



EFFECTS OF POWERPOINT PRESENTATION ON ACADEMIC PERFORMANCE OF OFFICE TECHNOLOGY AND MANAGEMENT STUDENTS IN WEBPAGE DESIGN

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Abstract

The study examined the effects of PowerPoint Presentation on academic performance of Office Technology and Management Students in Webpage Design in Federal Polytechnic, Bauchi. In order to achieve this, two specific purposes and two research questions were raised and two null hypotheses were formulated for the study. The study adopted quasi-experimental research design, specifically, pretest posttest non-equivalent control group research design. The accessible population comprised 54 Higher National Diploma Students of Office Technology and Management (OTM), Federal Polytechnic, Bauchi. The entire population was used from the two streams. The instrument adopted for data collection was the Advanced Webpage Design Performance Test (AWDPT). The instrument consisted of two sections. Section A was the pre-test while section B was the post-test. The instrument was duly validated by two experts. A reliability coefficient of 0.80 was obtained, using Cronbach Alpha reliability. The treatment period lasted for 4 weeks. The data collected for the research questions were analysed using mean and Standard Deviation. The hypotheses of the study were tested using Analysis of Covariance at 0.05 level of significance. The findings of the study revealed that teaching with PowerPoint has positive effect in improving Office Technology and Management students' academic performance in Webpage Design. Based on the findings, it was concluded that teaching with PowerPoint presentation positively affects the performance of students in Webpage Design. Therefore, four recommendations were made among which are; OTM teachers should integrate the use of PowerPoint instructional packages in teaching Webpage Design as it enhances academic performance of OTM students; teaching without PowerPoint should be reduced, because it is considered to be ineffective in improving students' performance in Webpage Design.

Keywords: *Office Technology and Management, PowerPoint Presentation, Advanced Webpage Design.*

Introduction

The advent of Information and Communication Technology led to a comprehensive review of the secretarial studies curriculum, resulting in its evolution into Office Technology and Management. The OTM curriculum was introduced in 2004 by the National Board for Technical Education (NBTE). The review of Secretarial studies curriculum was to make its recipientstobeICT-compliantandfitappropriatelyintheworldofwork,mostespecially, in modern offices that are characterized by various types of state of the art communication technology equipment (Atueyi, 2010). The objectives, theoretical and practical contents of the new curriculum are geared towards integrating students of OTM programme into the world of technology. It is believed that Nigerian polytechnics are not just another set of institutions of higher learning, as they are not only centres of learning and research but also institutions where the problems facing the society could be



resolved with knowledge, skills and competencies acquired through using modern technologies. The success of any curriculum depends on the way it is being implemented in terms of teaching.

According to Udo and Udosen (2010), most of our teachers are used to chalk-talk method of teaching, making the students to be passive learners and this contradicts the students-centered-learning-approach recommended by the Federal Ministry of Education (Federal Republic of Nigeria, 2014). Meanwhile, interest in the use of modern technology in every discipline is increasing in all nations of the world. Countries strive to produce more and better trained students through the adoption of various educational technologies and innovative techniques. Educational technologists believe that if educational institutions are to prepare the students to meet the challenges of the new millennium, then, teaching must be done using educational technology that are relevant to the 21st century world of work (Bartsch & Cobern, 2008). This, therefore, calls for teachers to incorporate educational technology in the teaching and learning process, thereby giving the students the opportunity to engage actively in the lesson as well as develop technical skills and explore in more details the content taught. This will enhance academic performance especially in office technology and management.

The growth of Information and Communication Technology (ICT) is reshaping teaching and learning processes in higher education (Pulkkinen, 2007). Nigeria, having observed the trend of events and change in the dimension of, and pursuant of education with emphasis on ICT in other developed nations, has taken necessary steps by establishing National Information Technology Development Agency (NITDA). The agency is saddled with the responsibility of facilitating the integration of ICT in key areas of the economy, education inclusive (NITDA, 2008). One of the pillars of successful implementation of effective Office Technology and Management programme at all levels is the availability and adequacy of teaching resources. This is in form of facilities, equipment and services needed to foster instructional deliveries and skills development to ensure academic performance. There are a lot of teaching facilities and techniques among which include PowerPoint presentation.

PowerPoint is an Information and Communications Technology (ICT) program developed by Microsoft in 1987. It is an application program of presentation bundled in Microsoft office (El-Ikhan, 2010). Information prepared on a computer could be better projected for larger audience using a Liquid Crystal Display (LCD) or Digital Light Processing (DLP) Projector. PowerPoint presentation could be used in the classroom for supporting students' learning by combining computer and projector to display slides for illustrating a lesson.

Although, Microsoft PowerPoint has not been around for long many feel like they have always had PowerPoint because it seems ubiquitous, from business and education to politics and leisure. The world appears to be fast approaching the situation in which one must have a PowerPoint presentation when presenting at local, national or international conferences. In the corporate world, PowerPoint has become an indispensable tool such that appearing at a meeting without PowerPoint would be unwelcome and vaguely pretentious, like wearing no shoes (Parker, 2001).

