



TEACHERS' UTILIZATION OF INSTRUCTIONAL TECHNOLOGY FOR QUALITY TEACHING OF BUSINESS STUDIES IN SECONDARY SCHOOLS IN ENUGU STATE, NIGERIA

Nnaji for, F. N.¹,

Ejikeme, Chiamaka Ebelechukwu²ⁱ

¹PhD, Department of Technology and Vocational Education,
Nnamdi Azikiwe University, Awka,
Anambra State, Nigeria

²Department of Technology and Vocational Education,
Nnamdi Azikiwe University, Awka,
Anambra State, Nigeria

Abstract:

This study determined teachers' utilization of instructional technology for quality teaching of business studies in secondary schools in Enugu State. Two research questions guided the study and four null hypotheses were tested at 0.05 level of significance. Related literature pertinent to the study were reviewed which exposed the need for the study. Descriptive survey research design was adopted using a population of 388 business studies teachers in public secondary schools in the six Education Zones in Enugu State. A sample of 149 business studies teachers was drawn using the simple random sampling technique. A structured questionnaire developed by the researcher was used for data collection and was validated by three experts. Cronbach Alpha method was used to establish the reliability of the instrument. The reliability index obtained was $r = 0.83$. Data were analyzed using mean, standard deviation and t-test. Mean was used to answer the research questions and standard deviation was used to explain how the responses of the respondents varied. t-test was used to test the hypotheses at 0.05 level of significance using Statistical Package for Social Sciences (SPSS). The results showed that business studies teachers moderately utilized multimedia projectors and lowly utilized interactive whiteboard for quality teaching of business studies. The results also showed that there was no significant difference in the mean responses of business studies teachers on the extent of utilization of multimedia projectors and interactive whiteboard on the basis of gender and age. Based on the findings, the researcher recommended, among others, that the Ministry of Education should frequently organize seminars, workshops and any other in-service courses; to familiarize and sensitize business studies teachers with a wide range of instructional technology tools.

ⁱ Correspondence: email fn.nnaji for@unizik.edu.ng, maryamy212@yahoo.com

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1. Introduction

Globally, education is considered very important for personal and societal development. Nigeria regards education as an instrument for the promotion of national development as well as affecting desirable social change (Federal Republic of Nigeria (FRN, 2014). According to Bosah, Ejesi and Aleke (2014), education is the formation of character, the development of intellectual capabilities of an individual, the improvement and transmission of cultural heritage and equipment of an individual with knowledge, skills, values and attitudes that will enable them to earn a living. Thus, the education system in Nigeria has been delineated into different levels; mainly pre-secondary, secondary and tertiary levels.

Secondary school education is the form of education students receive after primary school and before the tertiary stage. Udalla (2012) noted that the importance of secondary education lies in its position both as the bridge between secondary and tertiary education and the agent for preparing individuals for useful living in the society. As indicated by the Federal Republic Nigeria (2014) in the National Policy on Education, the broad goals of secondary education are preparing people for useful living in the society and for higher education. This has made it imperative that it should, among others, supply trained manpower in the applied science, technology and commerce at sub-professional levels; inspire its students with the desire for self-improvement and achievement of excellence; raise a generation of people who can think for themselves, respect the views and feelings of others; and respect the dignity of labour (FRN, 2014).

Following the objectives of secondary schools, business studies students are not exempted from these objectives as it also prepares them to become individuals who are socially stable, morally dependent, mentally and physically alert, intellectually equipped, nationally and internationally oriented and culturally adjusted. Business studies is a subject designed to enable students acquire practical and vocational skills, attitudes, knowledge and competencies necessary for self-employment or function effectively in the society (Ogwunite & Okolocha, 2016). Business Studies remains a relevant subject in secondary schools that develops in the learner, competencies that are needed for survival in the business world (Wokocha, Babalola & Brown, 2017). It is a subject taught at the basic education level of secondary education that is geared towards imparting the necessary business skills required to succeed in the world of business. Thus, it is necessary that the teaching and learning process in business studies is made practical and attractive to capture the learners' attention.

Teaching in any education system depends largely on the quality and competence of the teachers. This is because the teachers are expected to perform the important function of guiding, directing, evaluating, imparting, asking and answering questions, among others; for maximum benefits of the learners. Teaching embraces all human

interactive skills employed by the teacher to promote/facilitate learning in the classroom situation; thereby, leading to improved performance on the part of the learner. It is a process in which teachers apply a repertoire of instructional technology to communicate and interact with the learners around academic content, and to support students' engagement for better learning outcome (Onwuagboke, Singh & Fook, 2015). Quality teaching in the education system is a global concern in virtually all societies. To achieve it, efficient and quality teaching needs to be employed. However, this may not occur without the use of instructional technology.

Due to rapid technological changes, instructional technology has become part and parcel of the teaching and learning process. Instructional technology is one of the many tools that can enhance the presentation of the content and convey information to students. According to Venkataiah in Qaiser (2011), instructional technology is defined as a means to make use of different techniques and procedures to design a learning experience systematically. Instructional technology includes practical techniques of teaching that systematically aim at effective learning, whether or not they involve the use of media (Gagne, 2013). Examples of instructional technology devices include interactive white board, digital calculator, electronic instructional materials such as radio, tape recorder, television, computer (desktop and laptop size), multi-media projectors, teleconferencing devices, all which contribute much in making learning more interesting (Atkinson, 2010).

