

Influence of Play Way Method of Teaching Among Full Time and Part Time NCE Students' Attitude in Mathematics in Shehu Shagari College of Education Sokoto State, Nigeria

¹Aminu Isah PhD and ²Bashirat Kikelomo Hamza

Shehu Shagari University of Education
Sokoto

socialmaan7@gmail.com | 08065965956
and Federal College of education, Zaria

Abstract: This study examined the Influence Of Play Way Method Of Teaching Among Full Time And Part Time NCE Students' Attitude In Mathematics In Shehu Shagari College Of Education Sokoto State, Nigeria. There Are Two Groups In The study namely full and part time students in the year 2020/2021 academic session. The target population was all NCE three students with sixty (60) students. Purposive sampling technique was used to select two groups as experimental group taught with play way method and control group taught with Lecture Method (LM) respectively with 60 students as advocated by Roscoe (1975) who advocates that a sample of 30-500 is enough for an experimental study. Quasy experimental research design with pre-test and post-test was used. An instrument was developed for the data collection namely mathematics Attitude Question (MAQ) with strongly agree, agree strongly disagree and disagree. Descriptive statistics was used to answer research question; and t-test was used to analyse hypothesis at 0.05 level of significant. The results of the study indicated that students who were taught using play way method have better attitude than students who were taught with lecture method. Based on the findings of the study, the researcher recommends that play way method of teaching mathematics in SSCOE Sokoto should be encouraged by stake holders in the education sectors. The researcher also recommends that the Federal Government of Nigeria through its agencies, such as the State Ministry of Education, Teachers Training Institutions and professional bodies such as: National Teachers Institute (NTI), MAN, STAN, NMS to organise a special re-training, workshops, and seminars for Mathematics teachers on play way method.

Keywords: Play Way Method of Teaching, Students' Attitude And Mathematics

Introduction

In some countries, like Nigeria, emphasis has been laid on Science subjects. As a result of this, students are being encouraged to take up Science related subjects. The only subject that cuts across all the Sciences is Mathematics. Unfortunately, performance of students in Mathematics at the end of secondary education needs to be improved (Isah, 2015). As Idowu (2018), observes, many students find it difficult to study Mathematics; so many issues have been attached to this trend. The issue of poor performance in Mathematics examination might be the problem of teaching methods.

Most nations developed because of the role played by teachers through teaching. Hence, teaching must be done in a way students will perceive, understand and retain what has been learnt to reflect higher scores for meaningful application of knowledge at different situations (Kabir, Dada, and Yusuf 2020). Thus, teaching is the process of learning and knowing which is not restricted to schools of text books. The importance of teaching and learning is evident at every stage of education whether at primary, junior secondary, senior secondary and higher education. Teachers should be well equipped with all possible techniques, systematic process and procedures in equipped with all possible techniques, strategies, systematic process and procedures in which the stated aims and objectives can be achieved (Kabir, Dada and Yusuf 2020).

Based on this assertion, Isah (2021) stated in order for teachers to capture the interest of the learners; he or she needs to develop a teaching method that is capable of improving the student positive attitude, retention ability and academic performance. One of the teaching methods which may hope to yield better academic performance in learning Mathematics is the play-way method.

Play-way Method.

Learning through play-way method is a term that is often used in education and psychology to describe how learners can learn to make sense out of the world around them (Popoola , 2014). It has been observed that utmost learning achievements occur while playing games because the environment is usually relaxed and learning becomes interesting and fun. Maheshwari (2013), found that play-way method, offers informal and free atmosphere which gives the students a chance to learn concept, Mathematics and Language (Popoola, 2014).

The play-way instructional strategy has been identified as one of the strategies of cognitive development. When this method is employed, it becomes necessary on the part of the teachers to do a lot of planning for skillful execution of lessons with fun. Activities need to be arranged so as to explain simple concepts before complex concepts (Okon). This method encourages group activities which help to concretize the subject matter that is being introduced to the students.

Attitude

Attitude is defined by Lawsha and Hussaini (2011), these manifestations are evaluative responses to an object or a summary evaluation of an object of thought (Isah, Hamza and Ahmad, 2020). According to Joseph Onuoha and Eze (2013), attitude is a pivotal component of the human identity. As we encounter people, we observe the manifestation of such attitude in their behaviour such as love or hate, like or dislike etc. Obodo (2004) opines that the more exposure one has towards a given object, the more positive one's attitude is likely to be. Teachers have to make good instructional strategies and learning objects

(reinforcement) contingent upon the knowledge they want the learner to gain in Mathematics. This may help in bringing about the desired attitudinal change in learning. In view of this, Lawal (2008) states that the learner's attitude to a subject is influenced by two factors, namely; internal and external factor. The internal factor, according to him include: individual practical skill and certain amount of relevant concrete images, knowledge the learner already has above the concept to which the new attitude will be directed, The external condition he declared, are mainly the home attitude, success in the subject and the positive or negative attitude of the teacher. Studies indicate that for an attitude to be changed, the two factors need to be satisfied.

