handling materials objects rather than through books and didactic teaching. In line with this also is the enthronement of the play-way method of instruction as the main medium of instruction in Nursery school as enshrined in the National Policy of Education by the Federal Government (FRN, 2014). The significance of the result caused the null hypothesis to be rejected while the alternative was retained.

Conclusion

Based on the findings of this research work, it was concluded that there is a significant relationship between instructional resources variables and the psychomotor skills development of nursery school pupils. The study revealed that each of the variables, such as play facilities and equipment, and the teachers' use of the play-way method of instruction that nursery school pupils are exposed to significantly relate to the development of psychomotor skills of nursery school pupils in the Uyo Education Zone.

Recommendations

1. Teachers should also adopt the use of play-way method of instruction as main method of instruction for nursery school as this will help in the development of psychomotor skills of nursery school pupils.
2. Provision should be made in terms of learning materials for children to be physically engaged with their environment and enable them use their muscles and skills.
3. All necessary facilities should be made available in the school environment and good facilitators be employed so as to achieve the aim of psychomotor skills in nursery school.

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