



## Teaching Methods, Preschool Children Psychomotor and Cognitive Development in North Central Region of Nigeria

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### Abstract

This research study examines the teaching methods, psychomotor and cognitive development of preschool children in the North Central region of Nigeria. The study recognizes the critical importance of early childhood education and seeks to address various challenges and questions surrounding teaching methods and their impact on young learners. The research utilized an experimental design and focused on the preschool children and teachers within the educational zones of Kwara, Kogi, and Benue in the North Central region of Nigeria as the study population. The sample for this study comprised 288 respondents which included 18 teachers and 270 nursery two children in public and private preschools in the study area using multistage sampling technique. Initially, a Proportionate sampling technique was employed to choose 8 public and 10 private pre-schools. The data collection instrument utilized in the study was a questionnaire. Subsequently, the collected data underwent analysis through descriptive statistics. The results revealed that the cooperative method, inquiry method and questioning method were the most commonly used methods by preschool teachers in the study areas with a mean score of 2.45. Also, the level of preschool children's psychomotor development was on average (2.32), and their cognitive development was high (2.51). The study concluded that teaching methods had a positive influence on preschool children's psychomotor and cognitive development skills in the North Central region of Nigeria. Therefore, it was recommended that preschool teachers should strengthen their efforts on the use of cooperative methods, inquiry methods and questioning methods to enhance preschool children's psychomotor and cognitive development in the area under study.

**Keywords:** Teaching Methods, Psychomotor Development, Cognitive Development, Preschool Children

### Introduction

The cognitive and psychomotor development of young children is significantly influenced by preschool education. It is during these formative years that children acquire essential skills and knowledge that form the foundation for their future learning and development. In Nigeria, as in many other parts of the world, the quality of preschool education is a matter of great concern. The North Central region of Nigeria, like other regions, is grappling with challenges related to the effectiveness of teaching methods in preschools and their influence on children's psychomotor and cognitive development. A teaching method is any teaching manoeuvre that can be used to facilitate pupils learning and satisfaction. According to Abdulkamid, (2013), the teaching method is the overall plan for the orderly presentation of the content of learning materials. Usually, a method is driven by a philosophy or an assumption about how pupils learn in school. The

teaching method is, therefore, a general process the teacher adopts in presenting his/her lesson to the pupils, such that pupils learn based on assigning roles to individual pupils in the classroom.

In the early childhood education level, teaching is the process of attending to children's needs, experiences and feelings, and intervening so that, they learn particular things appropriately (Cowley, 2015). Adunola and Ayeni (2017) emphasized the necessity for effective teaching by asserting that teachers must possess a familiarity with various teaching methods that acknowledge the complexity of the concepts to be addressed. Their focus primarily centred on the correlation between teaching methods and the psychomotor/cognitive skills of preschool children, particularly the approaches employed by present-day preschool teachers in the education system. Different teaching methods can lead to the psychomotor and

cognitive development of preschool children, prominent among them are; role-play method, activity teaching method, teacher-centered methods, pupils-centered method, cognitive development methods, and psychomotor development teaching methods among others. Psychomotor and cognitive skills development is the beginning of the process of preschool children's education.

Certainly, the connection between cognitive functions and physical movement defines psychomotor development. This developmental aspect is evident through physical skills like movement, coordination, manipulation, dexterity, strength, and speed. These actions showcase fine motor skills, including the use of precision instruments or tools (Asonitou, Koutsouki, and Charitou, 2015). Similarly, cognitive skills serve as the fundamental abilities that the child's brain employs for activities such as thinking, reading, learning, remembering, reasoning, and maintaining attention. These skills collaborate to process incoming information, transferring it into the reservoir of knowledge that children utilize in their daily lives, both in school and beyond, as explained by Miquelote, Santos, Cacola, Montebelo, and Gabbard (2012). However, applications of different domains of cognitive development in preschool children help them to develop faster. As an example, the development of literacy holds crucial significance in the comprehensive growth of preschool children. It serves as the bedrock for success in academic endeavors, facilitates social interaction, and nurtures independence. For caregivers or preschool teachers, employing diverse teaching approaches from an early age is instrumental in establishing a strong literacy foundation. Additionally, this approach fosters bonding and cultivates positive relationships with the child (Apfel and Provence, 2013).

