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Utilization of PowerPoint for Academic Learning at the School of Information and Communication Technology, Federal University of Technology, Minna

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Abstract

This study is an assessment of undergraduate students' use of PowerPoint as a tool for academic learning at the Federal University of Technology, Minna. The study employed survey to collect data from 250 students selected through a stratified random sampling method from the School of Information and Communication Technology of the University. The response rate was 86%. The overall findings revealed that the majority 91(36%) of the respondents strongly agreed that powerpoint presentation holds their attention. While 93(37%) strongly disagreed that animations in powerpoint slides distract their attention during lectures. In addition, 94(38%) strongly disagreed that powerpoint presentations increased the likelihood of inappropriate classroom behavior. Finally, 91(36%) strongly agreed that visual images presented in powerpoint presentations during lectures help them to recall contents during examinations. The study concluded that, students have shown preference for powerpoint presentation for lectures as compared to the traditional lecturing method where black or white boards are used. The study recommends that an attempt should be made at all the levels to create an ideal atmosphere by making the required skills and infrastructure available to exploit powerpoint tool for better and effective teaching.

Keywords: PowerPoint, ICT skill, visual aids, knowledge retention, recall information

Introduction

Information and communication technology is a principal driver in our Information Society of which the immediate consequences for educational practice can be observed. Following this evolution, several authors have mentioned the need to shift from the traditional classroom setting, where the student is seen as a passive consumer of educational knowledge, to a classroom in which learners are considered active participants and where collaboration and sharing information in a resource-rich environment is given precedence especially with the aid of ICT-

enabled visual communication devices.

Visual communication is the transmission of information and ideas using symbols and imagery. One of the three main branches of communication which involves the Verbal (speaking) and non-verbal (tone, body language) is Visual communication. Visual communications are immediate which means that the human brain deciphers images almost simultaneously unlike the linear decoding and sequential manner that takes more time to process of language or verbal communication.

Visual communications are memorable. Researchers have shown that the short-term memory is where words are processed and in this place, only 7-bits of information are retained while images are processed into the long-term memory where it is difficult to lose. The evocative characteristics of visual communications is that visual affects human beings emotionally. Through the powerful nature of visual communication, it affects humans both cognitively and emotionally unlike text. Some studies have shown that graphics, underscores can speed up and increase our level of understanding, recollection and retention (Image 360, 2016).

Effectiveness of PowerPoint in classroom teaching and learning has been the main topic of many articles, however, an assessment of the ways instructors make use of it in their classrooms is still limited in research. Some argue that it has negative effects according to the poor use of it. Abdelrahman, Attaranand Hai-Leng (2013) says that student's feel ignored in lecture halls when the instructor is focusing on the presentation and not paying attention to the class. Instructor may not be able to leave the podium because he doesn't have a remote mouse to advance to the next slide. A good PowerPoint presentation can enliven a lecture by offering imagery to support key points, and having a prepared set of slides can keep professors from straying off on tangents. Many students also praise PowerPoint slides for being easy to read, noting that professors' chalkboard scrawls can be illegible. Nevertheless, students say some professors simply dump their notes into PowerPoint presentations and then read them, which can make the delivery even flatter than it would be if the professor did not use slides.

PowerPoint, when effectively planned and used, can enhance instruction. Opinions are divided on the effectiveness of this ubiquitous software. While some argue that PowerPoint can be a wonderful instructional device, others contend that it can be pervasive. PowerPoint developed by Microsoft, is a computer application that is designed specifically for displaying content to a target audience. Many lecturers adopt this PowerPoint for teaching in the classrooms because it is effective instructionally. Writing lengthy knowledge on the blackboard is very tiresome.

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PowerPoint helps lecturers to spend more time on teaching the content of the slides displayed which also improve the learning interaction of the students. The thinking process and the attention of the learners are attracted with the multimedia integration of PowerPoint which include, videos, audio, animations and hyperlink document which are incorporated in the PowerPoint slides. It also presents material efficiently (Chou, Chang & Lu, 2015).

PowerPoint presentation is visual compared to the verbal method of communication. Research suggests that we are far better at learning and remembering content we've seen in pictures than as text, a phenomenon known as the Picture Superiority Effect. There are several reasons why this occurs. One is that 'picture stimuli' embeds into memory twice, as both verbal code and as an image. Words only generate a verbal code (Hobbs, Clarke, & Rathborne, 2017).

