

## Enhancement of Instructional Delivery of Business Education Courses in Nigerian Universities Through Effective Application of ICT Facilities

Eno E. Elogbo (PhD) & Mr. Jesam M. Ettah

Vocational Education Department,  
University of Calabar, Calabar.

### Abstract

*This study sought to determine the extent of application of ICT for enhancement of instructional delivery of business education courses by lecturers in Nigerian universities with focus on University of Calabar and University of Cross River State, Calabar, Cross River State, Nigeria. In order to carry out this study objectively, two specific objectives, two research questions and two null hypotheses were formulated to guide the study. A descriptive survey design was adopted for the study. The population of the study comprised 1448 Business Education students of University of Calabar and University of Cross River State. Simple random sampling technique was used in selecting a sample of 724 business education students. A questionnaire titled "Information and Communication Technology Application for Enhancement of Instructional Delivery of Business Education Questionnaire" (ICTAEIDBEQ) was used for data collection for this study. The questionnaire was validated by three experts in the Faculty of Vocational and Science Education, University of Calabar, Calabar, Nigeria. Cronbach's Alpha Technique was used in determining the reliability of the instrument and a correlation coefficient of 0.87 was obtained. Mean was used in answering the research questions. The t-test statistics was used in testing the null hypotheses at .05 level of significance. The findings of the study revealed that there is no significant difference between the mean ratings of University of Calabar and University of Cross River State students on the extent of application of Spreadsheet and PowerPoint for enhancement of instructional delivery of Business Education courses by lecturers. Based on the findings, it was recommended among others that lecturers should encourage the application of ICTs for enhancement of instructional delivery in business education.*

**Key Words:** Enhancement, Instruction, Delivery, Business Education, Courses

### Introduction

Business Education is that aspect of vocational education programme which ensures that students are equipped with marketable skills, knowledge and attitudes needed for initial employment and advancement in business and related occupations. It also enhances students work orientation and makes the transition from school to the world of work relatively easy. Njoku (2006) and Etonyeaku (2009) maintained that business education has a formidable force and it is an education aimed at the acquisition and equipping individuals with appropriate skills, knowledge, abilities, attitudes, values and competencies that will enable them to be self-employed and self-reliant (entrepreneurship) with emphasis on ICT skills.

Business Education as an aspect of Vocational and Technical Education is aimed at equipping the students to acquire skills that will make them employable. Courses offered in

this programme include financial accounting, management accounting, costing, taxation, auditing, office technology, marketing, administration office management, entrepreneurship education, word processing, spreadsheet data processing, management information system, business mathematics, etc. These courses prepare the recipients not just to work as employees but as employers of labour. These are also better taught with the application of information and communication technology (ICT) facilities.

Information and Communication Technology (ICT) is a global connection of many different types of computer networks linked together. Anderson and Glen (2003) referred to ICT as those technologies that are used to access, gather, manipulate and present or communicate information. They include hardware such as computers and other software applications and connectivity such as access to the internet, local networking infrastructures and video conferencing. ICT essentially entails collating, analyzing, processing, manipulating, storing, retrieving, transmitting and communicating of data in different forms which may include audiovisual, audio and visual formats.

ICT places different demands on education in general and business education in particular. If the educational system is to be relevant in solving the societal needs in the present information age, therefore, the concern on how business education curriculum is delivered in Nigerian tertiary institutions in contemporary times becomes very important. This can be done by effective application of ICT facilities in teaching and learning situation to improve and enhance business education students' learning, academic proficiency, effectiveness and efficiency in the modern day world of work. To achieve this, there is the need for business educators to be up-to-date in their knowledge and skills especially in ICT and as well as the application of these facilities in teaching and learning situations.

According to Elogbo and Akeke (2019), the integration of information and communication technology in teaching is a central matter in ensuring quality of business education courses. Since business education provides students with requisites skills which are needed to increase their productive power on any nation, the workforce is accordingly motivated to initiate independent productive ventures and carry out skilled works of divergent nature independently. The positive utilization of ICT therefore becomes important to business education students. Mooji and Smeet (2001) considered ICT as one part of educational technology that pays attention to the concepts, utilization and application in the educational process. Ngurukwem (2005) stated that there is a noticeable role of ICT in integrating and creating pool of educational media, sound, visual, textual and numeric data for effective teaching and learning of business education. These would be meaningful if they have pedagogical utility in a classroom setting to enhance curricula relevance and adoption.

It was also noted by Elogbo and Akeke (2019) that with ICT resources utilization, teaching and learning can be carried out with or without physical or face to face contact as is hitherto the case in the traditional approach. ICT has tremendously and positively affected developments in all facets of human endeavor. Particularly in contemporary times, ICT

resources utilization in teaching of business education programme in tertiary institutions will facilitate knowledge acquisition and dissemination by students within and between various disciplines. In this way, human input is reduced to the barest minimum, with better and more effective performance. Acquiring these skills will however enable them cope with and adapt to the challenges of the modern day educational system and world of work.