Invariably, According to Clara, Lorenz, and Stein (2014), training programs focusing on psychomotor and cognitive skills emphasize principles such as the appropriateness of exercise protocols, program flexibility, self-determination, the utilization of previous experiences, decision-making rights, and independence of action. These principles significantly impact the holistic development of preschool children, promoting the enhancement of their self-confidence and self-esteem (Zimmer, 2016). The positive outcomes attributed to psychomotor and cognitive skill education are supported by intervention studies, which link participation in such programs to improvements in motor skills (Kambas, Amoutzas, Makri, Gourgoulis & Antoniou, 2013).

In Nigeria, despite increasing recognition of the pedagogical value and practical relevance of psychomotor and cognitive skill education, the integration of research on these skills into the preschool curriculum remains limited. Moreover, there is a notable absence of studies examining the influence of early childhood education on the motor and cognitive skills development of preschool children. Ultimately, preschools in the North Central region of Nigeria exhibit a diverse range of teaching methods, varying from traditional didactic approaches to more contemporary child-centred methodologies. The effect of teaching methods in promoting psychomotor and cognitive development remains a pressing concern. This study aims to shed light on this matter by delving into the complexities and nuances of preschool education in the region.

### Statement of the Problem

In the North Central region of Nigeria, the preschool education system encounters numerous challenges, with one of the most crucial being the evaluation of teaching methods and their impact on the psychomotor and cognitive development of young children. The diversity of teaching methods employed in preschools across the North Central region warrants scrutiny. Disparities in access to quality preschool education are prevalent, with many children lacking access to appropriate learning environments. Assessing psychomotor and cognitive development in preschool children is complex. Ideally, no effective preschool education can exist without facilities and instructional resources. Preschool teachers complain of a lack of conducive learning environment and equipment to carry out their exercises on preschool children. The majority of preschool children experiencing poor learning outcomes are frequently associated with the use of ineffective teaching methods employed by educators to convey ideas, knowledge, and skills. It is crucial to investigate the enduring effects of preschool teaching methods on the cognitive and psychomotor development of children. Consequently, addressing these issues becomes imperative for elevating the quality of preschool education in the North Central region of Nigeria. Research in this domain has the potential to inform evidence-based policies and practices that support comprehensive development in preschool children, ensuring they are well-prepared for the educational challenges and opportunities that lie ahead. Regarding the aforementioned problems, this study seeks to examine the teaching methods, of



preschool children's psychomotor and cognitive development in the North Central Region of Nigeria.

### Justification of the Study

Preschool education is a critical period for laying the foundation for a child's cognitive and psychomotor development. Research in this area is vital as it directly impacts the quality of a child's future learning experiences and overall well-being. Disparities in access to quality preschool education are prevalent, especially in underserved regions like North Central Nigeria. Understanding the role of teaching methods can help identify strategies to reduce educational inequalities and provide all children with equal opportunities to thrive. This study can inform evidence-based policies and practices in preschool education. By identifying effective teaching methods, policymakers and educators can make informed decisions to enhance the quality of early childhood education in the region. Examining the correlation between teacher training and teaching methods can highlight areas for improvement in teacher education programs. This research can contribute to the professional development of preschool teachers in the region. Investigating the long-term impact of teaching methods on children's cognitive and psychomotor development can provide insights into how early education experiences influence academic success, career choices, and overall life outcomes. As the North Central region strives for educational excellence, evaluating teaching methods' effectiveness is essential for ensuring that educational resources are utilized optimally and that children are prepared for future educational challenges.

The findings of this study in the North Central region of Nigeria can contribute to the broader body of research on preschool education worldwide, facilitating cross-cultural comparisons and potentially offering valuable insights to educators and policymakers in other regions facing similar challenges. Parents play a vital role in preschool education. Understanding the impact of teaching methods can empower parents to make informed decisions about their children's education and be more actively involved in their early learning. In summary, this study is justified by its potential to contribute significantly to the improvement of preschool education in the North Central region of Nigeria. It addresses critical issues related to teaching methods, access to quality education, teacher training, and the long-term development of children. Ultimately, the outcomes of this research have the potential to

positively impact the lives of preschool children and shape the future of education in the region.