It is becoming increasingly clear that it is not sufficient only to introduce technology to the educational process because technology alone has no effect and does not lead to change. It is the way teachers utilize technology that has the potential to bring changes in education. Utilization is a noun form of the adverb 'utility' which means the act or process of using a particular thing, idea or method for the actualization of a purpose. Utilization of resources refers to and connotes the equitable use of resources accruable to an enterprise especially in the education industry for effective implementation of school curriculum (Fan in Xia, 2014). Utilization of instructional technology at the secondary school level requires teachers' knowledge in the subject area, as well as an understanding of how students learn using varied instructional resources, and a good level of technical expertise among the teachers. At present, the use of instructional technology may be of great help to teachers in delivering up-to-date and complete information in teaching a subject (Omariba, Gitau & Ayot, 2016).

The use of instructional technology in the teaching of business studies can help reduce the length of time required for instruction leaving more time for practice of skills. Most instructional technology devices are effective in the teaching of content and also help sustain learners' interest. The use of multimedia projectors in education has proven its importance due to its positive impact on the teaching and learning process. Multimedia can be used for effective teaching and learning of business studies to facilitate learning activities by making them less cumbersome and easy to understand. By using multimedia projector in the class, teachers can deliver a topic not only verbally but also visually. This is much supportive for the students to give more concentration in the class.

Multimedia projectors bring difference in the classroom teaching which are useful to draw the concentration of the learners to the lessons (Amin, Azim & Kalam, 2018).

Interactive whiteboard is a technology that transmits computer screen to the whiteboard by means of a projector and that enables controlling the computer by only touching the whiteboard with a special pen (Gambari, Balogun & Alfa, 2014). By using this tool, teachers can display visual images on white boards which improve the learning process. Students can also use a white board to draw, write or manipulate images. The use of these instructional technology devices in teaching and learning will attract the students' attention and they will learn easily. The introduction of the interactive whiteboard might be seen as a means of allowing teachers to resolve some of the problems with technology integration and support interactive teaching methods in whole class situations.

Despite the use of instructional technology at all levels of education, students still find it difficult to cope with the study of business studies in schools. One of the reasons why students in secondary schools sometime find it difficult to comprehend immediately what is being taught by the teacher is non-utilization of instructional technology, which has made teachers handle subjects in abstract manner, portraying it as dry and non-exciting (Eshiwani in Tety, 2016). Orji in Effiong and Igiri (2015) stated that instructional aid is the guidance of learning activities that a teacher uses to motivate and arouse students to learn.

The influencing factors on the utilization of instructional technologies by business studies teachers in secondary schools could be age and gender. Academic literatures suggest that age is a factor that might moderate teachers' use of technology. Hamari and Nousaien (2015) found that older teachers perceive new technologies as a threat and cause of anxiety than younger teachers. Young teachers are more enthusiastic and more energetic than older ones. Similarly, Sanchez-Mena, Marti-Parreno and Aldas-Manzano (2017) observed that age affected teachers' perceived value on the use of educational video games in teaching. The effect of perceived ease of use on perceived usefulness in younger teachers might rely on their familiarity with video games compared to older teachers.

Another factor that comes into play is the gender of business studies teachers regarding their utilization of instructional technologies for quality instructional delivery. Gender in this study means the physical attributes of a person as a male and female. It is possible that male and female business studies teachers may differ in their utilization of instructional technologies in secondary schools in the area of the study. For instance, Daramola (2013) stated that male teachers visit the virtual library more frequently than female teachers. Daramola also noted that low intensity of virtual library visits among females might be as a result of their perception of the virtual library and the difficulty in combining academic work with home chores. Furthermore, Mahdi and Al-Dera (2013) submitted that male teachers had access to the internet in their offices more than female teachers. The gender factor might be an essential factor that affects the use of instructional technology in teaching.

Instructional technology devices are of no value to business studies students if they are not adequately utilized by their teachers. Researchers in education (Brown, Lewis & Harclerod, in Omariba, Gitau & Ayot, 2016) have shown that with present inadequate infrastructure, large class sizes, obsolete equipment, shortage of personnel, lack of technologically skilled teachers, gross underfunding and general neglect in public secondary schools in Nigeria, it is difficult to intensively achieve the goals and objectives of quality education and training. This could also account for why there are high rate of failures in both internal and external examinations in public secondary schools. It is upon this background that this study sought to ascertain the teachers' utilization of instructional technology for quality instructional delivery of business studies in secondary schools in Enugu State.

2. Statement of the Problem

With advancement in technology in the 21st century, instructional technology has become an invaluable technology for teaching, learning and research in education. Instructional technology has so many advantages on teaching and learning. However, despite these numerous advantages, some teachers still find it challenging in transiting from the analogue to the digital in teaching and learning of business studies and it has been seriously affecting the students' academic performance as regards to the acquisition of appropriate skills. This is because teachers adopt theoretical methods as a way of teaching and learning the subject, mainly due to underutilization of instructional technology in schools. As a result, the morale and interest of students in business studies is low.

