Development of Problem Solving Skills among Pre-School Children: Assessment of Parenting Practices in Nigeria

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ABSTRACT

This research assessed parent practices in the development of problem solving skills among pre-school children in Nigeria. The descriptive survey design was used for the study. The population for the study include all parents age 20 years and above from the 36 states and Federal Capital Territory (FCT). Purposive sampling technique was used to select six states of Oyo (Southwest), Ebonyi (Southeast), Edo (South south), Adamawa (Northeast), Kebbi (Northwest) and Plateau (North central) states. For each state, 5 Local Government Areas (LGAs) were selected and in each LGA, 20 parents participated in the study. The instrument used for the study is tagged Parental Interview Guide for Baseline Data on Parenting (PIG_BDP). The instrument was validated by test experts and reliability determined using Cronbach alpha at 0.81. This was then used for data collection.The data collected were analysed through simple percentages and mean. The findings shows that cultural /community practices problems, wrong religious related issues, poor teacher related factors, poor parenting style, nurturing care factors, negative learning environment/ funding factors, and poor interest were factors identified as affecting Problem solving skills development among preschoolers in Nigeria. Also, parents' awareness of the needed knowledge for problem based learning skills development was poor. It was recommended among others that parents should be trained on positive handling problem based learning skills with their pre-school children.

Key Words: Problem Solving Skills, Pre-school, Parenting practices

INTRODUCTION

The turn of 21st century has brought with it changes and developments in knowledge and skills sets which are required for effective living in the society. These developments are in the form of sets of knowledge, skills, work habits and personality traits necessary for a meaningful life in today's world, especially in areas of learning and future career development by individuals and the society (Ocak, et al. 2021). In building these skills effectively, researchers have identified four groups of skills of the 21st century: ways of thinking, ways of working, tools to work, and living in the world (Binkley, et al. 2012). One of the important skills required for the development of individual and nations is the problem solving skills. Problem solving is a critical talent in the set of thinking abilities that is required in every person's life. It is also the most crucial talent that learners worldwide, both in and out of school, must learn and master (Rahman, 2019). A problem is a circumstance in any aspect of life in which a person wants to attain or complete a task within a specific time frame but does not know how to successfully bridge the gap between their current situations and where they want to be (Rahman 2019). A problem is a situation in which a person attempts to solve a problem but does not know how (Nguyen & Nguyen, 2022).

Problem solving is regarded as an important life skill because it involves the development of a variety of processes such as analysis, interpretation, inference, prediction, evaluation, and reflection skills a person must achieve to provide solutions in problem situations. It is an intellectual process of the brain that discovers an explanation for a specific problem or discovers a technique to achieve a given goal (Wang & Chiew 2010). Problem solving offers several benefits, including boosting learners accountability, leading them to seek, improving their interest in learning, providing students with lifetime learning, and increasing student

motivation, etc. (Ocak, et al, 2021). PISA (2022) defines problem solving competence as the capacity of an individual engaged in cognitive processing to grasp and solve issue situations when the solution approach is not evident, and straight away. It involves the willingness to engage in such situations in order to reach one's full potential as a constructive and thoughtful citizen (Co-operation and Development 2014). According to Dewi, et al (2017) problem solving is the capacity to identify a solution through a process of acquiring and arranging information about the problems of daily living. There is a strong belief that problem-solving abilities assist individuals in easily overcoming obstacles in their daily lives and improving organisational success (Özreçberoğlu & Çağanağa 2018). From the above discussion on the concept of problem solving, it can be deduced to include skills learners acquire to make identify problems design a procedure for solving the problem and making conclusions.

There are several models for problem solving skills development however the six steps model suffice by e-Book (2023). This provides a shared, collaborative, and systematic approach to problem solving. Each step must be completed before moving on to the next step. However, the steps are repeatable. At any point, the group can return to an earlier step, and proceed from there. The goal is not to solve but to evolve, adjusting the solution continually as new challenges emerge, through repeating the Six Step Process. The steps according to e-Book (2023) are:

Step 1) Define the Problem – Identify problems through problem formulation and questioning. The key is asking the right questions to discover root causes.