In higher education, the conventional approach to delivering lectures is rapidly giving way to PowerPoint presentations. Usually the slide ware is combined with a computer, an LCD projector, and a screen in the classroom setting. So many colleges and universities have rooms equipped with technology necessary for any instructor to display information via PowerPoint presentations. Studies have shown that students like to be taught using PowerPoint and that students believed that they learned more from PowerPoint lectures. Despite the effectiveness of PowerPoint presentations to both teachers and students, they are one of the most easily misused teaching aids (Abdelrahman et al, 2013). Therefore, this current study sought to investigate students' perceptions of powerpoint as a learning tool in the School of Information and Communication, Federal University of Technology, Minna.

Statement of the problem

Visual aids are important in education system. Visual aids are those devices which are used in classrooms to encourage students learning process and make it easier and interesting. Visual aids are the best tool for making teaching effective and the best dissemination of knowledge. As it is known that visual aids are one of the important teaching facilities and they are essential during teaching, they facilitate and calm students to study easily. Visual aids may provide the chance to learn visually and are more effective and easy for human beings. During teaching with models and visual aids, students make efforts to identify, recognize its functions and try to have its interpretation, and understand its use (Ghulam, Khuram, Naqvi & Nadeem, 2015). Evidently, some quarters strongly believe that learning without the aid of visual communication is said not to be permanent and students believe that learning is dull without the use of Visual

Communication. It is based on this notion that this current study aimed at investigating students' perception of PowerPoint as a learning tool in the context of the Federal University of Technology, Minna.

Objectives of the study

The study sought to:

1. Find out the ways PowerPoint Presentation improves students' learning compared to conventional lecture methods at FUT Minna.
2. Determine how the use of visual aids embedded in the PowerPoint presentation has sustained the students' interest in class.
3. Investigate students' reaction to the use of PowerPoint presentation tool during lectures.
4. Determine how PowerPoint presentation motivates and improved the learning of students at FUT Minna.
5. Determine the extent to which powerpoint is used for academic learning at the School of Information and Communication Tecnology, Federal University of Technology, Minna.

Research questions

The following research questions were designed to guide the study:

1. In what ways have PowerPoint improved students' learning compared to conventional lecture methods at FUT Minna?
2. In what ways have visual aids embedded in the PowerPoint Presentation sustained students' interest in class?
3. What are the relative reactions of students to the use of PowerPoint Presentation as a teaching aid?
4. In what ways have PowerPoint motivate and improved the learning of students at FUT Minna?
5. What is the extent to which powerpoint is used for academic learning at the School of Information and Communication Tecnology, Federal University of Technology, Minna?

Literature review

Recent empirical studies

A pilot study by Muthukuar (2016) investigated the use of balk/white board based teaching and PowerPoint based teaching among Physiotherapy Lovely Professional University using convenient sapling of lecturers who were taking Physiotherapy subjects for both undergraduate and post graduate students irrespective of the age, sex, experience and higher qualification. 15

lecturers were asked to indicate their desired answers within 15 minutes. The results show that the majority 90% of the participants preferred power point presentation to teach large number of students rather than black/white board teaching, while some of the participants felt more time was consumed to prepare power point presentations. Many of the participants acknowledged that power point presentation was helpful to visualize diagrams, photos videos, better than black/white board teaching. The study concluded that the lecturers preferred black/white board teaching or power point based teaching based on their convenience and other features.

Another study by Mohamad and Ahmad (2016) examined the perception of students towards the use of visual teaching aids by history teachers and the level of understanding of the concept of history. Data were collected from 192 students comprising of 85 male students and 107 female students. Findings of the study shows that there is no difference in students' perceptions towards the use of visual teaching aids by history teachers based on genders but the perception of students' on the use of electronic and non-electronic visual teaching aids by history teachers is positive, and there exists a significant difference in understanding the concept of history among genders, and there is no relationship between students' perception on the use of visual teaching aids by history teachers with the understanding of the concept of history among students. The study concluded that students responded well to the effectiveness of the application of visual teaching aids by their history teachers. Also, understanding the concept of history can be enhanced if visual materials are used in explaining the concepts of history.