### Research Questions

The study addresses the following research questions:

1. What are the teaching methods commonly used by preschool teachers in the North central region of Nigeria?
2. What is the level of preschool children's psychomotor development skills in north central region?
3. What is the level of preschool children's cognitive development skills in North Central Region, Nigeria?

### Literature Review:

The teaching and learning process greatly relies on the pivotal role of a teacher who diligently adheres to the curriculum, ensuring that essential knowledge is imparted to students throughout the academic year. The primary objective of teaching, as highlighted by Tebabal and Kahssay (2011), is to instigate significant transformations in learners. In this context, a teaching method encompasses any strategic approach employed to facilitate learning and enhance student satisfaction. Ayeni (2012) emphasizes that teaching is an ongoing process aimed at eliciting positive changes in learners through the application of suitable methods. The integration of psychomotor and cognitive skills occurs in various motor activities, contributing to the acquisition and mastery of skills in preschool children. This method is indispensable for the comprehensive and uniform development of the child, serving as the foundational basis for learning, as noted by Barbosa (2012).

From a conceptual perspective, psychomotor and cognitive skills encompass every action undertaken by an individual, representing the dynamic interplay between the psyche and movements. This interaction seeks to foster holistic development, with a focus on affective, cognitive, and motor aspects, guiding individuals towards a heightened awareness of their bodies through movement. The progression of psychomotor and cognitive skill development unfolds as the child interacts with its environment, gradually acquiring capabilities to adapt to common necessities. This developmental conquest necessitates a conducive physical space, diverse materials, playful games, and an airy, pleasant environment, as emphasized by Sharma (2013).

Regarded as a science that explores movement,

psychomotor and cognitive skills serve as a means to foster comprehensive development, according to Wallon (2015), with a direct connection to affection and emotion. Wallon contends that various factors, including metabolic, morphological, psychosocial, psychomotor, and psychoemotional, contribute to the child's evolution, and any deficiency in one of these factors can lead to learning disabilities (Leboulch, 2013). The physical aspect of development encompasses motor and sensory skills essential for the child's survival and adaptation. During the early years of primary education, a notable characteristic of children is the compelling need to test their skills, particularly in terms of strength, agility, and enhanced control over their bodies. This phase is marked by children's enthusiasm to experiment with their bodies and acquire new skills, as highlighted by Ibe (2014). According to the study of Mundi (2006), the demonstration teaching method offers several advantages. It proves to be time-efficient and promotes material economy, capturing students' attention effectively and serving as a potent motivator during lesson delivery. Students benefit by receiving immediate feedback through their own practical applications. The method also provides a real-life context to the course of study, allowing students to acquire skills in authentic situations using tools and materials. Skilled teachers executing the demonstration method further enhance student motivation and exemplify appropriate approaches to tasks. As a result, the study indicates a significant positive impact of the demonstration method on students' academic performance. In alignment with these findings, Daluba (2013) emphasizes the importance of adopting activity-stimulating and student-centered approaches, such as the demonstration method, for enhanced psychomotor development in children. This approach stands in contrast to conventional methods like lecturing. Daluba's research reveals a statistically significant relationship between the use of the demonstration method and the psychomotor development of children, highlighting the method's effectiveness in fostering a more active and engaging learning environment. In the realm of teaching, it is crucial to acknowledge the distinctive attributes of individual learners, steering clear of the inclination to enforce standardized "mass production" norms that treat all students as if they were identical. Maryellen (2016) emphasizes the significance of teachers being familiar with their pupils, enabling them to choose teaching methods that empower learners to have control not only over their learning processes