Attitude towards mathematics is just a positive or negative emotional disposition towards mathematics (Zan and Marino, 2007) and the students' attitudes towards mathematics is a major factor that influences students' choice of achievement in the subject (Abakpa and Fekumo, 2013).

Play-way and academic performance

So many studies have been done in these areas, some of them indicated that using play-way method in teaching improve students' academic performance while others have shown that there was no significant performance. Among them are:

Murtagh, Sawalma and Martin (2022), playful maths. The influence of play-based learning on academic performance of Palestinian Primary School Children. Grader appropriate test were administered to all students in two conservative school terms after forty teachers from different eight schools have received play-based pedagogies learning. At the end of the findings, it was discovered that play-base approach to learning mathematics enhances academic achievement.

Popoola (2014), who carried out research via the quasi experimental design on effect of play way method on the Numeracy skills of early basic Education School pupils in Ekiti State Nigeria, recommended, as a result of the findings, "That early child educators should use guided play with lots of activities to enhance Pupils achievement numerical skills.

Yen,Chen and Chan (2019), Enhancing Achievement and interest in mathematics learning through Math-Island .The finding showed that the conversational teacher led way of teaching mathematics have only led into having students who fall behind the standard of achievement as well as poor attitude but the introduction of the game-based learning environment called the Math-Island, increased the performance and raised a positive attitude towards mathematics.

Play is useful for mathematical learning and it is possible to engage the learners in complex mathematical concepts, suspend disbelief and makes the learners to see themselves as mathematicians were the findings of Williams (2014) on the research topic: The Relevance of Role play to the learning of mathematics in the primary classroom.

Another research carried out by Jonah N.O on the topic: Play-way instructional strategy and achievement of preschoolers in Number works in Uyo Local Government Area of Akwa Ibom State, stated that the use of the Play-way instructional strategy which involves lots of activities, enhances the numerical skills of the learners. Similarly, Fleming (2019) had it that children taught using the Play-way method will have a stabilize emotion, have a chance to live and work with others and raise their learning curiosity.

James and Ali, causes of poor performance in mathematics from the perspective of students, Teachers and parents."The study revealed strictness while teaching mathematics as the major cause of low achievement in mathematics by the perception of students".

charming method was recommended in order to enhance the capacities of the students so that they can become good in mathematics.

Hence, there is the need to develop a strategy or approach that might enhance students' active participation academic performance in mathematics such as the play way method Shehu Shagari college of Education Sokoto. This is the problem that prompted the researcher to conduct this study "Effects of Play Way Method on Performance In Mathematics Among Full Time and Part Time Students of Shehu Shagari College of Education (SSCOE) Sokoto State Nigeria.

Objectives of the Study

The purpose of this study was to determine the Effects of Play Way Method on Performance In Mathematics Among Full Time and Part Time Students of Shehu Shagari College of Education Sokoto State Nigeria.

. The specific objective of the study is to:

1. compare full time and part time NCE students' attitude in play way method and lecture method in mathematics of SSCOE Sokoto State.

Research Questions

1 THE FOLLOWING RESEARCH QUESTION WAS FORMULATED AND TESTED AT 0.05 LEVEL OF SIGNIFICANT:

1. WHAT IS THE EFFECT OF PLAY WAY TEACHING ON THE ATTITUDE IN MATHEMATICS AMONG SSCOE FULL TIME AND PART TIME STUDENTS?

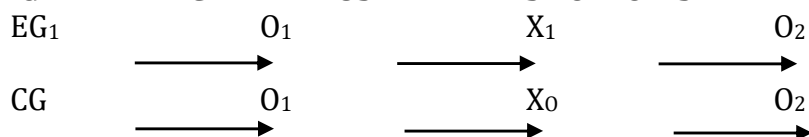
Null Hypotheses

BASED ON THE AFOREMENTIONED RESEARCH QUESTION, THE FOLLOWING NULL HYPOTHESIS WAS FORMULATED, AND WAS TESTED AT 0.05 LEVEL OF SIGNIFICANT:

H₀₁: THERE IS NO SIGNIFICANT DIFFERENCE BETWEEN THE MEAN MATHEMATICS ATTITUDE OF TWO GROUPS (PLAY WAY AND LECTURE METHODS).

RESEARCH METHODOLOGY

THE DESIGN FOR THIS STUDY WAS QUASI-EXPERIMENTAL RESEARCH DESIGNED WITH EXPERIMENTAL AND CONTROL GROUPS DESIGN ADOPTING PRE-TEST AND POST-TEST. THE STUDY USED TWO GROUPS: EXPERIMENTAL GROUP WITH PLAY WAY METHOD AND CONTROL GROUP WITH LECTURE METHOD. THE TWO GROUPS WERE TAUGHT FOR A PERIOD OF SIX WEEKS AND THEN POST-TESTED (O₂), IN ORDER TO SEE THE EFFECT OF PLAY WAY AND LECTURE METHODS ON THE STUDENTS' ACADEMIC PERFORMANCE IN MATHEMATICS BETWEEN STUDENTS. THIS IS DIAGRAMMATICALLY ILLUSTRATED AS FOLLOWS:



Population of the Study

THERE ARE GROUPS IN THE STUDY NAMELY FULL AND PART TIME STUDENTS IN THE YEAR 2020/2021 ACADEMIC SESSION. THE TARGET POPULATION WAS ALL NCE THREE STUDENTS WITH SIXTY (60) STUDENTS. THE AVERAGE AGE OF THE POPULATION IS 20 YEARS. SAMPLE AND SAMPLING PROCEDURE

ALL THE STUDENTS WERE PURPOSIVELY SELECTED, PURPOSIVE SAMPLING TECHNIQUE WAS USED HERE TO ENABLE THE RESEARCHER TO REACH THE SAMPLE DIRECTLY AND TO AVOID BIAS IN THE SELECTION. THE SUM OF 60 WAS PURPOSIVELY SELECTED WHICH IS IN LINE WITH ROSCOE (1975) WHO STATES THAT "THE APPROPRIATE SAMPLE SIZE FOR A STUDY RANGED FROM 30-500. INTACT CLASSES WERE USED TO AVOID DISRUPTING SCHOOLS PROGRAMME. INSTRUMENTATIONS THE FOLLOWING INSTRUMENT WAS USED IN THIS STUDY: MATHEMATICS PERFORMANCE TEST (MPT). MPT IS A 25 ITEMS MULTIPLE CHOICE OBJECTIVE TEST WITH FOUR OPTIONS (A,B,C AND D), EACH IS TO DETERMINE THE ACADEMIC PERFORMANCE OF STUDENTS IN MATHEMATICS OF SSCO. THE GPT WITH THE MARKING SCHEME WAS VALIDATED BY SENIOR LECTURERS FROM SSCO SOKOTO STATE. GPT WAS STRUCTURED ACCORDING TO COGNITIVE BLOOM TAXONOMY OF EDUCATION.

Result and Discussion

1. WHAT IS THE ATTITUDE OF FULL TIME AND PART TIME NCE STUDENTS IN MATHEMATICS IN SHEHU SHAGARI COLLEGE OF EDUCATION SOKOTO?

Summary of Mean and Standard Deviation of Experimental and Control Groups on Performance Scores of SSCO Students in Mathematics.

Groups	N	Mean	SD	Mean Diff.
Exp.	31	7.85	2.16	6.57
Lecture	20	6.67	2.51	
Total	51			

Table 4.1 shows that the mean and standard deviation of students in Experimental and Control groups were 7.85 and 6.67 while standard deviation as 2.16 and 2.51 respectively.

Hypotheses Testing

At 0.05 level of significance, null hypotheses was tested in this study. The hypothesis and analysis are as follows:

Hypothesis

H₀₁: THERE IS NO SIGNIFICANT DIFFERENCE BETWEEN THE MEAN MATHEMATICS ATTITUDE OF TWO GROUPS (PLAY WAY AND LECTURE METHODS).

Analysis of Mean Performance Scores of Students Exposed to STAD, Inquiry and Lecture methods Using t-test

Groups	N	Mean	SD	df	P	Decision
Exp.	31	7.85	2.16	6	0.00	Rejected
Lecture	21	6.67	2.51			
Total	52					

× Significant at $P \leq 0.05$

The table shows that, the mean and standard deviation of students in Experimental and Control groups were 7.85 and 6.67, and standard deviation as 2.16, and 2.51. respectively. The analysis also showed that at $\alpha = 0.05$ level of significance, $p=0.00 < \alpha = 0.05$, $df=6$. The result indicated that there was significant difference between the groups; hence the null hypothesis which says no significant difference was rejected.

Discussion of Results

A t-test was conducted to examine the Effects of Play Way Method on Performance In Mathematics Among Full Time and Part Time Students of Shehu Shagari College of Education (SSCOE) Sokoto State Nigeria. So many studies have been done in these areas, some of them indicated that using play-way method in teaching improve students' academic performance while others have shown that there was no significant performance. The findings of this study were presented in the following hypothesis: Hypothesis number one was rejected on the account that there was significant difference in the academic performance of students taught mathematics with play way method and those taught with Lecture method. This indicates that students exposed to play way method performed significantly better than those exposed to lecture method. This study concretized the earlier findings of several scholars such as: Yen, Chen and Chan (2019), who worked on way play way method and found students exposed to play way did better than those engaged in lecture method. This is agrees with the findings of Popoola (2014), and Williams (2014). This is supported by the findings of Murtagh, Sawalma and Martin (2022), playful maths. The influence of play-based learning on academic performance of Palestinian Primary School Children. Grader appropriate test were administered to all students in two conservative school terms after forty teachers from different eight schools have received play-based pedagogies learning. At the end of the findings, it was discovered that play-base approach to learning mathematics enhances academic achievement.

Conclusion

The findings of this study indicated that students taught mathematics with play way method have indeed performed significantly better than students who were taught with

Lecture methods. It could be seen that these new strategies can now be used to replace the old method of conventional teaching and learning of mathematics.

Summary of the Study

The study examined the “Effects of Play Way Method on Performance In Mathematics Among Full Time and Part Time Students of Shehu Shagari College of Education (SSCOE) Sokoto State Nigeria”. This study was guided by one objectives, research questions and hypothesis respectively.

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