Sequel to this, the poor performance of students could have been due to the non-utilization of instructional technologies in the classroom which could be hinged on teachers' experiences and knowledge about instructional technology. For instance, the Basic Education Certificate Examination reports of junior secondary schools in Enugu State showed that the percentage of students that failed business studies increased progressively. The report revealed that the period 2015 - 2017 had increasing failure rates of 20.88%, 34.87% and 37% respectively (Examination Development Center Enugu, 2017). These results are a cause for concern to many academics. The poor performance of students in business studies seems a concern to the stakeholders. Thus, this study is imperative as it will x-ray the actual situation on the utilization of instructional technology for quality instructional delivery of business studies in secondary schools in Enugu State.

2.1 Purpose of the Study

The main purpose of this study was to examine teachers' utilization of instructional technology for quality teaching of business studies in secondary schools in Enugu State. In specific terms, the study examined teachers' utilization of:

- 1) multimedia projectors for quality teaching of business studies in secondary schools in Enugu State.
- 2) interactive whiteboard for quality teaching of business studies in secondary schools in Enugu State.

2.2 Research Questions

The following research questions guided the study:

- 1) To what extent do business studies teachers utilize multimedia projectors for quality teaching of business studies in secondary schools in Enugu State?
- 2) To what extent do business studies teachers utilize interactive whiteboard for quality teaching of business studies in secondary schools in Enugu State?

2.3 Hypotheses

The following null hypotheses were tested at 0.05 level of significance:

- 1) Male and female business studies teachers do not differ significantly in their mean responses on the extent of utilization of multimedia projectors for quality teaching of business studies in secondary schools in Enugu State.
- 2) There is no significant difference in the mean ratings of business studies teachers on the extent of utilization of multimedia projectors for quality teaching of business studies in secondary schools in Enugu State on the basis of age (22-40 years and 41-60 years).
- 3) Male and female business studies teachers do not differ significantly in their mean responses on the extent of utilization of interactive whiteboard for quality teaching of business studies in secondary schools in Enugu State.
- 4) There is no significant difference in the mean ratings of business studies teachers on the extent of utilization of interactive whiteboard for quality teaching of business studies in secondary schools in Enugu State on the basis of age (22-40 years and 41-60 years).

3. Literature Review

3.1 Utilization

Utilization is the ability to employ appropriate resources or tools expertly and at the right time in order to attain goal or an objective. The term utilization refers to the degree of usage of a given material in the execution of a given task (Uzuegbu, Mbadiwe & Anulobi, 2013). It involves the creation of value in things. Utilization to a large extent judges the value of instructional materials by the degree in which it singly or collectively satisfies the derived instructional needs. Instructional materials are not ends in themselves but means of attaining specific instructional functions. The ability of the teacher to effectively utilize instructional technologies optimizes the attainment of instructional situation (Okwelle & Allagoa, 2014). Utilization of instructional technology at the secondary school level requires teachers' knowledge of the subject area, as well as an understanding of how

students learn using varied instructional resources, and a good level of technical expertise among the teachers (Xia, 2014). They are technologies which the teacher uses in supplementing teaching. Teachers are considered as the major implementing factors of effective technology utilization in any teaching and learning process. In the context of this study, utilization refers to the extent to which an instructional technology in business studies instruction is put into use by business studies teachers in secondary schools.

3.2 Instructional Technology

Instructional technology is one of many tools that can enhance the presentation of content and convey information to students. It is, however, merely a tool, which teachers use only in conjunction with effective instruction. Sharma and Sharma in Qaiser (2011) defined instructional technology as the system and network devices, instruments, methods and techniques used to achieve certain defined set of learning objectives. Hooper and Reinartz in Omariba (2012) held that these days, instructional technology refers to the contemporary computer software that contains combinations of texts, graphics, animation, audio and video. They further acknowledged that instructional technology refers to several different classes of software that are used to achieve clearly defined educational goals. Instructional technology devices enhance the presentation of content and convey information to students. They are tools which teachers should use only in conjunction with effective instruction. According to Isman (2012) instructional technology is the unification of academic systems which is designed to enhance the effective design of teaching-learning process, to solve the problems which are faced during teaching and learning process and to improve the quality and retention of information presented. In the context of this study, instructional technology is a device used in designing, carrying out and enhancing the process of learning in terms of specific objectives to bring out more effective instruction.

3.3 Quality Teaching

Teaching is seen as the work of a teacher; the ideas of a particular person or group, especially about politics, religion or society, that are taught to other people. Teaching brings about understanding; it involves a teacher, a learner, subject matter and teaching materials. Therefore, to bring about learning, the teacher engages in certain activities such as talking, demonstration, and gives instruction, all these are the various strategies to bring about learning (Adediran, 2014). It is the process of stimulating, guiding, helping, directing and encouraging the learner to learn as well as the function or action of the teacher aimed at producing result, outcome, or behavior change on the learner (Ogbu, 2010). Quality teaching is the delivery of an instruction in a way that evokes students' interest, critical thinking, and learning in a meaningful way (Olusegun, 2017). It makes students become curious and excited about what they are doing and consequently enabling them to discover learning and take ownership of their own education.