but also to derive greater benefits from the overall teaching and learning experience. A study conducted by Felder and Dietz (2018) employed both control and experimental groups to evaluate the effectiveness of teaching techniques. Notably, the researchers, early in their study, opted to introduce a new learning tool to all students in the course, affording them the choice to utilize it. This strategic decision aimed to reduce variability and ensure a more consistent assessment of the impact of teaching techniques across the groups. Garcia and Pintrich (2015) have correlated the development of psychomotor and cognitive skills with heightened learning achievement. They assert that the participation of preschool children in such skill development not only enhances their motivation but also extends to improvements in their overall academic performance. According to their perspective, an effective teaching method is one that facilitates the acquisition of cognitive abilities. Talbert's (2015) research further supports the notion that effective teaching entails acquiring pertinent knowledge about students and utilizing this knowledge to shape course design and classroom instruction. In the context of effective teaching, instruction plays a crucial role. Hiebert and Grouws (2017) define instruction as the dynamic interactions among teachers, students, and content, all geared towards helping students attain their learning objectives. Recognizing the pivotal role of instruction, there is an emphasis on continual improvement through the integration of modern technologies in the teaching process.

### Research Methodology

For this study, an experimental design was utilized. The population under investigation encompasses a total of 38,654 teachers from three states: 12,112 in Kwara state educational zone (comprising both private and public schools), 10,520 in Benue state, and 16,022 teachers in Benue state. The selection of this population was accomplished through a multistage sampling technique. To ensure a comprehensive representation of pre-schools for the study, a proportionate sampling technique was employed, resulting in the selection of 8 public and 10 private pre-schools. Subsequently, a purposive sampling technique was utilized to choose teachers from the sampled schools. In addition, a simple random sampling technique was applied to select nursery two preschool children from both public and private schools in the three senatorial districts—Kwara, Kogi, and Benue educational zones. The data collection

instrument employed for this study was a questionnaire. The collected data underwent analysis using descriptive

statistics such as frequency counts, percentages, and mean scores.

## Results

**Table one: Table Showing the Teaching Methods Commonly Used by Preschool Teachers**

S/N	Teachers' Teaching Methods: The teacher always use:	Always	Sometimes	Never	Mean
1.	Teacher encourages students to think critically and respond with well thought answers (critical thinking).	7(38.9)	11(61.1)	0(0)	2.39
2	Teacher asks children inquiry questions (inquiry).	18(100)	0(0)	0(0)	3.00
3	Teacher challenges children to think bigger and connect the classroom to real world ideas and events (problem solving).	6(33.3)	12(66.7)	0(0)	2.33
4	Teacher asks the children to point out some answers from the text (questioning).	16(88.9)	2(11.1)	0(0)	2.89
5	Teacher asks children questions at various level of teaching (questioning).	15(83.3)	3(16.7)	0(0)	2.83
6	Teacher evaluates the children by moving from one child to another asking the text-related questions (differentiated instruction).	8(44.4)	8(44.4)	2(11.1)	2.33
7	Teacher creates room for children to debate on their favorite topics in class room (discussion).	3(16.7)	6(33.3)	9(50.0)	1.67
8	Teacher builds conducive atmosphere for quiz competition in the class (quiz and debate).	1(5.6)	11(61.1)	6(33.3)	1.72
9	Teacher motivates the children to work together on a topic in the classroom (cooperative).	16(88.9)	2(11.1)	0(0)	2.89
<b>Weighted Mean</b>		<b>2.45</b>			
Decision Rule: Low: 0.00 – 1.49 Average: 1.50 – 2.49		High: 2.50 – 3.00			

Table one shows the teaching methods commonly used by preschool teachers in the study area. The participants agreed to always use the following methods: Teacher asks (questioning) the children to point out some answers from the text (Mean = 2.89), Teacher asks children questions at various level of teaching “questioning” (Mean = 2.83), Teacher asks

children inquiry questions “inquiry” (Mean = 3.00), Teacher motivates the children to work together on a topic in the classroom “cooperative” (Mean = 2.89). while the participants also agreed to use the following methods only once in a while (sometimes): Teacher encourages students to think critically and respond with well-thought answers (critical thinking), Teacher



challenges children to think bigger and connect the classroom to real-world ideas and events (problem-solving), Teacher builds conducive atmosphere for quiz competition in the class (quiz and debate), Teacher creates room for children to debate on their favourite topics in classroom (discussion), Teacher evaluates the children by moving from one child to another asking the

text-related questions (differentiated instruction). The mean scores for the cooperative method, inquiry method and questioning method are high which are numeric indicators they are commonly used methods by preschool teachers in the public and private schools in Kwara, Kogi and Benue educational zones.

