

EVALUATING THE FACTORS AFFECTING TEACHERS' READINESS ON INFORMATION AND COMMUNICATION TECHNOLOGY (ICT) INTEGRATION IN BUSINESS STUDIES IN PUBLIC SECONDARY SCHOOLS IN ABIA STATE NIGERIA

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Abstract

The study evaluated the factors affecting teachers' readiness on ICT integration in business studies in public secondary schools in Abia State Nigeria. Two research questions were answered and two hypotheses tested. The population of the study consisted of 154 business studies teachers from Aba zone in Abia State Nigeria. The data used for this study were ICT competence (X_1), the teachers' personal characteristics (X_2), students' behavior (X_3), ICT infrastructure access (X_4), capacity building (X_5), and ICT integration (Y). Data collected were subjected to multiple regression analysis on the basis of which a relationship model was estimated using mainly primary data source. The result of the multiple regression analysis revealed that at a significance level of 0.05, all the five factors affecting teachers' readiness (X_1 , X_2 , X_3 , X_4 , and X_5) are as a whole and/or individually have significant effect on ICT integration in business studies. It was concluded that all the five factors affecting teachers' readiness contribute significantly in predicting ICT integration in business studies in public secondary schools in Abia State by explaining ICT integration by 55.8%. It was recommended among others that for ICTs to be fully integrated into secondary education efforts should be made for the school administrators to be competent and have broad understanding of technology, curricular, administrative, financial and social dimensions of ICT use in education.

Keywords: Secondary School Teachers, Teachers' Readiness, Information and Communication Technology, Integration, Business Studies,

Introduction

Business Studies is one of the components of Vocational Education on which the National Policy on Education laid much emphasis in 2004. It is a concept that deals on the acquisition of knowledge, skill understandings and attitude to perform in the world of business as a producer and/or consumer of goods and services that business offers. Nomuja (2013). Business Studies is a program of study which gives the students who wish to pursue a career in business, an opportunity to develop skills, abilities and understanding that will enable them to enter, perform and compete in the business world. Business studies enable the students to attain an acceptable level of business abilities and understandings.

Technology integration in education is the act of employing the Internet, computers, CD-ROMs, satellites, interactive media, teleconferencing, and other technological means to instructional delivery to support, create and enhance learning. Technology integration is viewing technology as an instructional tool for delivering

subject matter in the curriculum already in place. Thus, technology integration can be seen as combining technologies with teaching and learning strategies in order to meet curriculum standards and learning outcomes of each lesson, unit and activity.

The integration of ICT in educational environment has transformed the teaching and learning process in which students deal with knowledge in an active, self-directed and constructive way. ICT is a valuable instrument that supports new ways of teaching-learning process. The successful integration of ICT in teaching-learning process in secondary schools is highly dependent on the readiness and preparedness of teachers as the integration of ICT in the classroom is essential to provide opportunities for students to learn and operate effectively in the information age.

Educational reforms should consider the plans of full integration of ICTs in the educational system at all levels, for the 21st century learner which requires the skills and competencies to compete in the global market. There is a great shift from traditional to the technologically based teaching to ensure the quality of education (Aremu & Adediran 2011). Traditional Learning is where all the power is in the hand of the teacher. The teacher teaches and a student learner will listen sitting on the same place, it is a learning process where the students' different learning styles are neglected and the students are forced to learn in the same manner as the teacher wishes them to. (Mikre, 2012). According to Hahighi and Eskandari (2012) for the educational development plan to meet the global challenges ICT should be used as an instrument as this helps the students to practice what they learned in the first-hand knowledge experience. ICT helps to increase the interest of the students by removing the old traditional teaching process into the new way of learning with new learning experience; with the ICT the teacher gets new ideas, instructional techniques, and this furthers the development of the students which prepares them for the competitive global market.

According to Drent and Meelissen (2007) technology integration is meant to be cross-curricular rather than become a different course-topic itself; it should be used as a tool to support the educational aim and objectives such as communication and problem solving skills, skills for searching and assessing information which are essential for the preparation of students for the knowledge world. To enhance the cognitive behaviours the student need to learn in the business world, every classroom teacher should be conversant with learning technologies in order to enhance the students' learning in every subject as this can engage the thinking, decision making, problem solving and reasoning behaviours of students especially those offering business courses.

To meet the demands of the 21st century, students need to know more than core subjects. They should know how to apply their knowledge and skills by thinking critically, applying knowledge to new situations, analysing information, generating new ideas, communicating, collaborating, solving problems and making decisions; as this assures both flexibility and security in this era of constant change. Those who can learn new information, new software programs and new ways of doing things have better opportunities in the global market. (Singh & Chan, 2014).

The Strategy in educational reforms should focus on teaching and learning quality, access to reliable and meaningful information, transparent accountabilities and appropriate learning environment and infrastructure. The teacher is the major factor that determines the development and innovation in education as they are the one who uses ICT investment for the development of education. This is due to the fact that technology itself does not have any educational value, it only becomes essential when teachers use it in their

teaching-learning process. This work evaluates the factors affecting Teachers' Readiness on the integration of ICTs in Business Studies in Public Secondary Schools in Abia State.