Yet, in an experimental study by Mondal (2017) to investigate the effectiveness of ICT on achievement in higher education and to what extent the ICT tools may help the students to achieve their goals, based on both pre-test and post-test, where students were instructed to apply a PowerPoint programmed saved to CD-ROM. A purposive sample of higher secondary education students. Findings shows that the post-test achievement means scores of experimental group and control group's shows differences. The study concluded that given the present expensive use of ICT at all levels and for all subjects, it is imperative that pre-service teachers should learn the new technology and pre-service training should be given to the existing teachers.

Further more, Kitchakarn (2015) in a survey study to investigate attitudes toward using computers as a learning tool among undergraduate students in a private university. Variables which might be potential antecedents of attitudes towards

computer including gender, experience of using computers and perceived abilities in using programs were examined on 192 undergraduate students who enrolled in two fundamental English courses (EN 012 and EN 013) having the total population of 400. The study found that gender and experience were not found to affect students' attitudes using SPSS/Window program to analyze the data collected. Also, years or experience of using computers did not have an impact on attitudes. The study concluded that students had positive attitudes towards using computers as a learning tool and that gender and experience does not affect student's attitudes in using computers as a learning tool.

In addition, Kumar (2016) in a study investigated the importance of 3-D Animation in learning environment. There are many ICT tools and approaches that are applied in the educational field to enhance the students' exam performances as well as students' learning experiences. The advancement of 3-D animation software has led to the development of many innovative learning. The study found that the advancement of 3-D Animation software such as Auto desk Maya, 3-D Studio Max, Cinema 4-D and Soft image has led to the development of many innovative learning 3-D animated materials for the students which can be easily downloaded from the web and creatively combined with Multimedia learning system. The study concluded that most learning material has been developed by graphic designers and content writers with the supervision of educators.

Meanwhile, in an experimental study, Ljubojevic, Vaskovic, Stankovic and Vaskovic (2014) investigated the efficiency of use of supplementary video content in multimedia teaching. The participants were students who attended the class for the first time and had a smaller level of fore-knowledge. The results showed that the most efficient method of use of supplementary video is integration with educational video content in the middle of a lecture. This position of video insertion provides the best results. The context of video content influences efficiency of learning also. Entertainment video was not as efficient as educational, but it can be used to engage and motivate students for learning. The study concluded that the use of supplementary video when integrated with educational video content in the middle of a lecture is the most efficient method and that students acquired a higher level of knowledge if the lecture was presented in segments separated with videos, regardless of the context of the video content.

However, Inoue-Smith (2016) examined PowerPoint's potential to enhance traditional pedagogical practices in higher education. In the study, 7 faculty

members at a four-year Long grant institution in western Pacific serving both undergraduate and graduate students. The data that was collected was through a non-participant observations and follow-up questions. The findings of this study suggest the ways of using PowerPoint to meet students' needs, as well as the professor's needs, by shifting from a passive, teacher-centered (thus lecture-style) classroom to an interactive, student-centered classroom. The study concluded that PowerPoint is good for visually enriching the content and illustrating complex concepts, but it is not good at providing large amounts of information. To avoid falling into the most common and serious traps associated with PowerPoint, professors should ask their colleagues to comment on their PowerPoint slides before using them in the classroom.

Additionally, Montrieus, Vanderlinde, Schellens and De Marez (2015) investigated teachers' and students' perceptions concerning the impact of using tablet devices for teaching and learning purposes based on an explorative focus group with 19 teachers and 39 students in a secondary school. The study found that there is impact on both teaching and learning practices and that the introduction of innovative technology seems to provoke conservative practices among teachers with an instrumental view as they adopt a stringent role and give traditional courses with a tablet device. The study confirms that perceptions on any educational innovation will influence its practical integration, and that teachers are key to the success of the implementation of technology in schools. The study concluded that mobile tablets should be introduced to secondary education because mobile tablets make learning more effective. The study focused on mobile technology which is a visual communication tool, the study also used both the teachers and students as participants for the experiment and the experiment was conducted amongst secondary school students.

