

POWERPOINT PRESENTATIONS ON EARLY CHILDHOOD EDUCATION'S ACHIEVEMENT AND RETENTION IN BASIC TECHNOLOGY IN FEDERAL UNIVERSITY OF TECHNOLOGY STAFF SCHOOL, MINNA, NIGER STATE

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Abstract

The study examined the influence of Power Point Presentations on early childhood education's achievement and retention in basic technology in Federal University of Technology Minna Staff School. Two research questions and two hypotheses were formulated to guide the study. Design used for the study was Quasi experimental design. 64 pupils were selected as sample for the study. A multi stage sampling technique was used for allocation of class for the study. The study examined PowerPoint instructional method to the conventional teaching method on basic technology. Basic Technology Achievement Test (BTAT) was the main instrument used for the data collection. The validation of the instrument was done by 3 experts in the field of technology. The reliability coefficient for BTAT was 0.95 using KR - 20. Research questions were analysed using mean and standard deviation. Null hypotheses were tested at 0.05 level of significance using ANCOVA statistics. The finding of the study revealed that PowerPoint instructional method was more effective in helping younger students to assimilate faster at 10% the same time promote permanent retention. Based on the findings of this research, it was recommended among others that PowerPoint presentations should be adopted in all schools especially at childhood education for enhancing students' achievement and retention in Nigerian primary education.

Keyword: Achievement, Early Childhood, Powerpoint Presentations and Retention

Introduction

Many countries of the world today are making considerable effort on the use of Microsoft PowerPoint for aiding students learning and so should not be left to chance in Nigeria. According to Collins (2011), PowerPoint is a sub-set of Information and Communication Technology (ICT) programme developed by Microsoft. Collins went further to say that PowerPoint is an application programme of presentation that found in Microsoft Office which consist of individual pages or slides that allow the user to present the key phrases of line messages and as well include only essential information. It actually means that PowerPoint presentation is mostly used to display the important points to the viewers. Nyaga (2012) explained that for larger audience, PowerPoint presentation displayed on a computer could be best projected using a Liquid Crystal Display Projector (LCD). He therefore explained further that PowerPoint presentation could be used in the classroom for supporting students' learning with the combination of computer and projector to display slides for illustration of a lesson.

According to Jones (2012), PowerPoint presentation like other forms of visual presentation supports students' learning. A Microsoft PowerPoint presentation is a technology used for instruction that helps learners to have easy understanding of concepts. Jones observed that students tend to enjoy the PowerPoint presentations because it captures their attentions, especially when multimedia resources are added to illustrate the text in a lesson. Microsoft PowerPoint presentation added richer visual presentations such as multi-colour texts, pictures, animations, graphics and videos which helps to comprehend the concept at focus especially with the use of multimedia resource.

Vygotsky (2012) observed that learning is facilitated when all senses of the learner are active at the point of receiving instruction because the new information is conveyed with ease through the sensory receptors such as ears, nose, skin as well as eyes and brain especially in early childhood education. Vygotsky went further to say that children should be a "catch them young" by teaching them survival capacities, develop their endurance capacities, and develop positive attitude for survival

which goes a long way to determine an eventual end. Having seen the merits behind adopting 'catch them young', the question that comes to the mind is what modalities, methods and measures to be adopted for the early childhood education for the early start (Williams 2011). He went further to say that when a child acquired proper education from the early stage, that child must have understood and have the capacity to know with the help of additional educational resources/materials.

PowerPoint presentations in Nigerian early childhood education enhance the child's cognitive achievement and retention. Cognitive achievement connotes attainment in a school subject as symbolized by a score or mark on an achievement test (Ndu, 2011). In the research of Anderson (2012), cognitive achievement is dependent upon several factors among which are the instructional methods, learning environment and the learner. Retention is the repeat behaviour and performance earlier acquired by the learner, elicited after an interval of time (Jossy, 2010). Jossy went further to say that the repeated behaviour and performance implies that a learner who repeats an error is said to have retained the information or knowledge learnt. It therefore affected by degree of reinforcement, the method of learning and the learner's memory capacity among others (Clarke, 2012). Since it is an assumption that PowerPoint presentation could enhance students to learn, it is equally important to determine its ability to enforce learning retention, in other words, the transfer of learning and the retention of learning goes together. The implication of these is that evaluation needs to extend beyond post test for a consideration of individual child in terms of their ability level to generate – and then transfer learning (Lemant, 2011). He went further to say that a high quality instructional strategy such as PowerPoint presentations may have an implication which is worth exploring as a prerequisite to cope with the dynamics of changing world in the process of teaching and learning especially as it relates to basic technology on early childhood education.

Statement of the Problem

Early childhood education exposes the children into great experiences as teaching and learning is grouped into four principal types of activities, exposition, participation, interaction and evaluation. The child should be able to undergo perceptual experience, be able to respond to stimuli perceived and practice the behaviour to be learned. But it appears Nigerian early childhood education is making too little effort to ensure their children are familiar with the use of ICTs facilities in the classroom. This could be evident in the current practices in the teaching and learning methods employed by the basic technology teachers especially in the early childhood education, hence, this study is intended to make a case for the exploration of PowerPoint presentations as an innovative teaching approach to teaching and learning of basic technology on early childhood education.

Purpose of the Study

The main purpose of the study was to determine the influence of PowerPoint presentation on early childhood education's achievement and retention in basic technology in Federal University of Technology Staff School, Minna Niger state. Specially, the study sought to:

- Find out the influence of PowerPoint presentation on children's cognitive achievement in basic technology in Federal University of Technology Staff School, Minna.
- Determine the influence of PowerPoint presentation on children's cognitive retention in basic technology in Federal University of Technology Staff School, Minna.