Step 2) Determine the Root Cause - During this process, assumptions are uncovered and underlying problems are further revealed. Also, this is an opportunity to collect and analyse data.

Step 3) Develop Alternative Solutions – Decisions are made within the group to determine the appropriate solution and process through creative selection.

Step 4) Select a Solution – Once the group has formed solutions and alternatives to the problem(s), they need to explore the pros and cons of each option through forecasting consequences.

Step 5) Implement the Solution – Develop an action plan to implement and execute the solution process.

Step 6) Evaluate the Outcome – This final stage requires an evaluation of the outcomes and results of the solution process. Ask questions such as: Did the option answer the questions we were working on? Did this process address the findings that came out of the assumptions? This process helps keep groups on track, and enables a thorough investigation of the problem and solution search.

Despite the importance of Problem Solving Skills (PSS) and its inclusion by government in documents such as the NCCE (2020) minimum standards for teacher training especially at the pre-school and primary school levels, there has been growing complain that graduates lack problem solving skills in the pre-school level in Nigeria. This has made industries to rely on expatriates for simple task which requires utilising PSS. There is need to improve on problem solving skills of children at the early childhood stage. In this light Karatas, and Adnan (2013) asserts that pre-school learning environment and the home plays a critical role in laying the foundation of the development of problem solving skills in the child at the early age so as to be competitive in the 21st century (Katniyon, et al 2019)). A critical component of the learning environment in the preschool age is the parenting practices at home which in Reggio Emilia is regarded as the first teacher. However, research in Nigeria about parenting skills knowledge, cultural practices and beliefs, food taboos, gender roles and stereotyping among others have been traced to affect children's learning and especially the development of problem solving abilities (Amuson & Olatunji, 2018; Egbedeyi, et al 2019). What children learn at home can influence their PSS skills development. In northern Nigeria for instance, girls are denied access to some activities such as farming, playing football etc while in southern Nigeria boys start apprentice and training at early age and creates both a negative and positive scenarios influencing problem solving skills development. Consequently, there is the need to investigate how parenting practices can influence PSS development for preschool children in Nigeria.

Few studies on problem solving have been conducted each of which has different methods and is geared towards understanding problem solving skills in certain areas (countries). Pimta et al investigated the factors influencing 6th graders' arithmetic problem solving abilities and discovered characteristics such as focus, attitude toward math, and motivation for academic performance, self-esteem, and teacher behaviour (Pimta, et al, 2009). Bicer et al researched measures to develop problem-solving skills through math, the authors identified the importance of problem-solving skills (Bicer, et al, 2013). Yu et al (2015) investigated on strengthening problem solving skills for students through context includes the following steps: (1) defining and analyzing problems, (2) collecting data, (3) creating problem possible solutions, (4) selecting the optimal solution, (5) implementing the optimal solution, (6) evaluating the results, and (7) modifying the solution based on the results (Yu, et al, 2015).

In another study, Sophonhiranrak, et al (2015) identified factors influencing problem solving skills in blended learning environments, which include: 1) understanding challenges, 2) generating ideas, 3) preparation for action, 4) planning an individual approach; and 5) learning activities, 6) learning resources, 7) feedback, 8) interactive learning, and 9) assessment. Investigation of parenting elements that influence pre-schoolers' problem-solving abilities at different levels and nations seems to have been neglected in Nigeria. Also, Hansen, and Blaine, (2022) studied parent-child Interaction and problem-solving: a systematic review and meta-analysis in the United States. Findings reveals that positive parent-child interaction predicts better problem-solving skills in children. Parental guidance and scaffolding enhance problem-solving skills. Emotional support from parents reduces anxiety and increases persistence. This was carried out in USA with different environment and cultural realities. There seems to be no similar research in Nigeria a gap this study intends to fill. Report from the analysis literatures and empirical reviews a gap that has not been adequately addressed is the influence parenting practices can have on problem skills development at the preschool level in Nigeria. This study therefore, assessed parenting practices as it affects development of problem solving skills in pre-school children in the six geo political zones of Nigeria to fill the identified gap.

