

## INDIGENOUS TOOLS FOR MEASURING QUALITY LEARNING IN EARLY CHILDHOOD CARE EDUCATION IN NORTH-CENTRAL NIGERIA

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### Abstract

The study assessed the indigenous tools for measuring quality learning in early childhood care education in North-central, Nigeria. The study adopted descriptive survey research design. The population of the study comprises 210 care givers in three states in North-central, Nigeria. A sample of 150 care givers were selected using a multi-stage sampling technique. Indigenous Tools for Measuring Quality Learning Questionnaire (ITMQLQ) was used as the instrument for data collection. Using PPMC, the instrument yielded reliability coefficient of 0.78. Research questions were answered using mean and standard deviations. The study found that indigenous tools are self-evident to improve the quality of learning outcomes. Indigenous tools are good measure for early childhood education as it helps the learners to explore their immediate environment. The study recommends that educational regulatory and policy making agencies should develop suitable indigenous tools that can be used for measuring learning in early childhood education in Nigeria.

**Keywords:** Indigenous Tools, Quality Learning, Measuring Tools.

### Introduction

The Federal Government of Nigeria National Policy on Education (2014), which serves as a core policy guide for implementation in Nigerian education system, requires the development and dissemination of learning experiences in integrated early childhood care development. It is encouraged that the medium of instruction at the early childhood stage should be the language of the immediate community. This process can be carried out through the use of orthography of Nigerian languages, textbooks, supplementary readers and other instructional materials in Nigerian languages. These may include folklore, storytelling, cultural medium of communication, local historical artifacts about the way of life, dancing and singing in the tone of local way (Jill et al., 2021).

Development of early childhood care education (ECCE) curriculum for teaching in a play-away method nationwide is to enable adequate supervision and quality control in ECCE centres in Nigeria (Junaid, 2019). Cynthia and Alejandra (2022) and Kim et al. (2014) noted in their various studies that utilization of indigenous tools in learning and instructional materials is to enhance better literacy and numeracy through the exploration of the infants' immediate environment and building of learning experiences in the child's cultural context. Teacher education and specialization remains paramount in addressing the manpower needs in the ECCE centres across the country with grounded knowledge on qualification for application of indigenous tools that would influence learning quality outcome (Achagh, et al., 2024; & Richards, 2019).

At this level of education, learners began the day with environmental interactions. Learning is a process in which learners received, reconcile and recreate knowledge for new information

with the interaction in the environment (Kanno, 2018; Kussmaul & Pirmann, 2021). The knowledge passed on to the learners are hardly internalized due to the fact that learners are not familiar with the tools of engagement in learning. This is because indigenous tools are not used (Olorode & Jimoh, 2016). This understanding is an offshoot of cognitive theory hence the origin of cognitive constructivism (James, et al., 2014; & Mareena et al., 2019).

Cognitive constructivist encourages students to apply practical methods to gain knowledge, reflect and discuss their learning experiences in the classroom. Therefore, cognitive constructivism discourages rhetorical repetition of others' conceptions and definitions thereby allowing learners to discover their own learning experience especially when indigenous tools are used for teaching and learning in early childhood education. However, such indigenous understanding for learning receives little or no attention from researchers. Few studies looked at indigenous tool at a higher level of education (Afolayan, 1970; Hannah, 2008 & Obemeta, 1985) leaving learners at the lower level to struggle.

Moreover, these indigenous or traditional tools as used by natives in communities around the world to ease the work done. It can be used in hunting, fishing, farming, building, crafting and education. In education, indigenous tools are commonly used items that aid the imparting of knowledge. The tools help in the exploration of knowledge from known to unknown, simple to complex, familiarized to new discoveries in the field of learning, therefore leading to creativity and reproduction of knowledge in a way that suits every communities need (Michael, 2006). Most of the developed countries, like Russia, China, India apart from colonial master's language of communication were able to develop nationally due to localization of teaching and learning processes. This assertion was collaborated by Watkins (2005), Dunleavy and Milton, (2009) that teaching in the language of the learners is a fundamental factor that determine the level of internalization of knowledge acquired for self and national development.

These indigenous tools are used in measuring the quality of learning and assessment for tracking the achievement of learning outcome because the true nature of learning outcome is dependent on the design for gauging the end result of every learning activities (Parsons et al, 2014). That is, measuring quality is fundamental to quality of learning which must be within the concept of every level of learning in education. This implies that all efforts directed towards learning and learning activities must be holistic that meet the intellectual, physical, social and emotional needs of every learners (Bondy et al., 2007).