Research Questions

- The following research questions were raised to guide the study.
1. What is the influence of PowerPoint presentation on early childhood education cognitive achievement in basic technology subject?

2. What is the influence of PowerPoint presentation on early childhood education cognitive retention in basic technology subject?

Research Hypotheses

The following research hypotheses were raised to guide the study at 0.05 level of significance.

- H₀₁: There is no significant difference between the mean scores of experimental and control group in the cognitive achievement of early childhood education in Federal University of Technology Staff School.
- H₀₂: There is no significant difference between the mean scores of experimental and control group in the cognitive retention of early childhood education in basic technology subject in Federal University of Technology Staff School.

Research Methodology

The design adopted for the study was quasi-experimental design. The design was considered appropriate for this study due to the intact classes were used. The design was modified for this study by adding retention test.

The design format					
E	O ₁	X	O ₂	Y	O ₃
C	O ₁	-	O ₁	Y	O ₃

- Where, E = Experimental
 C = Control
 O₁ = Pretest
 X = PowerPoint Instruction
 - = Conventional Instruction
 O₂ = Posttest
 Y = Delay period of two weeks after Post test
 O₃ = Retention Test

Population of the Study

The population of the study comprised of all the primary two children taken from the five arms. The children population made up of 186 children from Federal University of Technology Staff School, Minna.

Sample and Sampling Technique

The sample size for this study made up of 63 children and controls group 33 children. A multi stage sampling technique was used for allocation of arm for the study. At first purposive sampling technique was used to select three arms that have sound computer and projector out of five arms of Primary 2. Thereafter random sampling was also used to draw two arms from the three arms, then to allocate one arm each to experimental and control groups here-draw method was used. Intact class in each arm of the class of Primary 2 early childhood Basic Technology was used.

Results and Discussion

Research Question 1: What is the influence of PowerPoint presentation on early childhood education cognitive achievement in Basic Technology subject?

Table 1 Pretest and Posttest mean score and standard deviation of the experimental and control cognitive achievement of early childhood education.

Group	N	Pretest		Posttest	
		Mean	SD	Mean	SD
Experimental	30	0.933	1.080	18.500	5.734
Control	33	0.878	0.992	15.884	5.288

From the table above, the experimental group mean score of 0.933 while a posttest mean score of 18.500 and the control group mean score of 0.878, a post test mean score of 15.969. Also, the results from the table revealed that posttest mean gain of 2.530 was recorded in favour of experimental group. The result showed that children in experimental group performed better than those in control group.

Research Question 2: What is the influence of PowerPoint on early childhood cognitive retention in Basic technology subject?

Table 2: Pretest and retention test mean score and standard deviation of the experimental and control in cognitive retention.

Group	N	Pretest		Posttest	
		Mean	SD	Mean	SD
Experimental	30	0.933	1.080	18.800	6.233
Control	33	0.878	0.992	15.484	4.783

The results from table two showed that the experimental group pretest mean score of 0.933, a retention test mean score of 18.800 and the control group pretest mean score of 0.878 and a retention test mean gain of 3.315 was recorded in favour of experimental group. This implies that children in experimental group retained better than those in control group.

Table 3: ANCOVA on the cognitive achievement test scores of Basic Technology subject on Children's PowerPoint presentations and conventional teaching method

Source	Sum of Square	df	Mean	F	Significant Decision
Model	699.492	2	349.746	16.793	.000 Significant
Intercept	7378.704	1	7378.704	354.295	.000 Significant
Pretest	598.882	1	598.882	28.756	.000 Significant
Group	87.847	1	87.847	4.218	.044 Significant
Error	1249.587	60	20.826		
Total	20532.00	63			
Model	1949.079	62			

The results from the table 3 above revealed that F value of 4.218 for the group showed a significant level of 0.044 less than 0.05 level of significance. This means that there is no significant

difference between the mean scores of experimental and control groups in the cognitive achievement level of children in Basic Technology subject in Federal University of Technology Staff School.

ANCOVA on the cognitive retention test scores of Basic Technology subject on children on PowerPoint presentations and conventional teaching method

Source	Sum of Square	df	Mean	F	Significant Decision
Model	936.159	2	465.079	25.331	.000 Significant
Intercept	6943.224	1	6943.224	378.176	.000 Significant
Pretest	757.455	1	757.455	41.256	.000 Significant
Group	153.792	1	153.792	8.377	.044 Significant
Error	1161.587	60	18.360		
Total	20375.000	63			
Model	2913.746	62			

From the Table 3 above, F value 8.377 for the group which was significant at 0.05 level. It revealed that there is no significant difference between the mean scores of experimental and control group in the cognitive achievement level of the children on Basic Technology subject. There is also significant difference between the scores of experimental and control groups in the cognitive retention of the children in Basic Technology subject.

Discussion of the Results

The results from table 1 and table 2 indicated that the use of PowerPoint presentation enhances children's cognitive achievement and retention. The results also showed that the mean score of children in experimental group where PowerPoint presentation instructional method was used was higher with 18.500 than control group 15.9697 in conventional method.

Table 3 further revealed significant difference at 0.04 which is less than 0.05 and F value 8.377. Therefore, significant difference ($P < 0.05$) between the mean score of experimental and control groups in the cognitive achievement of early childhood children in Basic Technology.

Conclusion and Recommendation

The findings from this research revealed that early childhood education taught using PowerPoint presentation have higher cognitive retention than those taught using conventional method. It therefore means that PowerPoint presentations should be explored to promote children's cognitive achievement and retention in Basic Technology subject in early childhood education nationwide.

Being a relatively new technological innovation, effort should be made to expose prospective and practicing teachers to power-point education.

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