The use of PowerPoint as a teaching tool is becoming more and more widespread with instructors in teacher education, especially with those who wish to integrate multimedia technology into their teaching and model technology use in the classroom, especially the Office Technology and Management. The sheer popularity of this presentation tool comes from the belief that representation of information using auditory and visual inputs improves learning, (Mayer & Moreno, 2003).

In the present era called "The Computer Age", Microsoft Power point could be used to teach any topic. This will reduce abstractness and motivate students thereby enhancing better understanding on the part of learners. PowerPoint special effects and features can be used to make an outline presentation exciting and complete. Such things as slide transitions, timings, movies, sound animation and hyperlinks can be used for this purpose.

With the advancement in information and communication technology, PowerPoint presentations have been extensively used in higher education because of its ease of use, user friendliness, structured presentation and multimedia approach. PowerPoint helps the teacher present (and illustrate, demonstrate, among others.) large amounts of information to large audiences in limited time. It gives the teacher total control of content, pace, organization and direction. While non-projected method of teaching has its own advantages, it has been criticized for its lack of student engagement and inability to stimulate higher order thinking. Student learning



occurs through active engagement with the subject matter and therefore, non-projected method of teaching is ineffective for such engagement (Ramsden, 2008).

Furthermore, transmission of information and its transformation into knowledge are not the same (Race, 2007). For transformation to occur, students need an opportunity to be engaged in deep processing of the subject matter. It is clear that the simple transmission of information through a projected (PowerPoint) technique of teaching is an effective approach for meeting the goals of helping students become independent, critical problem solvers, able to interact with their peers in social and employment situations.

Statement of the Problem

The Office Technology and Management curriculum was designed to replace the old Secretarial Studies Curriculum. It has been noted that most Nigerian teachers use talk- chalk/traditional method of teaching which makes the students passive in learning. This traditional method makes the students passive in class, which contradicts the student-centred- learning-approach recommended by the Federal Ministry of Education (FRN, 2004). This situation may be responsible for the poor academic performance of students in webpage design in polytechnics. In confirmation of this statement, researchers' assessment of the recent performance of OTM students in webpage design in the polytechnics revealed that students' performance in the course is poor. It was also discovered that a good number of students do not pass webpage design at first sitting. It could be that the manner in which subjects are taught by teachers in the classrooms has been affecting students' performance. Could this be attributed to the teaching method adopted by the teachers, most of whom do not utilize the new instructional teaching techniques, especially the application of PowerPoint? This study is conducted to fill that gap.

Research Questions

The following research questions were formulated to guide the study:

1. What is the effect of teaching with PowerPoint presentation on OTM students' academic performance in webpage design in The Federal Polytechnic, Bauchi.
2. What is the effect of teaching without PowerPoint presentation on OTM students' academic performance in webpage design in The Federal Polytechnic, Bauchi.

Methodology

The design of this study was quasi-experimental research design. Specifically, non-equivalent control group research design with pretest and posttest involving two intact classes were used for the study. Quasi-experimental research design is normally used where the researcher cannot randomly sample and assign the subjects to groups. The subjects in this type of design were not randomly assigned; rather intact classes were randomly assigned to the treatment groups. The target population of the study comprised all the Higher National Diploma (HNDII) Students in Federal Polytechnic, Bauchi, because it is believed that they have been introduced to the ICT courses at the National diploma level. The total number of the students was 54. Advanced Webpage Design Performance Test (AWDPT), designed by the researchers was the instrument used for data collection. Advanced Webpage Design Performance Test (AWDPT), comprised 30 objective questions with four options. The topics ranges from networking, internet to introduction to HTML (Webpage Design) and scores obtainable is 0-30 marks. Advanced Webpage Design



Performance Test was duly validated by two experts and has a Cronbach Alpha reliability coefficient of 0.80. The students were pretested before the treatment. The treatment (teaching with PowerPoint) was given to the experimental group for a period of one month while the control group was taught without PowerPoint for the same period. Posttest was given to the students after the treatment. The data collected were analyzed using mean and standard deviation for the research questions. The hypotheses were tested using Analysis of Covariance (ANCOVA) at 0.05 level of significance.

Results

Research Question

What is the effect of teaching with PowerPoint presentation on OTM students' academic performance in webpage design in The Federal Polytechnic, Bauchi?

To answer research question, the test obtained from students in Advanced Webpage Design Performance Test (AWDPT) and analysed using the mean and standard deviation for experimental group were calculated and presented in Table 1.