Measuring quality learning requires the adoption of tools that are relevant to learners in Early Childhood Care Education as this stage of education involves caring and supportive of adult relationships, opportunities for meaningful learner participation in their localities and high parent expectations regarding learner achievement in other stages of education (Afolayan, 1970; Hannah, 2008). The adoption of this concept in an effective learning environment promotes a strong sense of community, leaving children feeling valued, respected and connected to reaching their potentials. It brings to the learning community high qualities like physical and psychological safety, absolute trust and collaboration, poverty effect on solid

understanding, positive stakeholders' relationship, and learners' need- based approaches as well as engaging and relevant curriculum.

According to Fabinu et al., (2022), indigenous practices (usage of tools) have significant correlation with early childhood education. It was noted that indigenous practices are very important on early childhood education in Epe community of Lagos State. In another study, Catherina and Ogar (2017) found that gamification of indigenous education can be used to link learning outcome in early childhood education. They further stated that caregivers are aware of the use of indigenous tools for education in early childhood education.

In addition, constructivism by Vygotsky (1978) has become the foundation of much research and theory in cognitive development over the past several decades. In particular, it is known as the inspiration behind the socio-cultural perspective. Vygotsky's theory comprises concepts such as culture-specific tools, private speech, and the zone of proximal development. Vygotsky believed that cognitive development is influenced by cultural and social factors. He emphasized the role of social interaction in the development of mental abilities - e.g., speech and reasoning in children. Vygotsky strongly believed that community plays a central role in the process of "making meaning." Cognitive development is a socially mediated process in which children acquire cultural values, beliefs, and problem-solving strategies through collaborative dialogues with more knowledgeable members of society.

Indeed, before age two, a child employs words socially; they possess no internal language. Once thought and language merge, however, the social language is internalized and assists the child with their reasoning. Thus, the social environment is ingrained within the child's learning. In effect Vygotsky's theory emphasizes individuals' active role in their cognitive development, highlighting the interplay between innate abilities, social interaction, and cultural tools. Vygotsky posited that people aren't passive recipients of knowledge but actively interact with their environment. This interaction forms the basis of cognitive development.

Infants are born with basic abilities for intellectual development, called "elementary mental functions" (Dunleavy & Milton, 2009). These include attention, sensation, perception, and memory. Through interaction within the sociocultural environment, elementary functions develop into more sophisticated "higher mental functions." Higher mental functions advanced cognitive processes that develop through social interaction and cultural influences. They are distinct from the basic, innate elementary mental functions. Unlike elementary functions (like basic attention or memory), higher functions are: **Conscious awareness:** the individual is aware of these processes. **Voluntary control:** they can be deliberately used and controlled. **Mediated:** they involve the use of cultural tools or signs (like language). **Social in origin:** they develop through social interaction.

The espousal of cognitive constructivism engages learners to explore knowledge through the use of indigenous tools for quality measurement of learning outcome perspectives. Looking at these sophisticated functions highlighted above, it gives a deeper understanding on the cognitive constructivism theory of Vygotsky. Cultural tools include language and communication, logical reasoning, problem-solving, planning, attention control, self-regulation, and metacognition have the effectiveness to improve learning experiences.

## Research Questions

This study seeks to provide answers to the following research questions:

1. Are indigenous tools a good measure of learning quality in early childhood education?
2. How are the indigenous tools being adopted in learning activities in early childhood education?
3. What is the level of awareness of caregivers on the use of indigenous tools for learning in early childhood education?

## Methodology

The study was conducted using a descriptive survey research approach. According to Nwogu (2015), the descriptive survey research design is a way of conducting study that aim to collect data and describes it in a systematic way that characterize quality or facts about a certain community. This research approach is suitable for the study because it aims to gather and describe data on the use of indigenous tools for measuring quality learning in early childhood care education in North Central Nigeria. Hence, being a study that used primary data, this approach allows respondents to select the view that is close to their opinion as itemized in the questionnaire constructs that display the research objectives. A total population of 150 caregivers across three states and FCT in the North-central, Nigeria were chosen using a multi-stage sampling technique. The sampled participants' responses are characterized with their teaching qualification, teaching experience and state distribution.