Moreso, Chou, Chang and Lu (2015) investigated the effect of varied digital presentation tools which include Prezi (a web-based tool that allows users to create a presentation using a map layout) and PowerPoint on the learning performance of students of 78 fifth-grade students from a public elementary school in Taiwan. Findings of the study shows that Prezi was a more effective instructional medium compared with traditional instruction and that PowerPoint demonstrated instructional effectiveness on only the long-term learning retention of the students' compared with the traditional instruction which is the verbal communication. The study concluded that Prezi was a more effective instructional medium for knowledge acquisition compared with traditional

instruction. PowerPoint exhibited its instructional effectiveness on only the long-term learning retention of students.

Finally, Melor, Yunus, Salehi and John (2013) investigated the teachers' Perceptions on the use of visual aids which includes pictures, films, projectors etc as a motivational tool in enhancing students' interest in reading literary texts. The mixed method approach was the method used for the collection of data. 52 English teachers from seven national secondary schools in Kapit, Sarawak, Malaysia were selected. Five of the respondents were also randomly selected for the interview. Findings of the study shows that majority of the teachers have positive perceptions of the use of visual aids to teach the students because it enables them to engage their students closely with the literary texts despite of being able to facilitate students of different English proficiency level in reading the texts with interest. The study concluded that the implementation of visual aids in teaching literature is less time consuming. As a result, the teachers will have more ample time to create enjoyable classroom activities and conduct an effective teaching and learning process.

Theoretical framework

The study is anchored on Mayer's dual coding theory of multimedia learning. A cognitive theory of multimedia learning assumes that the human information processing system includes dual channels for visual or pictorial and auditory or verbal processing, each channel has limited capacity for processing, and active learning entails carrying out a coordinated set of cognitive processes during learning. Five steps in multimedia learning are selecting relevant words from the presented text or narration, selecting relevant images from the presented illustrations, organizing the selected words into a coherent verbal representation, organizing selected images into a coherent visual representation, and integrating the visual and verbal representations and prior knowledge (Reed, 2015).

The case for multimedia rests in the premise that learners can better understand an explanation when it is presented in words and pictures than when it is presented, in words alone. Multimedia messages can be described in terms of the delivery media (e.g., amplified speaker and computer screen), presentation mode (e.g., words and pictures), or sensory modalities (e.g., auditory and visual). The process of multimedia learning can be viewed as information acquisition (in which multimedia messages are information delivery vehicles) or as knowledge construction (in which multimedia messages are aids to sense making) (Mayer, 2002). This principle is applicable to this study as students' believe that learning

is dull without visual aids and that the retention is low when only conventional method is used to deliver lectures. This explains the relevance of Mayer's multimedia learning theory to this study.

Methodology

The researcher adopted survey research method for this study. Survey method was suitable for the study because it availed the researcher the opportunity to collect data from the undergraduates of the School of ICT, Federal University of Technology, Minna. The population of the study is 1,177 students of Information Communication Technology (ICT). The sampling technique was stratified random sampling using the Krejcie and Morgan table for determining appropriate sample size. According to the table, when a population is above 1100 and below or equal to 1200, the sample size of the population is 291. This consist of four (4) departments which include: Computer Science (102 respondents), Cyber Security Science (85) and Information and Media Technology (84) and Library and Information Technology 20 respectively. The research instrument used for the study was duly validated and administered to the sampled students. The response rate was 86%. Data of the study was analyzed using Statistical Package for Social Sciences version 24 (SPSS 24.0) and data was presented in tables and subjected to both descriptive and inferential analysis. As for the reliability test Cronbach Coefficient Alpha formula was used and the result was 0.80.

Data analysis

Table 1: Demographic Information of the Respondents

Gender	Frequency	Percentages (%)
Male	170	68
Female	80	32
Marital Status		
Single	239	96
Married	11	4
Level		
100	13	5
200	58	23
300	62	25
400	32	13
500	85	34
Total	250	100

Table 1 (above) indicated that 170(68%) of the respondents were males, while 239(96%) of them were single, whereas 85(34%) of the respondents were in 500 level. This shows that males, singles and final year students dominated the sampled students population in the Study.