**Table 2: Table Showing the Level of Preschool Children Psychomotor Development Skills.**

S/N	The child is able to:	Always	Sometimes	Never	Mean
1	Recognize first name in print	156(56.9)	95(34.7)	23(8.4)	2.49
2	Recite the alphabets	62(22.6)	94(34.3)	118(43.1)	1.80
3	identify capital letters	213(77.7)	49(17.9)	12(4.4)	2.73
4	identify lower case letters	215(78.5)	46(16.8)	13(4.7)	2.74
5	say letter sound	189(69.0)	78(28.5)	7(2.6)	2.66
6	Sort objects by shape, color and size	102(37.2)	108(39.4)	64(23.4)	2.14
7	Match objects with their names	81(29.6)	168(61.3)	25(9.1)	2.20
8	Identify part of the body	223(81.4)	45(16.4)	6(2.2)	2.79
9	Hold pencil correctly	124(45.3)	134(48.9)	16(5.8)	2.39
10	Cut out shapes	90(32.8)	164(59.9)	20(7.3)	2.26
11	Trace shapes	115(42.0)	129(47.1)	30(10.9)	2.31
12	Identifies numbers	113(41.2)	137(50.0)	24(8.8)	2.32
13	Identifies shapes	115(42.0)	119(43.4)	40(14.6)	2.24
14	Arrange figures in ascending order.	24(8.8)	72(26.3)	178(65.0)	1.44
15	Arrange figures in descending order	150(54.7)	62(22.6)	62(22.6)	2.32
<b>Weighted Mean</b>		<b>2.32</b>			

Decision Rule: Low: 0.00 – 1.49 Average: 1.50 – 2.49

Table 2 shows the level of preschool children's psychomotor development skills in the North Central Region, Nigeria. The observed were able to always exhibit the following: identify capital letters, identify lower case letters, and say letter sounds. While they were able to exhibit the following sometimes: Recognize first names in print, Recite the alphabet, Match objects with their names, Sort objects by shape, colour and size, Arrange figures in descending order,

High: 2.50 – 3.00

Hold pencils correctly, Cut out shapes, Trace shapes, Identifies numbers, Identifies shapes, and Identify part of the body. However, the observed were not able to arrange figures in ascending order. The weighted mean is 2.32 which is a numeric indicator that the level of preschool children's psychomotor development in Kwara, Kogi and Benue educational zones was on the average based on data collected.

**Table 3: Table Showing the Level of Preschool Children's Cognitive Development Skill**

S/N	Teachers' Teaching Methods The child is able to:	Always	Sometimes	Never	Mean
1	Copy shapes such as square and triangle	146(53.3)	74(27.0)	54(19.7)	2.34
2	Use scissors to cut out picture	249(90.9)	22(8.0)	3(1.1)	2.90

3	Copy block letters	237(86.5)	32(11.7)	5(1.8)	2.85
4	Write letters	185(67.5)	84(30.7)	5(1.8)	2.66
5	Connect to dots	92(33.6)	178(65.0)	4(1.5)	2.32
6	Color between the lines	136(49.6)	130(47.4)	8(2.9)	2.47
7	Draw geometric shapes	175(63.9)	90(32.8)	9(3.3)	2.61
8	Trace alphabets	252(92.0)	19(6.9)	3(1.1)	2.91
9	Participate in game sports	113(41.2)	148(54.0)	13(4.7)	2.36
10	Throw and catch a ball	60(21.9)	123(44.9)	91(33.2)	1.89
11	Assemble and manipulate small objects	203(74.1)	61(22.3)	10(3.6)	2.70
12	Use fork to eat	233(85.0)	39(14.2)	2(0.7)	2.84
13	use pencil appropriately to write	206(75.2)	58(21.2)	10(3.6)	2.72
14	Pour water into a glass without spilling	104(38.0)	103(37.6)	67(24.5)	2.14
15	Draw figures that represent something.	58(21.2)	134(48.9)	82(29.9)	1.91
<b>Weighted Mean</b>		<b>2.51</b>			
Decision Rule: Low: 0.00 – 1.49		Average: 1.50 – 2.49		High: 2.50 – 3.00	