Quality teaching in the classroom in any education system depends largely on the quality and competence of the teachers. This is because the teachers are expected to

perform the important function of guiding, directing, evaluating, imparting, asking and answering questions among others for maximum benefits of the learners (Okwelle & Allagoa, 2014). The implication is that the teacher is the stronghold on which the business of educators rests upon the world over. The competent business studies teacher who is curious of quality teaching sees instructional materials not as gadgets like textbooks, chalks, chalkboard but as every necessary resources and objects which the teacher develops and improvises for use in the process of teaching to concretize lessons for effective and more reliable understanding by the learner about skills and knowledge of electronics lesson. In the context of this study, quality teaching is an instruction delivered by business studies teachers rooted in content, facilitating the discovery and depth of new knowledge in a constructivist manner.

3.4 Business Studies

Business studies is a practical-based subject that is usually taught at the junior secondary level of education in Nigeria. Ohiwerei (2015) remarked that business studies is designed to equip students with the practical skills that would enable them to participate meaningfully in business activities in future. The Federal Republic of Nigeria (FRN) (2014) in her education policy document classified business studies as a 'pre-vocational subject', which aims at equipping recipients with the practical skills for useful living within the society and lifelong education. Business studies is a subject designed to enable students acquire practical and vocational skills, attitudes, knowledge and competencies necessary for self-employment or function effectively in the society (Ogwunite & Okolocha, 2016). It is a subject taught at the basic education level of secondary education that is geared towards impacting the necessary business skill required to succeed in the world of business. Thus, it is necessary that the teaching process in business studies is made practical and attractive to capture the learner's attention. In the context of this study, business studies is a subject acquired at the junior secondary schools that helps to inculcate in the students soft skills, problem solving, critical thinking skills among others in order to become useful in the society.

4. Theoretical Framework

4.1 Socio-cultural Theory of Teaching, Learning, and Development

This study was anchored on Socio-cultural Theory of Teaching, Learning and Development. Socio-cultural theory of teaching, learning and development is a theory propounded by Lev Vygotsky in 1978. This theory states that human minds do not develop by virtue of some predetermined cognitive structures that unfold as one matures. Rather, this theory posits that human minds develop as a result of constant interactions with the social material world. According to Vygotsky, human mind develops through interaction with materials in the learning process where people learn from each other and use their experiences to successfully make sense of the materials they interact with. These experiences are crystallized in 'cultural tools', and the learners have

to master such tools in order to develop specific knowledge and skills in solving specific problems and, in the process, become competent in specific profession. In the classroom, these tools can be pictures, models, or patterns of solving a problem. Most often however, such tools are combinations of elements of different orders, and human language is the multi-level tool par excellence, combining culturally evolved arrangements of meanings, sounds, melody, rules of communication, and so forth. Learning by using such tools is not something that simply helps the mind to develop. Moreover, greater emphasis is placed on creating classroom environment that encourages student interaction with educational tools. This shows that as students interact or learn with instructional technology, they tend to develop their knowledge and skills in specific areas.

4.2 Multi-media Projectors

Classrooms have changed dramatically over the last decade with the advent of new technologies and equipment developed to make teaching and learning more diversified and interactive. Today, more teachers than ever are using multimedia projectors in the classroom. Students no longer have to crowd around a computer monitor to view presentations, Web sites or training programs (Al-Mamum, 2014). Multimedia projectors are becoming the centerpiece of classroom technology hubs that directly engage students and add impact to each lesson. Çakir in Amin, Azim and Kalam (2018) found that use of video by the multimedia projector in teaching make sure genuine effort to the learners. In addition, using content related videos helps the students to comprehend the thoughts and get in the actual concept on that subject matter. Moreover, students can give attention to the use of contextual language in the videos along with non-verbal characteristics of language that assists them to have better understanding of the subject and makes lesson pleasant and enjoyable. Multimedia activities encourage students to work in groups, express their knowledge in multiple ways, solve problems, revise their own work and construct knowledge. Shah and Khan (2015) stated that the advantages of utilizing multimedia in the classroom are many. Through participation in multimedia activities, students can learn: real world skills related to technology; the value of teamwork; effective collaboration techniques; how to present information in compelling ways; techniques for synthesizing and analyzing complex content; the importance of research, planning and organization skills; the significance of presentation and speaking skills; how to accept and provide constructive feedback; and how to express their ideas creatively.

4.3 Interactive Whiteboard

An interactive whiteboard is a large interactive display that connects to a computer and projector. This is highly suitable for students' project, presentations and seminars (Ojeaga & Igbinedion, 2012). The use of interactive whiteboard (IWB) as an instructional tool has a beneficial effect on students engagement in classroom lessons and lead to improved student behaviour. Teachers and students believe that interactive whiteboard has a high impact on revitalizing the classroom (Yanez and Coyle, 2011; Xu and Moloney, 2011).

New technologies in teaching have never been greater and with the recent addition of IWBs, teachers are able to integrate this tool into their lessons. According to Gambari, Balogun and Alfa (2014), interactive whiteboard increases teaching time by allowing teachers to present web-based and other resources more efficiently. It reduces the need for note-taking through the capacity to save and print what appears on the board enables teachers to save and print what is on the board, including any notes made during the lesson, reducing duplication of effort and facilitating revision. Interactive whiteboard enables students to be more creative in presentations to their classmates and increasing self-confidence. IWB allows teachers to share and re-use materials, reducing workloads. Utilizing this technology can be great for any school or learning institution because it streamline areas that were a challenge before. These whiteboards will not only stimulate learning but will also save on learning materials and inspire performance (Hutt, 2017).