Table 2: Improvement of learning with the use of PowerPoint

S/N	ITEMS	VSA 7	SA 6	A 5	N 4	D 3	SD 2	VSD 1	\bar{x}	SD
1.	Power Point presentations hold my attention.	59(24)	91(36)	73(29)	24(10)	2(8)	1(4)		5.71	0.98
2.	I prefer traditional lectures using a blackboard or whiteboard to PowerPoint presentations.	1(4)	6(2)	16(6)	27(11)	70(28)	89(36)	41(16)	2.64	1.22
3.	Power Point handouts help me to take better notes during classroom lectures.	54(22)	83(33)	74(30)	26(10)	8(3)	3(1)	2(8)	5.53	1.18
4.	Handouts printed from Power Point presentations help me to study for exams.	211(8)	50(20)	58(23)	20(8)	28(11)	43(17)	30(12)	4.07	1.92

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Table 2 (above) indicates that three (3) items had high mean scores above the 4.0 bench mark on a seven point Likert scale. They are item 1: Power Point presentations hold my attention. ($\bar{X}=5.71$, Std=0.98), Item 3: Power Point handouts help me to take better notes during classroom lectures. ($\bar{X}=5.53$, Std=1.18), and Item 4: Handouts printed from Power Point presentations help me to study for exams. ($\bar{X}=4.07$, Std=1.92).

Table 3: Visual aids embedded in the PowerPoint Slide sustaining students' interest in class

S/N	ITEMS	VSA 7	SA 6	A 5	N 4	D 3	SD 2	VSD 1	\bar{X}	SD
5.	The videos in the PowerPoint slides distract my attention during lectures	53(21)	89(36)	66(26)	30(12)	8(3)	3(1)	1(4)	5.55	1.17
6.	The animations in the PowerPoint slides distract my attention during lectures.	4(2)	6(2)	19(8)	23(9)	56(22)	93(37)	49(20)	2.62	1.37
7.	I lose attention in class when the PowerPoint slide is not graphical.	-	3(1)	26(10)	38(15)	60(24)	82(33)	41(16)	2.74	1.26
8.	I lose focus in class if the PowerPoint slides have an audio file.	22(9)	52(29)	76(30)	36(14)	28(11)	29(12)	7(3)	4.56	1.53
9.	I prefer bullet-point, text-only PowerPoint Presentations to presentations with audio, video, or graphics.	2(8)	18(7)	20(8)	29(12)	54(22)	72(29)	55(22)	2.80	1.53

Table 3 (above) indicates that two (2) items had high mean scores above the 4.0 bench mark on a seven point Likert scale. They are item 5: The videos in the PowerPoint slides distract my attention during lectures. ($\bar{X}=5.55$, Std=1.17) and Item 8: I lose focus in class if the PowerPoint slides have an audio file. ($\bar{X}=4.56$, Std=1.57).

Table 4: Reaction of students' during lectures with PowerPoint Presentation.

S/N	ITEMS	VSA	SA	A	N	D	SD	VSD	\bar{X}	SD
		7	6	5	4	3	2	1		
10.	Power Point presentations increase the likelihood of inappropriate classroom behaviour.	-	-	12(5)	26(10)	62(25)	94(38)	56(22)	2.38	1.09
11.	During lectures with PowerPoint, I am carried away with the aesthetics in the PowerPoint slide.	16(6)	23(9)	34(14)	36(14)	45(18)	64(26)	32(13)	3.44	1.78
12.	I don't listen to the lecturer during lectures with PowerPoint because of the slide.	29(12)	52(21)	63(25)	39(16)	19(8)	31(12)	17(7)	4.49	1.76
13.	Lecturers who use Power Point presentations are more organized during their presentations.	62(25)	80(32)	57(23)	19(8)	14(6)	11(4)	7(3)	5.38	1.52
14.	I am less motivated to attend class when PowerPoint presentations are used during lectures.	4(2)	15(6)	27(11)	25(10)	51(20)	68(27)	60(24)	2.81	1.50
15.	I am less likely to attend class when the lecturer posts Power Point handouts to the Web.	46(18)	67(27)	65(26)	22(9)	17(7)	23(9)	10(4)	4.98	1.69

Table 4 (above) indicates that three (3) items had high mean scores above the 4.0 benchmark on a seven point Likert scale. They are item 12: I don't listen to the lecturer during lectures with PowerPoint because of the slide ($\bar{X}=4.49$, Std=1.09), item 13: Lecturers who use Power Point presentations are more organized during their presentations. ($\bar{X}=5.38$, Std=1.52), item 15: I am less likely to attend class when the lecturer posts Power Point handouts to the Web. ($\bar{X}=4.98$, Std=1.69), while item 11: During lectures with PowerPoint, I am carried away with the aesthetics in the PowerPoint slide ($\bar{X}=3.44$, Std=1.78).