Information and Communication Technology has changed the methodology of teaching business subjects in schools. Teaching and learning has been changed from traditional chalkboard to electronic learning requiring ICT skills for teachers. Nyiahule (2006) observed that teachers now can talk less, do less active and achieve more. Nyiahule added that teaching and learning have shifted from teacher centered to material centered, where the teacher only guides students to application available materials to achieve learning objectives.

ICT application can be seen in this work as lecturers' use of word processing package, World Wide Web (www) tool of the Internet, electronic mail (e-mail), PowerPoint presentation and electronic spreadsheet packages, etc. in the effective teaching of business education courses in Nigerian universities. This work will focus as two ICT facilities namely, Spreadsheet and PowerPoint.

A spreadsheet comprises a matrix of cells that can contain either numerical or textual information. Data in the cells can either be entered directly by a user or can be calculated by the spreadsheet itself, with appropriate instructions from the user stored in the cell with a formula. The use of formulas allows some numerical values in a spreadsheet to depend on values elsewhere in the spreadsheet, effectively allowing a number of calculations throughout the spreadsheet to be completed simultaneously. Mayes and Shank (2010) maintained that although other spreadsheets exist, Microsoft's Excel is in such widespread use on personal computers that it is almost universally relevant

Using spread sheets as an instructional tool has been gaining popularity among instructors, primarily as these are believed to improve students modeling skills. Carol and Borthick (2007); Denis (2004) Ian, Erwin and Peter (2005); and Neil (2004) maintained that in recent times, educators have been using different application software to deliver, and teach subject materials; especially spread sheet software packages are being used to teach a diverse range of courses and to equip students with the skills and expertise to enter the workforce.

According to Ahmed (2008), the teacher perceived that the use of a spreadsheet package is a wonderful platform to deliver and disseminate complex knowledge for lifelong learning, whereas the students missed the apparent connections among the uses of spreadsheets, the problems learned and the generic skills to be retained for other subjects, and for their future employment. The author noted that the introduction of spread sheet software has revolutionised instruction in classroom teaching and learning from the inception of computers. A spreadsheet program like Excel has been used for decades as a pedagogical aid, as a skill building tool, as a platform to build teaching materials and to learn difficult problems which are otherwise impossible to learn in a chalk and talk environment. Its popularity has been increasing exponentially.

Spreadsheet is largely used as a pedagogical tool to deliver teaching materials and equip students with the much sought-after computer literacy skills. Accounting educators have used spreadsheet programs to develop students' computing skills and spread sheet skills. Dennis (2004) maintained that the spreadsheet is used to teach spreadsheet design skills, teach concepts of finance, teach general computer literacy and to teach skills to embed word and excel into problems solving, and interpretations. Accounting educators have integrated different course materials and spreadsheets, embedded spreadsheet tasks with course related problems so that the students learn spreadsheet applications to real life problem contexts. In such situations, the spreadsheet is seen as an instrument through which students could grasp the course materials and visualise the link between the applied aspects of problems and the underlying concepts of the course materials. Some educators even think that working on problems in spreadsheets is a good brainstorming exercise which promotes enjoyment and deep learning.

According to Udoh (2015), using spreadsheet for instructional delivery usually lead students to solve problems by trial and error under the attentive guidance of a teacher. This can lead the students to; become aware of activating a new modelling process for problem solution, understand what solving an equation means, even before being able to handle equations, reason about the domain and constraints of a problem in order to decrease the number of trials necessary to reach a solution, introduce generalization, abstraction and synthesis, which are fundamental cognitive abilities in mathematics and become aware of the nature of algebra by comparing, as a metacognitive activity, different problem solving methodologies, such as arithmetic, algebra and spreadsheet.

Neil (2004) argued that spreadsheets promote deep learning and algorithmic thinking in the students, and students enjoy working on spreadsheet models to learn course materials. Some academics even think that computer games and spreadsheet based games can foster students' learning of spread sheet skills and course materials. Andreas (2005) cited the use of Calvados game to teach opportunity costs, relevant costs and transfer pricing in a managerial accounting course. Michelle (2005) cited the use of Who Wants to Be (WWTB) to teach auditing course material. Both researchers reported positive learning experiences by the students when the games are used to teach subject materials. The use of the spreadsheet as a pedagogical tool goes far beyond an educator's involvement in guiding students' learning of detailed skills embedded through assigned course materials.