There are 65 respondents who are without teaching qualification, 58 respondents are holders of NCE, and 18 respondents have degree while, 9 are post graduate degree holders. With respect to teaching experience, 28 persons have been teaching in early year facilities for about 5 years, 45 persons were in teaching at this level for six to 10 years, 47 of them have experience between 11 – 20 years and lastly, those with above 20 years of experience were 30. The state distribution shows that FCT has 55 respondents from which 25 are early childhood development centres (ECDC) and 30 respondents' runs home schooling for early year. In Niger State, 14 respondents are in ECDC while those in home-schooling are 27 respondents summing up to the total of 41 respondents. A total of 24 respondents were from Kogi State where 10 are in ECDC and 14 respondents are handling children in home schooling. In Nasarawa State, eight respondents are working in ECDC and home-schooling respondents are 22 in numbers. This sum up to 30 respondents with 20 from the total sample for the study.

Indigenous Tools for Measuring Quality Learning Questionnaire (ITMQLQ) was used to collect data for the study. The instrument was divided into two sections. Section A: gathered information about the respondents while section B: elicited information on indigenous tools for measuring quality learning in ECCE. The latter was a four scale points of Strongly Agree (SA), Agree (A), Disagree (D), and Strongly Disagree (SD) which is used for research questions 1, 2 and 3. Modified Likert scale was used for this study because it helps to quantify qualitative

data, capture opinions in scale, ease the use and analysis of responses collated, versatility in measuring attitude, opinions, behaviour of respondents, and increased data depth for insightful result interpretations (Andrew, et. al., 2021). Three professionals independently validated the questionnaire instruments while Cronbach alpha was used to determine the reliability coefficient, which stood at 0.78.

The data analysis techniques adopted for this study was mean and standard deviation. The responses were utilized to categorize the mean rating of the respondents for decision making. Hence, the mean of 2.5 value and above was considered as accepted and anything less than this benchmark is not accepted for the decision making. Such decision rule was used in different existing childhood studies, including Achagh, et al (2024) and Hannah (2008).

**Results**

**Research Question One:** Are indigenous tools a good measure of learning quality in early childhood education?

**Table 1: Indigenous Tools as a Good Measure of Learning Quality Responses**

SN	Item	N	$\chi$	$\delta$	Decision Rule
		<b>150</b>	<b>2.39</b>	<b>1.05</b>	<b>Rejected</b>
1	There is enough awareness about indigenous tools in ECCE.	150	2.29	0.95	Rejected
2	Hardly used it for measuring learning quality.	150	1.95	0.92	Rejected
3	Its usage has no impact in attaining adequate learning outcome in ECCE.	150	2.25	1.08	Rejected
4	Parents are not bordered about indigenous tools in ECCE environment.	150	2.91	1.11	Accepted
5	Retraining of care givers is vital to equipping on the use of indigenous tools in ECCE.	150	2.57	1.21	Accepted

Table 1 above revealed that care givers in ECCE are not having adequate knowledge about the relevance of indigenous tools in early childhood care and education environment. The respondents mean value 2.39 of research question one shows that there is no evidence that care givers in early childhood facilities are equipped with knowledge for making use of indigenous tools in ECCE environment. This finding implies that there is no clear understanding among the respondents on the use of indigenous tools that it has impact on ECCE learning outcome. Items 1 to 3 on table 4 were rejected for ECCE care givers because it displays that there is no awareness about its effectiveness in measuring learning quality that can enhance the desired learning outcome. Also, other items from 4 and 5 were accepted on the fact that their average values are 2.91 and 2.57 respectively. It goes to tell that there is low awareness on the usage of indigenous tools by parents in ECCE centres hence training of care givers on the use of indigenous tools is fundamental to its adoption in the learning processes of children in the early year schools. This finding agreed with Fabinu et al., (2022) that it is an ethical standard in measuring learning outcomes using indigenous tools in practicing of ECCE in the North Central, Nigeria.

**Research Question Two:** How are the indigenous tools being adopted in learning activities in early childhood education?

**Table 2: Level of Adoption of Indigenous Tools in Learning Activities Responses**

SN	Item	N	$\chi$	$\delta$	Decision Rule
		<b>150</b>	<b>2.11</b>	<b>0.94</b>	<b>Rejected</b>
1	Indigenous tools are available for early year children education.	150	2.05	1.06	Rejected
2	The care giver centers in early year allow the usage the tools for measuring learning quality.	150	1.99	0.93	Rejected
3	National policy on education encourages it use in ECCE programmes.	150	2.16	1.05	Rejected
4	Nigerian Languages are used as medium of learning in ECCE.	150	2.17	0.84	Rejected
5	There is no sign for indigenous tools usage for learning in ECCE.	150	2.17	0.83	Rejected

Table 2 summarized that the respondents disagreed with the extent of availability of indigenous tools to enhance better content delivery in early childhood education in the North Central Nigeria. The research question displayed having mean of 2.11 which connotes that there exists no correlation between the availability extent and usage in knowledge content delivery in ECCE for effective learning outcomes. All the items in this research question confirmed this rejection of the proposition with means 2.05, 1.99, 2.16, 2.17 and 2.17 respectively. This finding can largely be attributed to low proficiency knowledge about indigenous tools in the care giver training during the cause of study because it might not be a prerequisite course or knowledge basis that is crucial to the expectation future teachers concerned. The result for the research question two is in alliance with the studies of Catherina and Ogar (2017) among others.