Table 1: Mean of pre-test and post-test scores of treatment group taught Webpage Design with PowerPoint (Experimental Group)

Group	N	Pretest		Posttest		Mean Difference
		Mean	SD	Mean	SD	
Experimental group (With PowerPoint)	37	14.43	4.23	24.51	1.61	10.08
Control group (Without PowerPoint)	17	13.88	4.72	12.24	0.90	-1.64
Mean & Standard Difference		0.55	0.49	12.27	0.71	

Source: Field Experiment

The data presented in Table 1 reveals that the treatment group taught webpage design with PowerPoint presentation had mean and standard deviation scores of (mean = 14.43; SD = 4.23) in the pretest and mean and standard deviation scores of (mean = 24.51; SD = 1.61) in the post-test. This gives a mean difference of 10.08. The control group taught without PowerPoint had mean and standard deviation scores of (mean = 13.88; SD = 4.72) in the pretest and (mean = 12.24; SD = 0.90) in the posttest. This gives a mean difference of -1.64. The mean difference between the experimental and control groups is (mean = 0.55; SD = 0.49) for the pretest and (mean = 12.27; SD = 0.71) for the posttest. This shows that the group taught with PowerPoint performed better than the group taught without PowerPoint. This means that teaching webpage design with PowerPoint is effective in improving the academic performance of HND students.

H₀₁: There is no significant treatment effect of teaching with PowerPoint on the academic performance mean scores of OTM students in webpagedesign.



Table 2: Summary of Analysis of Covariance (ANCOVA) for Test of Significance of Effect Treatment (teaching with PowerPoint) on academic performance of OTM students in Webpage Design

	Sum of Squares	Df	Mean Squares	F	Sig.
Covariate	1762.159 ^a	2	881.080	448.653	.000
Intercept	1723.697	1	1723.697	877.720	.000
Pretest	6.147	1	6.147	3.130	.083
Treatment	1762.159	1	1762.159	897.305	.000
Gender	112.444	1	112.444	1.439	.233
Treatment * gender	43.053	2	21.527	.275	.760
Error	100.156	51	1.964		
Total	24885.000	54			
Corrected Total	1862.315	53			
<i>a. R Squared = .946 (Adjusted R Squared = .944)</i>					

Source: Field Experiment

The data presented in Table 2 shows F-calculated values for effects of treatment on students' academic performance in webpage design. The Table shows that there was significant effect of treatment on academic performance of students in Webpage Design (F= 897.305; p<0.05). Hence, the null hypothesis that stated that there is no significant treatment effect of teaching with PowerPoint on the academic performance mean scores of OTM students in webpage design was therefore rejected. This implied that treatment has effect on the academic performance of students in Webpage Design. This means that the effects observed are due to the main treatment (teaching with PowerPoint) given to students.

Table 3: Estimated marginal means of both the treatment and control groups

Groups	Mean	Std. Error
Treatment	24.527	0.231
Control	8.206	0.340

The data in Table 3 shows estimated marginal means for the two groups, this is the adjusted mean after the covariance. Table 3 reveals that the participants in experimental group performed better than their counterparts in control group because they had the highest adjusted post mean score (mean 24.527). The implication here is that teaching Webpage Design with PowerPoint presentation is significantly effective for improving the academic performance of OTM students.

Discussion of Findings

This study was specifically carried out to determine the effect of PowerPoint presentation on academic performance of Office Technology and Management Students in webpage design in The Federal Polytechnic, Bauchi, Nigeria. The finding reveals that the treatment group taught webpage design with PowerPoint presentation performed better than those taught without PowerPoint as indicated in their mean score of 14.43 and 24.51 respectively. It was further found that there was significant difference between those taught with PowerPoint and those taught without PowerPoint as shown in the result of the test of null hypothesis on. This findings collaborated with the findings of Ayotola and Abiodun (2010) who reported that students taught using computer animation (PowerPoint) performed better in achievement in a subject than when taught using the traditional method (without PowerPoint). Based on this reason teachers are charged with the responsibility of improving the ability of the students to learn and read the information given to them. Hence the ability of the students



to retain and remember what they have been taught by the teacher depends heavily on the appropriateness of the instructional material and method of instruction used. In addition, the present study has indicated that PowerPoint-aided education enhances student's achievements and concentrates their students' attention on the webpage design course. The result also supports Gokhan (2013) who found out that students taught using computer animation performed better than their counterparts taught using the traditional method with PowerPoint presentation and related video.

Conclusion

Based on the findings of this study which reveals that teaching with PowerPoint has a positive effect on the academic performance of Office Technology and Management Students in Webpage Design. It was therefore concluded that teaching with PowerPoint Presentation is better than the traditional method of teaching because of its enormous benefits to Students' academic performance. In this case, it means that teaching without PowerPoint Presentation is no longer effective and continuous use of it may affect the academic performance of Office Technology and Management students in Webpage Design and Polytechnic graduates, which will further have adverse effect on the economy at large.

Recommendations

Based on the finding of this study, the following recommendations were made:

1. OTM Teachers should integrate the use of Power Point instructional packages in teaching webpage design as it enhances academic performance of OTM students.
2. Teaching without PowerPoint should be reduced, if not stopped because it is considered ineffective in improving students' performance in webpagedesign.

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