Numerous studies have reported that students learn an array of detailed spreadsheet skills through different courses. The skills are generic and can be applied to different problem contexts, and in different subjects, the educators teach these skills or the students spend time to learn these skills to use in jobs. For instance, Denis (2004); Ian, Erwin and Peter (2005); and Neil (2004) maintained that students can use spreadsheet programs to learn risk analysis skills, design and error detection skills, develop algorithmic thinking skills, memorisation and integrations skills and scenario analysis skills. In recent times, the spreadsheet is being used extensively to develop financial models that require integration of finance, cost accounting, financial accounting concepts and spreadsheet functions to build and design useful decision

models. This integration has enabled the educators to teach and expose students to advanced problem-solving skills where immediate feedback on attempted problems and error checking are possible.

According to Dania and Posey (2012), several business school educators have started using spreadsheets and other visual presentation media for instructional purposes. Many textbooks have also started including spreadsheet solutions as part of the instructor materials that accompany the textbook. The convenience of these materials may lead instructors into thinking that this tool is a viable way to present subject materials. The use of spreadsheet in applied business courses supports a shift from the traditional lecture approach to a more student-centred approach. Dania and Posey further noted that several applied business instructors are beginning to rely on the use of spreadsheets as an educational tool to facilitate conceptual understanding; especially in disciplines such as Finance and Accountancy. Evidence of which can be found in the several text books available in the areas of applied Finance and Accountancy areas with focus on the use of spreadsheets (example, “Financial Analysis with Microsoft Excel” by Mayes and Shank, 2011; “Managerial Decision Modeling with Spreadsheets” by Balakrishnan, Render and Stair 2002). Instructors realize the benefits and usually use a combination of electronic tools for instructional purposes. Spreadsheets have been recognized as powerful problem-solving tools in teaching applied concepts.

According to Lewis (2001), spreadsheet assignments promote avenues to explore abstract concepts which are mathematical in nature. Supporting this assertion, Evans (2000) argued that students who developed a high level of expertise in the use of spreadsheets prior to taking an applied course demonstrate a distinct advantage in understanding underlying course concepts. As a problem-solving tool, spreadsheets facilitate students’ visualization of mathematical concepts, permitting an intuitive approach for problem solving, and a situation using multiple representations for analysis.

According to Jones (2005), even though spreadsheet was not initially intended as an educational tool, it has grown in popularity among applied course instructors, such as mathematics or business. The use of spreadsheets can lead to understanding of applied abstract topics such as time value of money, balance sheets, algebra and calculus. There has been an emergence and expansion of the spreadsheet as a teaching tool. Spreadsheets have gradually increased in their importance as a tool for teaching. Baker and Sugden (2003) argued that despite the increasing popularity of spreadsheets, opportunities for improvement in its application still exist.

Marriott (2003) in a study on the use of computers in accounting education (business simulation) posited that there is sufficient evidence to suggest that accountancy students and practitioners fall in a “convergers” category. “Convergers” are defined as individuals who test the theory and practice and often combine conceptualization and experimentation. Individuals who prefer this style of learning have been found to be successful in their careers. Convergers also prefer to deal with things rather than people and respond best to situations where there is one correct answer. Marriott concluded that the use of the computer simulation and spread

sheet modeling is successful in providing concrete experience of accounting as used in real world context. It enables students to practice and learn accounting skills.

Lacher in Dania and Posey (2012) opined that the use of spreadsheets and what they are capable of continues to grow with innovation in software and application expertise of the users. This has greatly influenced the way accounting is taught at universities. Accounting is inherently an applied discipline, which requires intensive computation and cross referencing. Spread sheets aid in both computation as well as cross reference, while leaving the focus of the student on understanding of the concepts involved. Mayes and Shank (2010) posited that instructors and students have rapidly been adapting spread sheets for learning purposes even though it was not initially intended due to large built-in analytical capabilities and function list. For instance, with Microsoft Excel, using available functions, instructors can educate students to perform tasks such as maintenance of financial and accounting statements or use available statistical tests, to demonstrate Multiple regression analysis or use Monte Carlo simulations aid students visualize various hedging strategies Mayes and Shank concluded that possibilities of adapting spreadsheets in classroom setting are quite endless.

The use of PowerPoint has fostered qualitative changes in how teaching is approached, especially in terms of presenting contents audio-visually, where PowerPoint is the most often used tool. PowerPoint is a software program that has become a basic means of delivering presentations in both lecture halls and educational centres.

According to Savoy, Proctor and Salvendy (2009), the information and communication technologies (ICTs) have become rather deeply rooted in educational settings. Their use has fostered qualitative changes in how teaching is approached, especially in terms of presenting contents audio-visually, where PowerPoint is the most often used tool. PowerPoint is a software programme that has become a basic means of delivering presentations in both lecture halls and educational centres. Every day more than 30 million presentations are delivered using PowerPoint. More than 20 years have elapsed since PowerPoint first appeared, and since then its presence in classrooms has risen considerably.