Purpose of the Study

The Purpose of this research is to assess parenting practices as it affects development of problem solving skills in pre-school children in the six geo political zones of Nigeria. It Specifically: assess the distribution of participants by states, age and gender. It also assess the problem solving skills identified by parents based on zones and the needed knowledge by parents for acquiring problem solving skills.

Research Questions

The research tenders the following research questions;

1. What are the distributions of participants based on States of origin?
2. What are the gender distributions of the respondents?
3. What are the age distributions of respondents?
4. What are the common problem solving skills identified by parents in Nigeria?
5. What are the differences in Problem Solving Skills among parents in the 6 geopolitical zones of Nigeria?
6. What are the challenges influencing/ affecting problem solving skills development among Pre-school Children in Nigeria?
7. To what extent do Nigerian parents have the needed knowledge on problem solving skills of pre-school children?

METHODOLOGY

This study used a descriptive survey design to assess parenting practices in connection to problem-solving skills among preschool children in Nigeria. This design was chosen as it is effective in collecting respondents' opinion eliminating any biases. The population for the study include all male and female parents age 20 years and above from the 36 states and Federal Capital Territory (FCT). Purposive sampling technique was used for the selection of the states to be involved. Out of the 36 states and FCT we have in Nigeria, 6 states were used

based on the 6 geopolitical zones in the country. For the selection per zone/state, the strategy used is to get a contact person to coordinate the data collection processes. The states selected per geopolitical zones were Oyo (Southwest), Ebonyi (Southeast), Edo (South South), Adamawa (Northeast), Kebbi (Northwest) and Plateau (North central) states. For each state, 5 Local Government Areas (LGAs) were selected and in each LGA, 20 male and female parents participated in the study. The instrument used for the study is tagged Parental Interview Guide for Baseline Data on Parenting (PIG_BDP). The instrument was validated by test experts and reliability determined using Cronbach alpha at 0.81. This was then used for data collection.The data collected were analysed through simple percentages and mean and findings presented below in charts and tables.
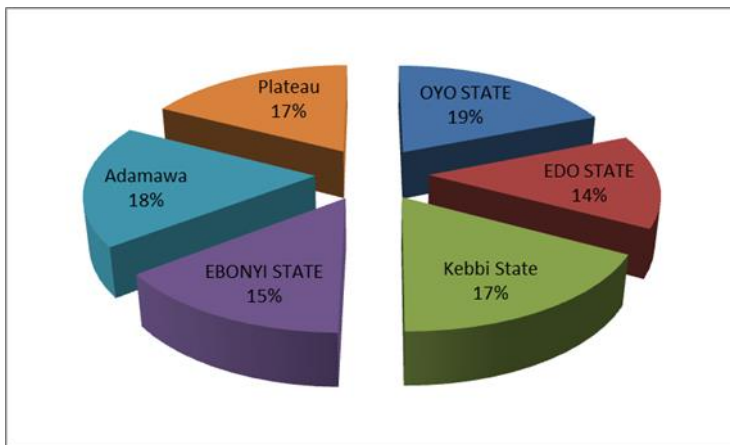
Findings

The results of findings are presented and discussed based on the research questions as follows:

RESULTS

Research Question 1: What are the distributions of participants based on States of origin?

Table 1: Distribution of Participants Based on States of origin

Results in Table 1 shows that a total of 576 respondents participated in the study, out of which 19% were from Oyo, 14% were from Edo, 17% were from Kebbi, 15% were from Ebonyi, 18% were from Adamawa and 17% were from Plateau State. This implies that there are representatives from each of the six geopolitical zones that make up Nigeria.

Research Question 2: What are the gender distributions of the respondents?