Table 5: How PowerPoint presentation has motivated and improved the learning of students

S/N	ITEMS	VSA 7	SA 6	A 5	N 4	D 3	SD 2	VSD 1	? 1	SD
16.	The graphical nature of PowerPoint slides motivates me to read.	52(21)	81(32)	81(32)	27(11)	9(4)	-	-	-	5.56 1.05
17.	Visual images presented in PowerPoint presentation lectures help me to recall content during exams.	56(22)	91(36)	65(26)	25(10)	8(3)	3(1)	2(8)	-	5.58 1.18
18.	PowerPoint presentations help to emphasize key points during lectures.	58(23)	86(34)	78(31)	21(8)	4(2)	3(1)	-	-	5.66 1.05
19.	The Length of my reading has reduced due to the concise nature of PowerPoint slide	14(6)	38(15)	46(18)	25(10)	47(19)	57(23)	23(9)	-	3.74 1.78
20.	I prefer PowerPoint slides because of its summarized nature.	58(23)	75(30)	63(25)	16(6)	12(5)	8(3)	17(8)	-	5.22 1.69

Table 5 (above) indicates that four (4) items had high mean scores above the 4.0 bench mark on a seven point Likert scale. They are Item 16: The graphical nature of PowerPoint slides motivates me to read ($\bar{X} = 5.56$, Std = 1.05), Item 17: Visual images presented in PowerPoint presentation lectures help me to recall content during exams ($\bar{X} = 5.38$, Std = 1.18), Item 18: PowerPoint presentations help to emphasize key points during lectures ($\bar{X} = 5.66$, Std = 1.05), and Item 20: I prefer PowerPoint slides because of its summarized nature ($\bar{X} = 5.22$, Std = 1.69).

Discussion of Findings

The authority of the Federal University of Technology, Minna has long ago made it compulsory for lecturers to use powerpoint slides in all their lectures. Therefore powerpoint slides are used extensively by lecturers to lecture students in all courses, because it was encouraged and implemented by majority of staff in the School of Information and Communication Technology. However, findings have shown that a well prepared PowerPoint holds the attention of the students and that it helps them to take better notes during lectures with PowerPoint. Students prefer PowerPoint presentation lectures to the traditional lectures using blackboard or whiteboard.

In corroborating this finding, Mohamad and Ahmad (2016, p. 2395) claimed that “the use of visual teaching aids by history teachers during teaching and learning in the classroom leads to positive impacts on students”. Contrarily, Savoy, Proctor and Salendy (2009) declared that, it is impossible for a single teaching tool to suit all

teaching content perfectly. For optimal teaching and learning to take place, a whiteboard is needed from time to time in order for lecturers to provide detailed explanation along with PowerPoint slides, such as in calculation-based courses. The main points presented in the slides will ensure that the lecture flows smoothly in tandem with visual illustrations captured on the slides. The issue of setting up devices and equipment as well as the compatibility of the PowerPoint applications can be easily solved by equipping classrooms with their own technological system.

Visual aids such as images, animations and so on embedded in PowerPoint slides have sustained ICT student's interest in class. This finding shows students lose attention during lectures when the PowerPoint slide is not graphical and they also lose focus in class if some visual aids such as video and audio are embedded in the PowerPoint slide from the analysis meanwhile some students prefer bullet-point, text-only PowerPoint slides but most of the students agree that PowerPoint slides with graphics and visual aids is better.

PowerPoint Presentation well prepared by the instructor can enrich the information presented in a lesson, and make the presentation more organized and flexible. Main points can be emphasized by using graphics, animation and sound. PowerPoint can be used for content review also, it can be highly effective and powerful tool not only to present the material but also to make the complex ideas in the material easy and simple to grasp. It can also help in attracting and sustaining the learners' attention in the class which is the main requirement for making learning successful.