According to Armitage (2014), use of relevant diagrams, images, animations and video clips has shown to help students with recall and retention as well as to solve problem more effectively. These not only break up the "all knowledge comprises a heading and three bullet points" temptation of PowerPoint, they also help those with strongly visual memories and the dyslexic. They are often intrinsically attractive and not self-explanatory so they intrigue those who read the PowerPoint before the lecture and so induce them to attend in order to find out more.

Babb and Ross (2009) argued that contrary to the expectations of most lecturers, attendance at lectures where the slides were made available prior to the lecture increased, rather than decreased. They propose that this may be due to students looking at the slides in advance and recognizing that they need to attend the lecture because they are alerted to content that is difficult or problematic. The researchers and other authors also note that where slides are made

available in advance or at the start of a lecture, better noting of critical points in the lecture was observed, students used the lecture slides post-lecture to review/consolidate their understanding and they used the slides to guide their note-taking. Babb and Ross found that for the course where the slides were made available after each lecture, students were less likely to use them for checking or revision.

Bartscha and Cobern (2003) posited that many lectures use written material presented on a chalkboard, whiteboard, or by transparencies on an overhead projector. In the last 10 years, another method of presenting visual information with lectures has gained prominence: projecting information directly from a computer onto a screen (e.g., PowerPoint presentations). In fact, many colleges and universities have rooms or mobile carts equipped with technology necessary for any instructor to display information in this manner.

Armitage (2014) pointed out that consistent finding across the research into students' attitudes and perceptions is that they feel lectures given using PowerPoint are better than those given using overhead projector – even though in many of these studies students' learning is unaffected. Lecturers using PowerPoint received higher ratings than those who did not and were perceived as better organised, giving better explanations, well-structured and greater emphasis on key points. Lecturers not using PowerPoint to support lectures were seen as 'old fashioned'.

The author maintained that students' perceptions of how much they are learning, how effective and confident they are as learners, and the clarity and comprehensiveness of their notes, were all seen by students as being greater when PowerPoint was used. Driesnack (2005) also argued that the use of PowerPoint inhibits presenter audience interaction, limits the number of details that can be presented and lowers the communicative quality of the presentations. PowerPoint improves learning, raises audience interest and helps in explanations of complex illustrations.

According to Mackiewicz, Mastarone and Lee-Kim (2006), even though there are few and far between, some empirical studies have been conducted which set out to determine the impact that PowerPoint has on the teaching/learning process, referring to teachers' and students' perceptions of the programme or the differing perspectives between experts and university students. A second focal point of interest has been the attempt to determine experimentally whether receiving classes taught by PowerPoint positively affects students' academic performance. Some of these latter studies are methodologically diverse (in the amount and kind of information contained on the slides, in the knowledge the students had on what they were being evaluated on, in the age of the subjects evaluated, etc.), so it is difficult to compare them, and furthermore, they reach contradictory conclusions. Mayer and Moreno (2003) and Blokzijl and Andeweg (2005) point to the effectiveness of PowerPoint in the recall of the material presented in classroom. Amare (2006) in his own study has shown how students achieve better results in a teacher-centred class without a PowerPoint presentation or simply no significant differences are observed between the two groups studied. Savoy et al. (2009) also focused on the effectiveness of the recall of material depending on the kind of information

presented (graphic or verbal), stressing that students recalled around (15%) less verbal information when it was presented with PowerPoint.

Savoy, Proctor and Salvendy (2009) noted that beyond shedding light on this controversy, to the extent possible, their study was aimed at determining whether using the PowerPoint methodology to present verbal contents in a teacher led class affects student learning. Unlike the studies performed up to date, in the researchers considered the PowerPoint methodology or resource not as an element to complement the educational discourse but as the main element in the presentation of the contents, while the educator's discourse is what serves as a complement.

According to Cladellas and Castello (2010), more and better learning is expected to take place in a context in which the teacher is the main emitting information source and interacts with the listeners, managing the communicative elements (language, gesture, para-verbal elements), the distribution of time and the stress or emphasis on the different points according to the indicators of students' comprehension, compared to the situation in which the teacher essentially spends his or her time reading the contents presented on PowerPoint slides. Driessnack (2005) stated that while in the former case the teacher directs the listeners' attention to the points he or she considers the most relevant, in the latter they have to divide their attention between the material being projected onscreen and the teachers' comments, although studies show that students normally focus on the literal copy of the text on the slides. On the other hand, the teacher's attention shifts from capturing indications of comprehension, and adjusting his or her speech accordingly, to focusing on the contents presented on the slides. According to Susskind (2005), despite this, as some studies suggest, the presence of PowerPoint in classrooms is a motivating factor for students, most likely because it helps them in their note-taking. Akdag and Tok (2004) maintained that instruction enriched through the use of the power point presentation has a determinant role on students' success.