Table 2: Distribution of the Respondents According to Gender
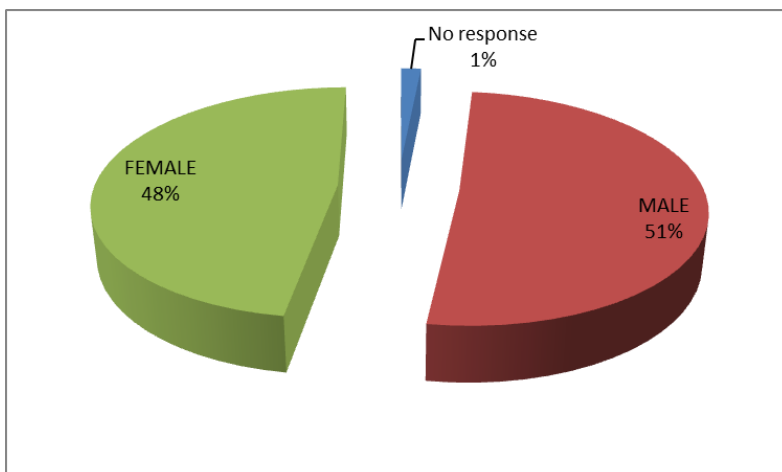
Results in Table2 shows that out of the total respondents, 51% are male and 48% are female respondents while only 1% failed to indicate their gender.

Research Question 3: What are the age distributions of respondents?

Table 3: Percentage of Age Distributions of the Respondents
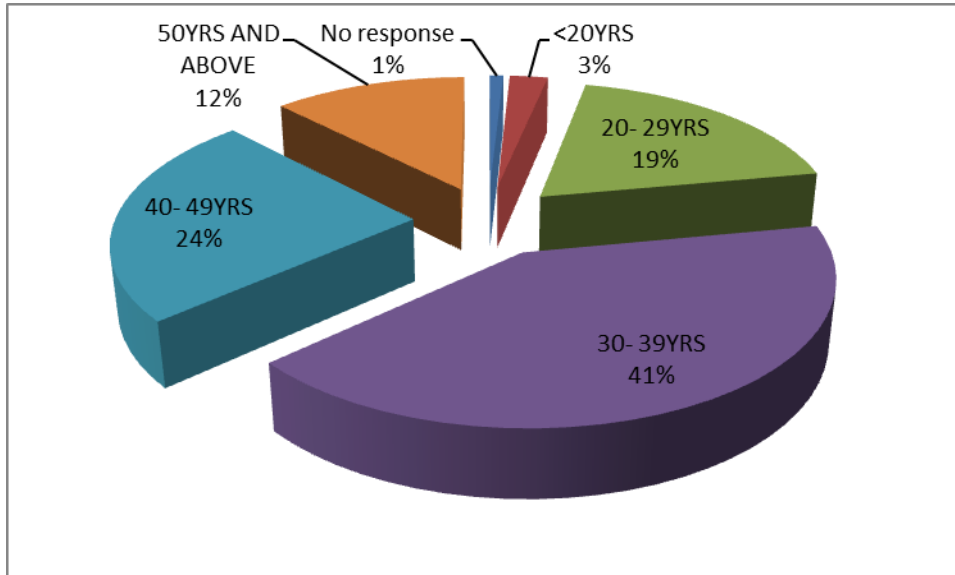

Table 3 shows that majority of the respondents (41%) were between 30 to 39 years, this is followed by those who were between 40 to 49 years (24%), followed by those who were between 20 to 29 years (19%), followed by those who were above 50 years (12%) while those who were less than 20 years of age were the least (3%).

Research Question 4: What are the common problem solving skills identified by parents in Nigeria?

Table 4: Percentage of common problem solving skills practices among parents in Nigeria?

SN	Identified Problem Solving Skills	Edo State	Ebonyi State	Kebbi State	Plateau State	Oyo State	Total	Percen
1	Skills that define problems	6	7	10	-	4	27	36.00
2	Determination of Root Causes	2	2	2	-	2	8	10,60
3	Developed Alternative solutions	1	-	-	-	1	2	2.60
4	Selection of solutions	4	4	4	-	2	14	18.60
5	Skills that Implement solutions	3	1	5	6	1	16	20.30
6	Skills to Evaluate outcomes	3	5	-	-	-	8	10.60
	Total						75	100

The respondents were asked to list good problem-solving skills practices common to their localities. Analysis of extracts by states on Table 4 show that parents identified 36% of parents identified common problem solving skills in the range of defining the problem. Only 2.6% of parents identified problem solving skills that developed alternative solutions. Result from this finding implies poor problem solving skills practice by parents in the states being investigated.