5. Method

The descriptive survey research design was adopted for the study. According to Nworgu (2015), a survey design involves the collection of extensive data from the population for the purpose of describing and interpreting an existing situation under study using a questionnaire. The study was carried out in Enugu State of Nigeria. Enugu State has six Education zones namely: Nsukka, Agbani, Awgu, Enugu, Obollo-Afor and Udi with 292 public secondary schools. The population of this study comprised 388 business studies teachers in public secondary schools in the six Education Zones in Enugu State. The sample size for this study consisted of 149 business studies teachers in public secondary schools in Enugu State. The simple random sampling technique was used to select two education zones from the six zones in the study area. The two selected zones were Enugu and Agbani Zones. The instrument for data collection for this study was a structured questionnaire titled "Teachers' Utilization of Instructional Technology for Quality Teaching Questionnaire" (TUITQTQ). The face validity of the instrument was established using three experts. The questionnaire was structured on a 5- point rating scale of Very Highly Utilized (VHU), Highly Utilized (HU), Moderately Utilized (MU), Lowly Utilized (LU) and Not Utilized (NU).

The instrument designed for this study was subjected to face and content validation by three experts. Cronbach Alpha was used to establish the reliability of the instrument. The reliability index obtained was $r = 0.86$ and 0.81 . The researchers and two research assistants administered copies of the questionnaire to the respondents in their various schools. Out of the 149 copies of the questionnaire administered, two were incompletely filled and four were not returned. Six copies of the questionnaire were not utilized. The total number of copies of the questionnaire used was 143 and this represented 95.97% return rate. The data collected were analyzed using arithmetic mean and standard deviation to analyze data related to the research questions and determine the closeness of the respondents' means respectively. Inferential statistics of t-test was used to test the null hypotheses at 0.05 level of significance. In testing the null hypotheses,

when the p-value is less than or equal to 0.05 ($P \leq 0.05$), the null hypothesis is rejected. On the other hand, when the p-value is greater than 0.05 ($p > 0.05$), the null hypothesis is accepted.

6. Results

Research Question 1: To what extent do business studies teachers utilize multimedia projectors for quality teaching of business studies in secondary schools in Enugu State?

Analysis of data relating to this research question is presented in Table 1.

Table 1: Respondents' mean ratings on the extent business teachers utilize multimedia projector for quality teaching (N =143)

S/no	Multimedia Projector	Mean	SD	Decision
1.	Using multimedia projectors to demonstrate to students	3.37	0.71	Moderately utilized
2.	Using slides in presenting a lesson	3.31	0.56	Moderately utilized
3.	Using film strips to summarize information and ideas	3.43	0.62	Moderately utilized
4.	Using overhead projector to demonstrate a lesson	3.29	0.77	Moderately utilized
5.	Incorporating visual aspects to a presentation	3.08	0.72	Moderately utilized
6.	Adding of new slides to make lesson more organized	3.10	0.69	Moderately utilized
7.	Using video materials to illustrate images during lesson	3.37	0.71	Moderately utilized
8.	Editing text	3.29	0.66	Moderately utilized
9.	Modifying text	3.18	0.80	Moderately utilized
10.	Removing existing slides to make lesson more organized	3.23	0.62	Moderately utilized
11.	Using computer images to design learning experiences	3.13	0.75	Moderately utilized
12.	Using charts and graphs in presenting their lesson	3.31	0.67	Moderately utilized
	Cluster Mean	3.26		Moderately utilized

Data analysis in Table 1 shows a cluster mean of 3.26 which indicates that business studies teachers moderately utilized multimedia projectors for quality teaching in secondary schools in Enugu State. The standard deviations of 0.56 to 0.80 are within the same range showing homogeneity in responses.

Research Question 2: To what extent do business studies teachers utilize interactive whiteboard for quality teaching of business studies in secondary schools in Enugu State?
Analysis of data relating to this research question is presented in Table 2.

Table 2: Respondents' mean ratings on the extent business teachers utilize interactive whiteboard for quality teaching (N =143)

S/no	Interactive whiteboard	Mean	SD	Decision
1.	Linking objects to make classes non-linear	2.75	0.81	Moderately utilized
2.	Using animation to enable students to learn faster and easier	2.67	0.74	Moderately utilized
3.	Using LCD panels to present a common image to students	2.45	0.60	Lowly utilized
4.	Using charts in presenting pictorial pictures	2.55	0.62	Moderately utilized
5.	Adding interactive chats to every presentation	2.50	0.60	Moderately utilized
6.	Using interactive whiteboard for drawings and diagrams	2.22	0.74	Lowly utilized
7.	Using computer images to design learning experiences	2.35	0.74	Lowly utilized
8.	Using interactive whiteboard for repeating and re-explaining a lesson	2.48	0.54	Lowly utilized
9.	Using IWB for summarizing a lesson	2.32	0.66	Lowly utilized
10	Saving and printing what is on the board including notes made during the lesson	2.45	0.68	Lowly utilized
	Cluster Mean	2.47		Lowly utilized

Analysis in Table 2 shows a cluster mean of 2.47 which indicates that business studies teachers' lowly utilized interactive whiteboard for quality teaching in secondary schools in Enugu State. The standard deviations of 0.54 to 0.81 are within the same range showing greater consensus of opinion.