### **Statement of the Problem**

It has been observed that ICT application in tertiary institutions falls below expectation. The non-availability of some ICT resources like computers, internet access, etc. in most tertiary institutions hampers educators' application of ICT resources in teaching.

Most business education graduates especially seem not to be able to manipulate basic ICT resources which are the fundamental tools of operations in their places of work. This may not be unconnected with the observation that ICT resources are not available and utilized in teaching business education courses in the most universities. Students and lecturers have also expressed their dissatisfaction the unavailability of ICT facilities in teaching and learning when work environment has gone automated. This dissatisfactory situation is one of the reasons for frequent strike actions by tertiary institutions' lecturers in Nigeria. Business educators in tertiary institutions will definitely continue to produce poor quality business education graduates from these institutions if nothing is done to change the situation. This may result in

difficulty in getting employment and inability to break-even as both public and self-employed graduates.

Many Business Education lecturers and students are also yet to fully utilize ICT for teaching and learning even in tertiary institutions where these facilities are provided. It is worrisome that the tertiary institutions where these facilities are provided have lecturers and students who have little or no knowledge on the application of these ICT facilities. It is against this background that the researchers decided to find out the extent of application of ICT for enhancement of instructional delivery of business education courses by lecturers in Nigerian universities with focus on University of Calabar and University of Cross River State, Calabar, Cross River State, Nigeria.

### **Purpose of the Study**

The main purpose of the study was to determine the extent of application of ICT for enhancement of instructional delivery of business education courses by lecturers in Nigerian universities with focus on University of Calabar and University of Cross River State, Calabar, Cross River State, Nigeria. The specific purposes of this study were to:

1. determine the extent of application of spreadsheet for enhancement of instructional delivery of Business Education courses by lecturers in University of Calabar and University of Cross River State, Calabar, Cross River State, Nigeria.
2. determine the extent of application of PowerPoint package for enhancement of instructional delivery of Business Education courses by lecturers in University of Calabar and University of Cross River State, Calabar, Cross River State, Nigeria.

### **Research Questions**

The following research questions were asked to guide the study.

1. What is the extent of application of spreadsheet for enhancement of instructional delivery of Business Education courses by lecturers in University of Calabar and University of Cross River State, Calabar, Cross River State, Nigeria?
2. What is the extent of application of power point package for enhancement of instructional delivery of Business Education courses by lecturers in University of Calabar and University of Cross River State, Calabar, Cross River State, Nigeria?

### **Null Hypotheses**

The following null hypotheses were formulated to guide the study.

- H<sub>01</sub> There is no significant difference between the mean ratings of University of Calabar and University of Cross River State students on the extent of application of spreadsheet for enhancement of instructional delivery of Business Education courses by lecturers.
- H<sub>02</sub> There is no significant difference between the mean ratings of University of Calabar and University of Cross River State students on the extent of application of PowerPoint package for enhancement of instructional delivery of Business Education courses by lecturers.

## Methodology

The descriptive survey design was used to carry out this study. Survey research design was considered most appropriate for this study because it enabled the researcher to collect data on the opinion of the respondents. The study Cross River State where the University of Calabar and University of Cross River State are located. The population of the study was 1448 Business Education students of University of Calabar, 486 and University of Cross River State (Business Education Unit; University of Calabar and Cross River University, 962 as per 2023/2024 academic session). The two universities were purposively sampled for the study. The researcher selected a sample size of 724 business education students, which is 50% of the population. A breakdown of this sample shows that 243 and 481 business education students were selected from University of Calabar and University of Cross River State respectively. Stratified random sampling technique was adopted for the study. Using this technique, the population was divided into two strata representing the two universities sampled for the study. From each stratum, proportionate sample was drawn. The instrument for data collection was a structured questionnaire titled "Information and Communication Technology Application for Enhancement of Instructional Delivery of Business Education Questionnaire" (ICTAEIDBEQ). The instrument was validated by three experts from Faculty of Vocational and Science Education, University of Calabar, Calabar, Nigeria. A reliability coefficient of 0.87 was obtained using Cronbach alpha. Mean was used to answer the research questions while the null hypotheses were tested using t-test. Statistical Package for Social Sciences (SPSS) was used to ensure accuracy of the analysis of the data collected for the study. Independent sample analysis was conducted on each item of the questionnaire using SPSS, to answer the research questions and to test the null hypotheses respectively.

## Presentation of Results and Discussion of Findings

The results will be presented based on the research questions and hypotheses.

**Research Question 1:** What is the extent of application of spreadsheet for enhancement of instructional delivery of Business Education courses by lecturers in University of Calabar and University of Cross River State, Calabar, Cross River State, Nigeria?