Table 3 shows the level of preschool children's cognitive development skills in the North Central Region, Nigeria. The observed were able to always exhibit the following: Use a fork to eat, use a pencil appropriately to write, Draw geometric shapes, Trace alphabets, Assemble and manipulate small objects, Use scissors to cut out pictures, Copy block letters, and Write letters. However, the observed were only able to exhibit the following sometimes: Copy shapes such, as square and triangle, Connect to dots, Color between the lines, Participate in game sports, Throw and catch a ball, Pour water into a glass without spilling, and Draw figures that represent something. The weighted mean is 2.51 which is a numeric indicator that the level of preschool children's cognitive development in Kwara, Kogi and Benue educational zone was on the high.

### Discussion of the Findings

The findings of this study revealed that the cooperative method, inquiry method and questioning method were the commonly used methods by preschool teachers in the three senatorial districts in the North Central region, Nigeria. Akinyide (2012) discovered that the utilization of the cooperative method, one of the instructional approaches employed by teachers for Turkish primary school students, was high. This finding aligns with the current study's results. The finding underscores the need for applications of various teaching methods in the classroom to bring about positive change in the preschoolers' learning process in the study area.

The result revealed that the level of preschool children's psychomotor development skills in the North-central zone was on average. The result concurs with Steinberg's (2013) discovery, indicating that a majority of children in urban primary schools in Ghana exhibited a moderate level of psychomotor development. Nevertheless, this study supports the view that preschool children's psychomotor and cognitive development skills need to be higher by the teachers' strategic appliances of various teaching methods in inculcating, knowledge in the learners in Nigeria and across the globe.

The result revealed that preschool children's cognitive development in the North Central region was on the high. The result aligns with the conclusion reached by Oduolowu and Atumba (2012), indicating that there was a high level of cognitive development and understanding skills among pupils in elementary schools. Therefore, the study believes that cognitive development skills of preschool children will always be achieved by teachers when they integrate different teaching methods to direct preschool children on how to; for instance, copy block letters, connect to dots, color between the lines, throw and catch a ball among others which are the properties for strategic teachers to support preschool children cognitive development skills at every level of Early childhood.

### Conclusion

Early learning could be quite an interesting and result-oriented venture. All that is essential is to adopt

the right methodology that best suits the specific objective and level of learning achievement of the learners at that level of education. As a result, the findings of this study imply preschool teachers. The implication of this study, borders on the development of teachers' usage of different teaching methods on psychomotor and cognitive development skills of preschool children in the North central region. The study revealed that teaching methods such as cooperative method, inquiry method and questioning method are preschool teachers' instruments used for learners to develop their psychomotor and cognitive development skills in the area under study. The result also shows average levels at which teaching methods are employed on the psychomotor skills of preschoolers, and the higher level at which cognitive development skills of preschool children were high. Therefore, the implication of the study is that preschool teachers should consider gender as a determinant of their regular use of teaching methods on preschool children's psychomotor and cognitive development skills in the study area. The study revealed that there are significant differences between preschool teachers' genders when using teaching methods. Indeed, female teachers often guide preschool children than male teachers. Therefore based on the result analysis, the conclusion was drawn that the teaching method has a positive influence on preschool children's psychomotor and cognitive development skills in the three (3) senatorial districts in Kwara, Kogi and Benue educational zones.

### Recommendations

Based on the findings of this study, the following recommendations are made that:

1. Preschool teachers should adopt different teaching methods or the teaching methods that best suit the specific objective and learning achievement in order to foster and enhance the preschool children's psychomotor and cognitive development skills in the three (3) senatorial districts in Kwara, Kogi and Benue educational zone in the North Central region, Nigeria.
2. Preschool teachers should also incorporate diverse approaches such as assembling and manipulating small objects, copying shapes in the classroom. This will help improve the psychomotor development skills of preschool children in the three (3) senatorial districts in Kwara, Kogi and Benue educational zones in the North Central region, Nigeria.
3. Cognitive development skills of preschool children are supposed to be a concern to every educator and individual in educational chaos. So teachers should always try as much as possible to assess and evaluate the cognitive development skills of preschool children through matching objects with their names, holding pencils correctly and identifying capital and lower case letters. This will advance their cognitive development skills in the classroom setting.

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