6.1 Testing of Null Hypotheses

Hypothesis 1: Male and female business studies teachers do not differ significantly in their mean responses on the extent of utilization of multimedia projectors for quality teaching of business studies in secondary schools in Enugu State.

Analysis of data relating to this hypothesis is presented in Table 3.

Table 3: Summary of t-test result of male and female business teachers on the extent of utilization of multimedia projectors for quality teaching

Multimedia projector	N	SD	df	P-value	Decision	
Male	21	3.18	0.25	141	.07	Not significant
Female	122	3.27	0.29			

Data analysis in Table 3 shows that male and female business studies teachers do not differ significantly in their mean responses on the extent of utilization of multimedia projectors for quality teaching in secondary schools in Enugu State. This is shown by the p-value of .07, which is greater than the significant level of 0.05. The null hypothesis of no significant difference between the two groups is therefore accepted.

Hypothesis 2: There is no significant difference in the mean ratings of business studies teachers on the extent of utilization of multimedia projectors for quality teaching of business studies in secondary schools in Enugu State on the basis of age.

Analysis of data relating to this hypothesis is presented in Table 4

Table 4: t-test analysis on mean ratings of business teachers on the extent of utilization of multimedia projectors for quality teaching of business studies on the basis of age

Multimedia projector	N	SD	df	P-value	Decision	
22-40 years	59	3.24	0.28	141	.83	Not significant
41-60 years	84	3.27	0.29			

Data in Table 4 show that there is no significant difference in the mean ratings of business studies teachers on the extent of utilization of multimedia projectors for quality teaching in secondary schools in Enugu State on the basis of age. This is shown by the p-value of 0.83, which is greater than the significance level of 0.05. The null hypothesis of no significant difference between the two groups is therefore accepted.

Hypothesis 3: Male and female business studies teachers do not differ significantly in their mean responses on the extent of utilization of interactive whiteboard for quality teaching of business studies in secondary schools in Enugu State.

Analysis of data relating to this hypothesis is presented in Table 5

Table 5: Summary of t-test result of male and female business teachers on the extent of utilization of interactive whiteboard for quality teaching

Interactive whiteboard	N	SD	df	P-value	Decision	
Male	21	2.48	0.28	141	.15	Not significant
Female	122	2.47	0.23			

As shown in Table 5, male and female business studies teachers do not differ significantly in their mean responses on the extent of utilization of interactive whiteboard for quality teaching in secondary schools in Enugu State. This is shown by the p-value of .15, which is greater than the significant level of 0.05. Therefore, the null hypothesis is accepted.

Hypothesis 4: There is no significant difference in the mean ratings of business studies teachers on the extent of utilization of interactive whiteboard for quality teaching of business studies in secondary schools in Enugu State on the basis of age.

Analysis of data relating to this hypothesis is presented in Table 6

Table 6: t-test analysis on mean ratings of business teachers on the extent of utilization of interactive whiteboard for quality teaching of business studies on the basis of age

Interactive whiteboard	N	SD	df	P-value	Decision
22-40 years	59	2.48	141	.45	Not significant
41-60 years	84	2.47			

Table 6 shows that the p-value of 0.45 is greater than the significance level of 0.05. This implies that there is no significant difference in the mean ratings of business studies teachers on the extent of utilization of interactive whiteboard for quality teaching in secondary schools in Enugu State on the basis of age. Therefore, the null hypothesis is accepted.

7. Discussion

The findings of the study indicated that business studies teachers moderately utilized multimedia projectors for quality teaching of business studies in secondary schools in Enugu State. The findings of the study are similar with the findings of Ajayi, Gata and Soliu (2018) who found that slide projectors enhances teaching and learning in secondary schools but teachers seldom utilize it for teaching. Ajayi, Gata and Soliu argued that ICT, which projector is part, based education, if properly utilized, can be made interactive and this can provide activity based teaching methods in which students can actively participate thereby providing experiences that would sink deeper into the students' memories than listening to verbal teaching. This means that multimedia projectors should be properly rooted in the secondary school curriculum so that the level of literacy will be increased with regard to the use of instructional technology in teaching business studies. In support of this, Shah and Khan (2015) and Okedeyi, Oginni, Adegorite and Saibu (2015) who held that the utilization of multimedia projectors especially in power-point presentations in teaching and learning improved students' achievement test as compared to the traditional method of teaching. The use of multimedia projector in teaching makes genuine effort to the learners which help the students to comprehend the thoughts and get in the actual concept on that subject matter. Shah and Khan stated further that the use of multimedia projectors helps students to work in groups, express

their knowledge in multiple ways, solve problems, revise their own work and construct knowledge.

Testing of the first and second hypotheses revealed that male and female business studies teachers did not differ significantly in their mean ratings on the extent of utilization of multimedia projectors for quality teaching of business studies in secondary schools in Enugu State. This agrees with the findings of Ajayi, Gata and Soliu (2018) who reported that there is no significant difference on teachers' utilization of slide projector in teaching. There was also no significant difference in the mean ratings of business studies teachers on the extent of utilization of multimedia projectors on the basis of age. It followed therefore, that the null hypothesis of no significant difference was accepted. This disagrees with the findings of Lari (2014) who stated that there was a significant difference. This implies that the use of multimedia projectors such as video projectors and power-point had a significant positive effect on students' performance in secondary schools.