**Table 1: Mean responses of respondents on the extent of application of Spreadsheet for enhancement of instructional delivery of Business Education courses by lecturers in University of Calabar and University of Cross River State, Calabar, Cross River State, Nigeria**

|     |                                           | n= 724      |          |
|-----|-------------------------------------------|-------------|----------|
| S/N | Utilization of Spreadsheet Application    | $\bar{X}$   | Decision |
| 1   | Entering of transactions in the cash book | 2.82        | GE       |
| 2   | Balancing of the cash book                | 2.72        | GE       |
| 3   | Application of the double entry principle | 2.71        | GE       |
| 4   | Preparation of the trial balance          | 2.78        | GE       |
| 5   | Preparation of the balance sheet          | 2.79        | GE       |
| 6   | Inserting of data in to cells             | 2.92        | GE       |
| 7   | Deleting of data in columns               | 2.66        | GE       |
| 8   | Sorting of records in work sheet          | 2.63        | GE       |
| 9   | Formatting of excel data                  | 2.97        | GE       |
| 10  | Sending of data to computer memory        | 2.86        | GE       |
|     | <b>Cluster Mean</b>                       | <b>2.79</b> | GE       |

Table 1 shows that the mean score of students ranged between 2.63 to 2.97 with a cluster mean of 2.79. These results shows that there is a great extent of application of spreadsheet for enhancement of instructional delivery of Business Studies courses by lecturers in University of Calabar and University of Cross River State, Calabar, Cross River State, Nigeria.

**Research Question 2:** What is the extent of application of power point package for enhancement of instructional delivery of Business Education courses by lecturers in University of Calabar and University of Cross River State, Calabar, Cross River State, Nigeria?

**Table 2: Mean responses of respondents on the extent of application of Power Point for enhancement of instructional delivery of Business Education courses by lecturers in University of Calabar and University of Cross River State, Calabar, Cross River State, Nigeria**  
n= 724

| S/N | Utilization of PowerPoint                        | $\bar{X}$ | Decision |
|-----|--------------------------------------------------|-----------|----------|
| 1.  | Demonstrate the pronunciation of vowels          | 2.92      | GE       |
| 2.  | Demonstrate the writing of consonants            | 2.86      | GE       |
| 3.  | Demonstrate vocalization of outlines             | 3.09      | GE       |
| 4.  | Demonstrate the application of halving principle | 2.66      | GE.      |
| 5.  | Demonstrate the application of halving principle | 2.87      | GE       |
| 6.  | Demonstrate the insertion of text into slides    | 2.78      | GE       |

|                                          |             |           |
|------------------------------------------|-------------|-----------|
| 7. Demonstrate moving of graphics        | 2.86        | GE        |
| 8. Demonstrate changing of templates     | 2.72        | GE        |
| 9. Demonstrate deleting of slides        | 3.06        | GE        |
| 10. Demonstrate the setting of animation | 2.86        | GE        |
| <b>Cluster Mean</b>                      | <b>2.87</b> | <b>GE</b> |

Table 2 shows that the mean score of students ranged between 2.66 to 3.09 with a cluster mean of 2.87. These results show that there is a great extent of application of power point for enhancement of instructional delivery of Business Education courses by lecturers in University of Calabar and University of Cross River State, Calabar, Cross River State, Nigeria.

### Testing Null Hypotheses

**Null Hypothesis 1:** There is no significant difference between the mean ratings of University of Calabar and University of Cross River State students on the extent of application of spreadsheet for enhancement of instructional delivery of Business Education courses by lecturers.

**Table 3: t-test analysis of the difference in the mean ratings of University of Calabar and University of Cross River State students on the extent of application of spreadsheet for enhancement of instructional delivery of Business Education courses by lecturers**