Research Question 5: What are the differences in problem solving skills perception among parents in Nigeria?

Table 5: Differences in Perception of Problem solving skills by Parents in Nigeria based on States

S/N	Oyo State	Edo State	Ebonyi State	Kebbi State	Plateau State
1.	to be pro-active	to be pro-active	house to house check up	to be pro-active	cleaning the environment
2.	individual efforts	awareness	to be pro-active	awareness	molding with clay
3.	giving ideas	individual efforts	awareness	individual efforts	house to house vaccination
4.	open mindedness	giving ideas	individual efforts	giving ideas	provision of good education
5.	attentiveness	attentiveness	giving ideas	attentiveness	consultation with elders
6.	creativity	team work	attentiveness	team work	resolving misunderstanding
7.	individual efforts	identify the issue first	team work	engage the child in creative plays	
8.	team work	implement the solving solution	engage the child in creative plays	traditional culture	
9.	thinking	engage the child in creative plays	traditional culture	try and error	
10.	brain storming	traditional culture	orientation	training	
11.		try and error	try and error	house to house check up	
12.		training	training	open mind	
13.		open mindedness	open mind	provision of good and quality equipment	
14.		ask open ended question	provision of good and quality equipment	ask open ended questions	
15.		facilitating decision	ask open ended question	facilitating decision	

		making		making	
16.		orientation	facilitating decision making	orientation	
17.		showing solution to the problem	story telling	school competition	
18.		teach them how to run around	organize seminar	brain storming	
19.		story telling	brain storming	isolate what does not work	
20.			isolate what does not work	teach them how to run around	
21.				organize seminar	

Data on Table 5 indicates that parents in Nigeria have differing views about problem solving skills for preschoolers. Parents from Kebbi state identified more varying skills with 21 items while parents in plateau state have fewer items of six. Although there are varying perceptions, must of the skills cut across zones in Nigeria.

Research Question 6: What are the challenges influencing problem solving skills development among pre-school children in Nigeria?

Table 6: Percentage of Challenges Faced in Problem-solving Skills Development by parents in Nigeria

SN	Identified Challenges of Problem Solving Skills Development	Edo State	Ebonyi State	Kebbi State	Plateau State	Oyo State	Total	Perc
1	Cultural /community practices problems	7	7	3	2	2	21	26.2
2	Wrong Religious related issues	4	-	-	-	-	4	5.0
3	Poor Teacher related factors	-	-	-	-	-	0	0
4	Poor Parenting style Nurturing care factors	8	6	8	-	2	24	30.0
5	Negative Learning environment/ funding factors	-	2	-	4	2	8	10.0
6	Poor Interest/ Attitude factors	2	6	12	2	1	23	28.7
	Total	21	21	23	8	7	80	100

Data on Table 6 shows results obtained when respondents were asked to list challenges facing problem-solving skills practices common to their localities. Analysis from the states shows that challenges of poor parenting styles and nurturing care practices was the highest challenge with 30% of parents identifying this. Teacher

related factors where considered least by parents. Interestingly cultural a community practices had 26.2 percent as a challenge faced in problem solving development.

Research Question 7: To what extent do Nigerian parents have the needed knowledge on problem solving skills of pre-school children?

Table 7: Mean and Standard Deviation of Needed Parental Knowledge in Intellectual Development

S/N	Item	Not Needed F (%)	Needed but Not Much F (%)	Very Much Needed F (%)	Mean	Std. D	Remark
1	How to support problem-solving skills of the child	24 (4.2%)	167 (29.0%)	362 (62.8%)	2.507	0.758	VMN
2	How to support language development	25 (4.2%)	172 (29.9%)	358 (62.2%)	2.505	0.746	VMN
3	How to support logical thinking	23 (4.0%)	128 (22.2%)	407 (70.7%)	2.604	0.712	VMN
4	How to encourage creativity	25 (4.3%)	141 (24.5%)	384 (66.7%)	2.533	0.780	VMN
5	What and when to hold conversation with the child	26 (4.5%)	214 (37.2%)	307 (53.3%)	2.387	0.794	NNM
	Weighted Average				2.507		VMN