The findings of the study also indicated that business studies teachers lowly utilized interactive whiteboard for quality teaching of business studies in secondary schools in Enugu State. The finding of the study is in consonance with that of Agbagbue (2018) who found that there is a low utilization of instructional media in teaching business studies in secondary schools. In support of this, Al-Faki and Khamis (2014) and Aytac and Sezgul (2012) reported teachers' inefficiency in the use of interactive whiteboard in teaching and learning. Gambari, Balogun and Alfa (2014) noted that the use of whiteboards shifts instruction from presentation to interaction and students' focus shift from teachers unto content, making Interactive Whiteboard lessons more student-centered than traditional ones. The authors further stated that interactive whiteboard allows advanced and careful lesson planning, freeing teachers to use the interactive whiteboard to generate efficient and effective learning. It gives teachers greater freedom during the lessons to attend to individual needs of students and to differentiate instructions.

The test of the third and fourth hypotheses indicated that male and female business studies teachers did not differ significantly in their mean ratings on the extent of utilization of interactive whiteboard for quality teaching of business studies in secondary schools in Enugu State. There was also no significant difference in the mean ratings of business studies teachers on the extent of utilization of interactive whiteboard on the basis of age. Therefore, the null hypothesis of no significant difference was accepted. This agrees with the findings of Gambari, Balogun and Alfa (2014) and Aytac and Sezgul (2012) who affirmed that no significant differences were found in terms of gender. The findings also disagrees with that of Agbagbue (2018) who reported that there is significant difference in the mean ratings of male and female business studies teachers on extent of utilization of instructional media for teaching business studies in secondary school.

8. Conclusion

Instructional technology is necessary ingredient for the attainment of business studies objectives, but this study found out that some business studies teachers in secondary schools lowly utilized this technology for quality teaching of business studies, while others moderately utilized it in teaching. Utilization of multimedia projectors, interactive whiteboard, video conferencing and digital games by business studies teachers is essential for acquiring timely, current and up-to-date information necessary for academic excellence. On the basis of these findings therefore, it could be concluded that the utilization of instructional technology by business studies teachers may help secondary school students acquire entrepreneurial skills that will help them to be self-sufficient in the competitive world of work.

8.1 Recommendations

Based on the findings of this study, the researcher proffers the following recommendations:

- 1) The Ministry of Education should organize seminars, workshops and any other in-service courses frequently to familiarize and sensitize teachers with a wide range of instructional technology and their potentials. This could trigger teachers' creativity and innovation in the use of instructional technology in the teaching and learning process. Moreover, the planners/organizers of such seminars and workshops should ensure that the teachers personally get information about the seminars/workshops to avoid communication breakdown and encourage them to attend.
- 2) Government should provide some of the instructional technology to schools to subsidize their costs and encourage the local publishers/authors to produce more affordable instructional technology. This should also trigger teachers to be innovative and initiative to produce instructional technologies locally or improvise the existing ones to suit their varied needs.
- 3) The school administration should be sensitized on the importance of instructional technology in order to provide them in their school budgets and provide storage facilities. The administration should involve teachers in the acquisition of instructional technology and encourage them to use technologies in teaching.

References

- Agbagbue, A. O. S. (2018). Utilization of instructional media for teaching business studies in Emohua Local Government Area in Rivers State. *International Journal of Innovative Education Research*, 6(1), 94-100.

- Ajayi, D. T. W., Gata, A. D., & Soliu, S. A. (2018). Slide projector utilization and the teaching of basic science in Plateau North education zone. *KIU Journal of Humanities*, 3(1), 323-329.
- Al-Faki, I. M., & Khamis, A. H. A. (2014). Challenges facing teachers in using interactive whiteboards in their classes. *American International Journal of Social Sciences*, 3(2), 136-158.
- Al-Ahdal, A. A. M., & Al-Hattami, A. A. (2014). Assessing teachers' and students' perceptions about teaching and learning using video conferencing method of instruction. *Academic Research International*, 5(1), 111-119.
- Al-Mamun, M. (2014). Effectiveness of audio visual aids in language teaching in tertiary level. dspace.bracu.ac.bd/bitstream/handle/13177014.pdf
- Amin, M., Azim, M., & Kalam, M. (2018). The benefit of using multimedia projector in English Language teaching classroom. *International Journal of Social Sciences and Humanities*, 3(1), 62-76.
- Atkinson, R. K. (2010). Learning from examples instructional principles from the Worked examples Research. Mississippi State University
- Aytac, T. & Segul, I. (2012). *Interactive whiteboard factor in education: Teachers' opinion and problems related to the use of interactive whiteboards in learning and teaching process*. 6th International Computer and Instructional Technology Symposium 4-6 October, Gaziantep University, 2012.
- Bosah, I. P., Ejesi, N. S., & Aleke, D. I. (2014). Disruptive classroom behaviours among primary school pupils: Intervention imperative. *Ideal Journal of Education and Policy Studies*, 2(2), 86-91.
- Daramola, C. F. (2013). Gender differences in the use of academic resources. The case of FUTA library. *Interaction Journal of Library and Information Science*, 5(8), 256-261.
- Effiong, O. E., & Igiri, C. E. (2015). Impact of instructional materials in teaching and learning of biology in senior secondary schools in Yakurr LGA. *International Letters of Social and Humanistic Sciences*, 62, 27-33.
- Federal Republic of Nigeria (2014). *National policy on education*. Lagos: NERDC Press.
- Gambari, I. A., Balogun, S. A., & Alfa, A. S. (2014). Efficacy of interactive whiteboard on psychomotor skills achievement of students in Isometric and Orthographic projection. *Contemporary Educational Technology*, 5(4), 316-330.
- Hamari, J. & Nousiaien, T. (2015). Why do teachers use game-based learning technologies? The role of individual and institutional ICT readiness. *Proceedings of the 48th Hawaii International Conference on System Sciences, IEEE*, 682-691.
- Hutt, M. (2017). Benefits of interactive whiteboard in the classroom.
- Isman, A. (2012). Technology and technique: An educational perspective. *The Turkish Online Journal of Educational Technology (TOJET)*, 11(2), 90 -99.
- Lari, F. S. (2014). The impact of using power point presentations on students' learning and motivation in secondary schools. *Procedia-Social Behavioural Sciences*, 98: 1672-1677.