| n= 724 |                              |          |     |           |      |      |        |          |
|--------|------------------------------|----------|-----|-----------|------|------|--------|----------|
| S/N    | Item                         | Gender   | N   | $\bar{X}$ | T    | S.D  | Sig. p | Decision |
| 1      | Entering of transaction      | Unical   | 243 | 2.84      | 0.07 | 1.00 | 0.95   | NS       |
|        |                              | Unicross | 481 | 2.86      |      | 1.03 |        |          |
| 2      | Balancing cash book          | Unical   | 243 | 2.67      | 0.20 | 1.00 | 0.86   | NS       |
|        |                              | Unicross | 481 | 2.7       |      | 0.98 |        |          |
| 3      | Application of double ent.   | Unical   | 243 | 2.77      | 0.24 | 0.94 | 0.82   | NS       |
|        |                              | Unicross | 481 | 2.79      |      | 0.94 |        |          |
| 4      | Prepare trial balance        | Unical   | 243 | 2.81      | 0.17 | 0.95 | 0.87   | NS       |
|        |                              | Unicross | 481 | 2.79      |      | 0.97 |        |          |
| 5      | Prepare balance sheet        | Unical   | 243 | 2.86      | 0.47 | 0.98 | 0.66   | NS       |
|        |                              | Unicross | 481 | 2.92      |      | 0.97 |        |          |
| 6      | Inserting of data into cells | Unical   | 243 | 2.68      | 0.5  | 0.94 | 0.63   | NS       |
|        |                              | Unicross | 481 | 2.63      |      | 0.89 |        |          |
| 7      | Deleting of data in col.     | Unical   | 243 | 2.68      | 0.33 | 1.01 | 0.76   | NS       |
|        |                              | Unicross | 481 | 2.65      |      | 1.00 |        |          |
| 8      | sorting of records in work   | Unical   | 243 | 3.03      | 0.46 | 0.9  | 0.64   | NS       |
|        |                              | Unicross | 481 | 3.07      |      | 0.9  |        |          |
| 9      | Formatting of excel data     | Unical   | 243 | 2.99      | 0.16 | 0.88 | 0.88   | NS       |
|        |                              | Unicross | 481 | 2.98      |      | 0.88 |        |          |
| 10     | Sending of data to comp.     | Unical   | 243 | 2.91      | 0.46 | 1.01 | 0.66   | NS       |
|        |                              | Unicross | 481 | 2.88      |      | 1.02 |        |          |

Not Significant at  $P > 0.5$ ,  $df$  722

Table 3 revealed summary of the difference in the mean ratings of University of Calabar and University of Cross River State students on the extent of application of spreadsheet for enhancement of instructional delivery of Business Education courses by lecturers. The result indicates that all the items were not significant at  $P > .05$  and  $df$  722. Since all the items have P-value higher than .05, the null hypothesis which stated that there is no significant difference in the mean ratings of University of Calabar and University of Cross River State students on the extent of application of spreadsheet for enhancement of instructional delivery of Business Education courses by lecturers is retained. This implies that University of Calabar and University of Cross River State students did not differ significantly on their ratings on the extent of application of spreadsheet for enhancement of instructional delivery of Business Education courses by lecturers.

**Null Hypothesis 2:** There is no significant difference between the mean ratings of University of Calabar and University of Cross River State students on the extent of application of PowerPoint package for enhancement of instructional delivery of Business Education courses by lecturers.

**Table 4: t-test analysis of the difference in the mean ratings of University of Calabar and University of Cross River State students on the extent of application of PowerPoint package for enhancement of instructional delivery of Business Education courses by lecturers**

**n= 724**

| S/N | Item                         | Gende<br>r | n   | $\bar{X}$ | T        | S.D  | Sig. p | Decision |
|-----|------------------------------|------------|-----|-----------|----------|------|--------|----------|
| 1   | Pronunciation of vowels      | Unical     | 243 | 2.90      | 0.3<br>7 | 0.86 | 0.72   | NS       |
|     |                              | Unicros    | 481 | 2.96      |          | 0.85 |        |          |
| 2   | Writing of consonants        | Unical     | 243 | 2.83      | 0.0<br>5 | 1.05 | 0.96   | NS       |
|     |                              | Unicros    | 481 | 2.83      |          | 1.05 |        |          |
| 3   | Vocalization of outlines     | Unical     | 243 | 3.03      | 0.0<br>6 | 1.30 | 0.95   | NS       |
|     |                              | Unicros    | 481 | 3.03      |          | 1.24 |        |          |
| 4   | application of halving prin  | Unical     | 243 | 2.70      | 0.4<br>3 | 0.94 | 0.67   | NS       |
|     |                              | Unicros    | 481 | 2.65      |          | 0.95 |        |          |
| 5   | application of doubling      | Unical     | 243 | 2.92      | 1        | 0.90 | 0.33   | NS       |
|     |                              | Unicros    | 481 | 2.82      |          | 0.90 |        |          |
| 6   | insertion of text into slide | Unical     | 243 | 2.73      | 0.1<br>5 | 0.96 | 0.86   | NS       |
|     |                              | Unicros    | 481 | 2.75      |          | 0.97 |        |          |
| 7   | moving graphics              | Unical     | 243 | 2.87      | 0.4<br>2 | 0.82 | 0.67   | NS       |
|     |                              | Unicros    | 481 | 2.84      |          | 0.82 |        |          |

|    |                      |         |     |      |      |      |      |    |
|----|----------------------|---------|-----|------|------|------|------|----|
| 8  | changing templates   | Unical  | 243 | 2.68 | 0.16 | 0.86 | 0.88 | NS |
|    |                      | Unicros | 481 | 2.69 |      | 0.84 |      |    |
| 9  | deleting of slides   | Unical  | 243 | 2.97 | 0.74 | 0.96 | 0.44 | NS |
|    |                      | Unicros | 481 | 3.05 |      | 0.96 |      |    |
| 10 | setting of animation | Unical  | 243 | 2.76 | 0.80 | 1.03 | 0.42 | NS |
|    |                      | Unicros | 481 | 2.85 |      | 1.03 |      |    |