The use of PowerPoint Presentations can offer opportunities for effectively incorporating colorful text, photographs, illustrations, drawings, tables, graphs, movies and transition from one to another through a slide show. All these benefits have many implications for the lecturers for making their classes dynamic, interactive, easy, motivating and enjoyable. Both lecturers and students can exploit this tool in number of ways for teaching and learning effectively and enjoyably. This is contrary to Muthukuar (2016, p.5) found that "the lecturers preferred black/white board teaching or power point based teaching based on their convenience and other features".

From the findings students disagreed with the statement that PowerPoint presentations increase the likelihood of inappropriate classroom behaviour and they also disagree with the statement that says that the aesthetics in PowerPoint carry away their attention from the lecturers. They believe that lecturers that uses PowerPoint for lectures are more organized during their presentation than the lecturers that uses the verbal lectures. Students are also less motivated and less likely

to attend classes when PowerPoint slides are posted online.

For centuries, a blackboard remained the mediator for displaying information in a persistent manner, and could give the audience a consistent view of far more information, which can be held in short-term memory. Anderson (2014) noted that blackboards encourage note-taking and student-teacher interaction. Seth, Upadhyaya, Ahmad and Moghe (2010) noted that by using blackboard, taking down the simply drawn diagrams is easy, the teacher makes natural pauses, and power breaks do not interfere with the lecture. Its limitation is that information-rich contents such as complex tables, graphs, and vivid images cannot be displayed and the organization of the presentation is poorer as compared with electronic slides (Naqvi, Mobasher, Muhammad & Naeem, 2013). He also noted that the majority of medical students preferred PowerPoint presentations, whereas dental students preferred blackboard. This study is in corroboration with Kithakarn (2015, p.54) who reported that "students have positive attitudes towards using computers as learning tool".

From the analysis as shown in Table 4.7 above, it was discovered that students of ICT agree that the graphical nature of PowerPoint motivates them to read, visual images in the PowerPoint slides helps them to recall content during exams, key points are emphasized during lectures with PowerPoint and that because of the summarized nature of PowerPoint it is preferable during reading. The study also show that students disagrees with the fact that the length of their reading have reduced due to PowerPoint slides.

Technology plays a big role in lectures; it can be used as a tool to facilitate teaching and learning. As one of the most important goals of using new ways of lecturing in schools is to promote students' motivation towards learning, we can see in this study that using PowerPoint presentations operates as a powerful tool in delivering lectures. This study supports the effect of superiority of technology-based lessons (PowerPoint) as compared to traditional lessons (Verbal communication). Instructors should consider their students' needs and interests, and the questionnaire results indicate that the majority of the students show their positive perceptions towards using PowerPoint during lectures.

This is in corroboration with Ljubojevic *et.al.* (2014, p.20) who studied using supplementary video in multimedia instruction as a teaching tool to increase efficiency of learning and quality of experience revealed that "students' motivation and efficiency of learning may be increased if supplementary videos are used".

Conclusion

The findings have shown that a well-prepared PowerPoint will increase learning in a positive way because with PowerPoint presentations, students are able to retain information and also be able to recall that information due to the visual aesthetics in the presentations. In addition, PowerPoint slides will hold the attention of the students and that it may help them to take better notes during lectures. Also, students have shown preference for powerpoint presentation lectures as compared to the traditional lectures using blackboard or whiteboard. PowerPoint will contribute positively to the way students read because of its summarized nature so students prefer to use the PowerPoint slides for reading as findings have revealed in the study. The use of PowerPoint presentation has no doubt contributed to the learning process in many universities. The study also revealed that students believe that lecturers who presents their lectures with PowerPoint are more organized than those who use verbal means to present their lectures.

Recommendations

Based on the findings of the study, the following recommendations are hereby made:

1. The study could be replicated to look for student's perception about PowerPoint as a learning tool in other institutions within the nation, Nigeria.
2. There is need to compare PowerPoint presentation with other Visual communication tools at different grade levels.
3. Attempts should be made at all the levels, students- teachers and administration- to create an ideal atmosphere by making the required skills and infrastructure available to exploit this tool for better and effective teaching.

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