- Mahdi, H. S., & Al-Dera, A. S. (2013). The impact of teachers' age, gender and experience on the use of information and communication technology in Teaching. *English Language Teaching*, 6(6), 57-67.
- Nworgu, B. G. (2015). *Educational research: Basic issues and methodology*(3rded). Enugu: University Trust Publisher.
- Ogwunite, P. C., & Okolocha, C. C. (2016). Strategies considered effective by business teacher in south, Nigeria for teaching new business subjects in secondary schools, *International Journal of Innovative Education Research*, 4(2), 60-70.
- Ohiwerei, F. O. (2015). *Pedagogy of teaching business education courses*. Ekpoma, Edo State: Cynos Printing Press.
- Ojeaga, I. J. I., & Igbinedion, V. I. I. (2012). Potentials of e-learning as a study tool in business education in Nigerian schools. *International Education Studies*; 5(5); 218-225.
- Okedeyi, A. S., Ogini, A. M., Adegorite, S. O., & Saibu, S. O. (2015). The relevance of multimedia skills in teaching and learning of scientific concepts in secondary schools in Lagos State, Nigeria. *Journal of Education and Practice*, 6(15), 150-154.
- Okwelle, P. C., & Allagoa, F. O. N. (2014). Enhancing teachers' competence in the use of instructional materials in electronics education in senior secondary schools in Nigeria. *Research on Humanities and Social Sciences*, 4(28), 20-25.
- Olusegun, A. S. (2017). Quality instruction as a motivating factor in higher education. *International Journal of Higher Education*, 6(4), 173-184.
- Omariba, A. (2012). *Challenges facing teachers and students in the use of instructional technologies: A case of selected secondary schools in Kishi County, Kenya*. A Master's Thesis submitted to the Department of Educational Communication and Technology in the School of Education and Human Resource Development of Kenyatta University.
- Omariba, A., Gitau, E. N., & Ayot, H. O. (2016). Challenges facing teachers and students in the use of instructional technologies: A case of selected secondary schools in Kisii Central District, Kiisi County. *International Journal of Information Research and Review*, 3(11), 3329 – 3137..
- Onwuagboke, B. B. C., Singh, T. K. R & Fook, F.S. (2015).Need for ICT integration for effective instructional delivery in Nigerian Colleges of Education. *Journal of Education and Practice*, 6(3), 51-56.
- Sánchez-Mena A, Martí-Parreño, J., & Aldás-Manzano J. (2017). The effect of age on teachers' intention to use educational video games: A TAM Approach. *The Electronic Journal of e-Learning* 15(4), 355-366 available online at www.ejel.org
- Shah, I., & Khan, M. (2015). Impact of multimedia-aided teaching on students' academic achievement and attitude at elementary level. *US-China Education Review*, 5(5), 349-360.
- Tety, J. L. (2016). *Role of instructional materials in academic performance in community secondary in Rombo District*. Master's Thesis submitted to Administration, Planning and Policy Studies of the Open University of Tanzania.

- Qaiser, S. (2011). Role of educational technology at primary school level in District Karak, Pakistan. *International Journal of Academic Research in Business and Social Sciences*, 1(3), 85 – 95.
- Udalla, N. (2012). *Principal's administrative effectiveness in secondary schools in Anambra State*. Nnamdi Azikiwe University Digital Library.
- Uzuegbu, C. P., Mbadiwe, H. C., & Anulobi, J. C. (2013). Availability and utilization of instructional materials in teaching and learning of library education in tertiary institutions in Abia state. *Wudpecker Journal of Educational Research*, 2(8), 111–120.
- Wokocha, Babalola & Brown. (2017). Supervision and business studies teachers performance in selected secondary schools in Port-Harcourt *Metropolis. International Journal of Education and Evaluation*, 3(8), 34 – 42.
- Xia, L. (2014). The use of ICT in pre-school education in Greece and China: A comparative study. *Procedia-Social and Behavioural Science*, 112, 1167-1176
- Xu, H. & Moloney, R. (2011). It makes the whole learning experience better: Student feedback on the use of the interactive whiteboard in learning Chinese at tertiary level. *Asian Social Science*, 7(11).
- Yanez, L., & Coyle, Y. (2011). Children's perceptions of learning with an interactive whiteboard. *ELT*, 65(4), 446-457.

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