Note: NNM is Needed Not Much; VMN is Very Much Needed

Table 4 reveals that the respondents submitted that knowledge about intellectual development is very much needed (Weighted average = 2.51). Specifically, they indicated that the following items are very much needed: how to support problem-solving skill of the child (mean = 2.51); how to support language development (mean = 2.51); how to support logical thinking (mean = 2.60) and how to encourage creativity (mean = 2.53). But the item that: what and when to hold conversation with the child (2.39) was termed needed but not much.

DISCUSSION

The issuer of assessment of parenting practices in the development of problem solving skills among pre-school children continues to be contentious. This is because the early childhood curriculum places great responsibility on parents and teachers in the training of the child. This can be seen in the problem solving theory which emphasis collective engagements in problem solving. However whereas teachers receive formal training equipping them for the discharge of their responsibilities in child care and education, parents in Nigeria must of whom are illiterates are expected to perform educational parenting task for children eg helping with assignments and development of problem solving skills without any prior training. Thus regarding common problem solving skills identified by parents their understanding focused mainly on identifying the problem with little imputes on providing alternative solutions and evaluating outcomes which are critical to development of children's problem solving skills. (Trostel, et al. 2017). This position is echoed Amuson, and Olatunji (2018) that if the home must be effective in child's education then parents should be provided with skills to perform their task readily. This also implies narrowing parents' perception of their roles in problem skills development nationally through advocacies and training.

Regarding the challenges affecting problem solving skills development among pre-school children in Nigeria, aggregated responses from respondents as seen on Table 6 identified factors such as: Cultural /community

practices problems , Wrong Religious related issues, Poor Teacher related factors , Poor Parenting style Nurturing care factors, Negative Learning environment/ funding factors, and Poor Interest/ Attitude factors as challenges affecting Problem solving skills development of preschoolers in Nigeria. Nigeria as in other African nations is rooted in traditional and cultural beliefs these influence parenting especially on gender roles for boys and girls and stereotyping which may influence problem skills development. It is no wonder then that analysis from the states shows that challenges of poor parenting styles and nurturing care practices was the highest challenge with 30% of parents identifying this. Teacher related factors where considered least by parents. Interestingly cultural a community practices had 26.2 percent as a challenge faced in problem solving development. Egbedeyi, et al (2019); Nguyen, and Nguyen, (2022) thus stressed that overcoming the challenges of children education will mean a greater community ownership and awareness. This has implication for training and advocacies for effective parents' education on problem skills development nationwide.

Parental awareness on needed knowledge for problem skills development is a critical factor in national development. If both parents and the school developed these skills in the children at the early age then Nigeria will have a critical mass of future problem solvers. Parental knowledge of the needed knowledge for this skills is poor from the data on Table 7. Ajayi, and Popoola, (2018) had also in a research identified poor parental perception and needed knowledge on issues that development children's problem solving ability at the early age. The implication is that educational planners must carry parents along and be kept abreast with expected roles and responsibilities by home and communities in development of needed knowledge of problem skills by children (Ocak, et al. 2021). Problem solving skills are required by 21st century global citizens to fit into world of work. This needs to be taken seriously to attain desired national development.

CONCLUSION

Conclusions from this study shows that cultural /community practices problems, wrong religious related issues, poor teacher related factors, poor parenting style, nurturing care factors, negative learning environment/ funding factors, and poor interest were factors identified as affecting Problem solving skills development among preschoolers in Nigeria. Also, parents' awareness of the needed knowledge for problem based learning skills development was poor.

RECOMMENDATION

Based on the findings it was recommended that:

1. Parents should be trained on positive handling of problem based learning skills with their pre-school children.
2. State Universal Basic Education Boards should include parental awareness training on problem solving skills.
3. A module on parental guide to problem solving skills should be developed by educational training intuitions.

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