*Not Significant at  $P > .05$ ,  $df$  722*

Table 4 presents summary of the difference in the mean ratings of University of Calabar and University of Cross River State students on the extent of application of PowerPoint package for enhancement of instructional delivery of Business Education courses by lecturers. The result indicates that all the items were not significant at  $P > .05$  and  $df$  722. Since all the items have P-value higher than .05, the null hypothesis which stated that there is no significant difference in the mean ratings of University of Calabar and University of Cross River State students on the extent of application of PowerPoint package for enhancement of instructional delivery of Business Education courses by lecturers is retained. This implies that University of Calabar and University of Cross River State did not differ significantly on their ratings on the extent of utilization of PowerPoint in teaching Business Education courses by lecturers.

## Discussion of the Findings

### Application of Spreadsheet and Enhancement of Instructional Delivery of Business Education Courses

The finding of hypothesis one indicates that there is no significant difference in the mean ratings of University of Calabar and University of Cross River State students on the extent of application of spreadsheet for enhancement of instructional delivery of Business Education courses by lecturers. The agreement on the extent to which Spread Sheet is applied for enhancement of instructional delivery of Business Education courses by lecturers is shown in the similarity in the scores for the former and later group as shown in Table 1. The results showed great extent of application of spreadsheet for enhancement of instructional delivery of Business Education courses by lecturers in Nigerian universities. This finding is consistent with the opinion of Udoh (2015) that using spreadsheet for instructional delivery usually lead students to solve problems by trial and error under the attentive guidance of a teacher. The author noted that this can lead the students to; become aware of activating a new modelling process for problem solution, understand what solving an equation means, even before being able to handle equations, reason about the domain and constraints of a problem in order to decrease the number of trials necessary to reach a solution, introduce generalization, abstraction and synthesis, which are fundamental cognitive abilities in mathematics and

become aware of the nature of algebra by comparing, as a meta-cognitive activity, different problem solving methodologies, such as arithmetic, algebra and spreadsheet.

### **Application of Power Point and Enhancement of Instructional Delivery of Business Education Courses**

The finding of hypothesis four shows that there is no significant difference between the mean ratings of University of Calabar and University of Cross River State students on the extent of application of PowerPoint package for enhancement of instructional delivery of Business Education courses by lecturers. The agreement on the extent to which Power Point is applied for enhancement of instructional delivery of Business Education courses is shown in the similarity in the scores for the former and later group as shown in Table 2. The results showed great extent of application of PowerPoint for enhancement of instructional delivery of Business Education courses by lecturers in Nigerian universities. This finding is in line with the finding of Savoy, Proctor and Salvendy (2009) that information and communication technologies (ICTs) have become rather deeply rooted in educational settings. Their use has fostered qualitative changes in how teaching is approached, especially in terms of presenting contents audio-visually, where PowerPoint is the most often used tool. According to Savoy, PowerPoint has become a basic means of delivering presentations in both lecture halls and educational centres. The authors further noted that, everyday more than 30 million presentations are delivered with PowerPoint More than 20 years have elapsed since PowerPoint first appeared, and since then its presence in classrooms has risen considerably. This finding also agrees with Akdag and Tok (2004) assertion that instruction enriched through the use of the power point presentation has a determinant role on students' success.

### **Conclusion**

As revealed from the findings of this study, application of ICT facilities in teaching have positively enhanced instructional delivery of business education courses in the Nigerian universities. Effective application of these facilities have facilitated knowledge acquisition and dissemination of information by students and teachers within and between various disciplines. Factors such as availability, adequacy, functionality, accessibility of ICTs and the high degree of ICT compliance among lecturers may have been responsible for this great extent of utilization of ICTs. The implication however is that teachers in Nigeria will be able to move at the same pace with their counterparts in other part of the world in the march towards the promoting innovations, diversification of content in educational materials and adoption of technology-based instructional strategies in a society where office operations have been automated.

### **Recommendations**

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

1. The university management should make it a policy for lecturers to use spreadsheet in teaching courses involving tabulation and mathematical computations.
2. The Ministry of Education, Nigerian University Commission (NUC), Tertiary Education Trust Fund (TETFund) etc. should partner with lecturers in tertiary institutions in organizing seminar and workshops in the use of PowerPoint for the teaching of Business Education.

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