**Research Question Three:** What is the level of awareness of caregivers on the use of indigenous tools for learning in early childhood education?

**Table 3: Level of Awareness of Indigenous Tools Responses**

SN	Item	N	$\chi$	$\delta$	Decision Rule
		<b>150</b>	<b>2.71</b>	<b>1.16</b>	<b>Accepted</b>
1	Indigenous tools are prepared base on care givers knowledge and qualification	150	2.88	1.08	Accepted
2	Effective and efficient ECCE indigenous tools can influence life-long learning values.	150	2.31	1.1	Rejected
3	Care givers need qualification to use indigenous effectively.	150	2.76	1.14	Accepted
4	There are adequate indigenous tools in every early childhood development centres.	150	2.79	1.27	Accepted
5	ECCE Associations insists on the use of indigenous tools in early childhood development centres in the North Central Nigeria.		2.83		Accepted

Table 3 found that influence of care giver certification is fundamental to the application of indigenous tools in ECCE environment. It shows that 2.71 mean signified that the qualification of care givers in ECCE can improve the quality of service delivery and best practices in the Nigerian early year education schools especially when the knowledge on the use of indigenous tools are adopted. Items 1, 3, 4 and 5 are accepted at mean values of 2.88, 2.76, 2.79 and 2.83 respectively. This can be inferred that care givers preparedness, qualifying knowledge, availability and having association that embedded indigenous tools in training its members would go a long way to uplift the quality of learning delivery in ECCE in the north Central Nigeria.

Item 2 on the table is rejected with a mean value of 2.31 which revealed that a lot of the respondents who are caregivers in ECCE are not attuned with the positive impact of indigenous tools in influencing the life-long experiences of the learners. This finding collaborated with previous studies of researchers amongst which are; Achagh, et al., (2024) and Richard, (2019) that indigenous tools has the propensity to improve quality learning outcome.

### **Conclusion**

It was concluded that there is low awareness of indigenous tools in early childhood education centres in north central Nigeria. In other words, most of the caregivers are not aware of the relevance of teaching children using indigenous tools in the school, as they don't procure or improvise such materials for effective learning activities. The study found that indigenous tool is a good measure of learning quality outcome. That is, it can be used for effective teaching and learning processes in ECCE environment. The findings depicted areas of concern that needed attention of policy makers to professionalize and include indigenous tools in the curriculum for effective learning experiences in early years education and training processes to improve its deployment for improving learning quality in early childhood education.

### **Recommendations**

Professional bodies and educational regulators ECCE teaching career must ensure that care givers are equipped with knowledge of using local language as a medium of teaching and learning processes in the early year education, as enshrined in the National Policy on Education to get abreast with use of indigenous tool skills to discharge effective learning outcomes. It is highly necessary that such adoption can improve the measurement of quality learning and as such the learners at the early year level can easily internalize knowledge efficiently as foundation for further learning.

The availability of indigenous tool for measuring quality learning in early year education is highly inadequate as the adoption in learning activities remain unpopular hence educational institutions that offers ECCE as a course must entrench the ideas of such tools in the context

of ECCE teacher training in Nigeria. So, this would enhance better knowledge base of this area and adequately develop manpower for the educational subsector that has the application of local content in shaping the future generation and landscape of knowledge at the initial level education. Educational bodies must ensure routine appraisal of Early Childhood Development centres to be sure that regulation compliance on the use of indigenous tools are adequately adhered to and used.

Teacher professionalism and qualification can serve as avenue to improve the quality of using indigenous tools in ECCE in Nigeria through awareness creation on the use and the frequency of its usage. Hence, it would not be out of place that early year education can create the needed foundation for sound future educational pursuit of the young children especially when the learners comprehend that basics in their local language that have long term impact in their future career. Life-long education is one of the concrete features in the twenty-first century that learners are prepared for dynamic future education at all levels making them to easily adapt to the needs of the society. Policy makers must be conversant in the ECCE centres to avoid negative misuse of the indigenous tool for measuring quality learning.

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