Problem Statement

Business activities which involve production of goods and services contribute in a variety of ways to the nation building. In a business environment with increasing complexity and constant changes, there is urgent need to give a critical look on the integration of ICT in business studies at the secondary school level.

If teachers are expected to integrate ICT into the school curriculum, adequate preparations must be made at teacher education level. Teacher preparation programs should focus mainly on the need for the student-teacher to have ICT skills for their personal use and in the preparation of materials for teaching and learning activities (lesson preparation); the need to facilitate the direct use of ICT in students' learning activities within the classroom situations and the need for the teachers to develop in their students a critical awareness on ICT usage and its social implications. The teachers in Nigerian secondary schools are not competent in basic computer operations and in the use of the generic software. (Nino 2010). To effectively impart knowledge to students, it is essential that teachers should be well equipped with the knowledge that they need. The main issue is whether the teachers have the required knowledge of ICT. The problem of this study therefore is to evaluate the factors affecting teachers' readiness on ICT integration in business studies in public secondary schools in Abia State.

Aim and Objectives

The primary aim of this paper was to evaluate the factors affecting teachers' readiness on ICT integration in Business Studies in public secondary schools in Abia State. Specifically the study sought to evaluate:

1. The collective effect of the factors affecting teachers' readiness on ICT integration in Business Studies in public secondary schools in Abia State.
2. The individual effect of the factors affecting teachers' readiness on ICT integration in Business Studies in public secondary schools in Abia State.

Research Questions

The following research questions guided the study

1. To what extent do collective effects of teachers' readiness affect ICT integration in Business Studies in public secondary schools in Abia State?
2. To what extent do individual effects of teachers' readiness affect ICT integration in Business Studies in public secondary schools in Abia State?

Hypothesis of the Study

On the basis of the statement of problem, objective of the study and research questions, the following hypothesis have been formulated:

H₀₁: The collective effect of teachers' readiness does not significantly affect ICT integration in Business Studies in public secondary schools in Abia state.

H₀₂: The individual effect of teachers' readiness does not significantly affect ICT integration in Business Studies in public secondary schools in Abia state.

Scope of the Study

In studying the effect of factors affecting teachers' readiness in ICT integration in Business Studies in public secondary schools in Abia state, there are many stakeholders to

consider, but this study was delimited to a survey of business studies teachers in public secondary schools in Aba zone. Nevertheless, this work has some limitations since the researchers were not able to study all the public secondary schools in Abia state.

Literature Review

ICTs are exerting impacts on pedagogical approaches in the classroom; their contributions to changes in teaching practices, school innovations and community services are considerable. In a study titled what are we doing with ICT in Physical Education, Thomas and Stratton (2006) examined attitudes, training, numbers of pieces of equipment and hardware owned and its employment use across nine local education authorities, the result of the study revealed that whether ICT software and hardware are used effectively depends on teachers' beliefs and experience, levels of knowledge, attitudes towards ICT, educational applications, the expected outcomes and the teaching and learning approach. In another study Kirschner and Woperies (2003) identified that some of the major skills required by the teachers to be able to integrate ICT in the teaching-learning process are competency in making personal use of ICTs, mastery range of educational paradigms that make use of ICT, making use of ICTs as mind tools, using ICTs as tools for teaching, mastering a range of assessment paradigms which involves the use of ICTs and understanding the policy dimensions of the use of ICTs for teaching and learning.

Volman & VanEck (2001) investigated a study about age and gender difference in the individual in the work place using the Theory of Planned Behaviour. Their study focused on user reactions and technology usage behaviour over a 4 month period among about 400 workers that were introduced to a new software technology application. The outcome revealed that the men and young workers were more strongly influenced by their attitude using technology than women and older worker. An empirical study by Albirini (2006) analysing the factors relating to the teachers' attitudes toward ICT usage from high school English teachers about their perception of computer attributes, cultural perceptions, computer competence, computer access and personal characteristics revealed that computer access has been one of the major hindrances to ICT adoption and integration in education; also that age was not a significant factor in relation to teachers' attitudes toward ICT integration. His study also emphasized the importance of computer attributes in the process of computer adoption in developing countries. Hence, the efficient and effective use of ICT depends much on the availability of hardware and software and the equity of access to ICT resources by teachers, students, and administrative staff.

In a study by Rathod and Jadhav (2015) on the factors affecting Secondary teachers' decisions to integrate ICT in Convent school, it was identified that lack of adequate training and experience, teachers negative attitude towards computer knowledge, and lack of confidence lead to reluctance to use computers by teachers. In another study by Doshmanziari and Mostafavi (2017) on the barriers to the use of educational technology in the learning process of primary school students, it was identified that human factors, cultural factors, physical factors and course content variability are the major factors on the development of educational technologies in primary schools.

According to Mojgan, Kamaria, Wong, Bahaman, and Foo (2009) the factors affecting teachers' readiness in integrating ICT in education may be classified into two namely: Manipulative and non-manipulative school and teacher factors. The non manipulative factors are factors that cannot be influenced directly by the school, such as age, teaching experience, computer experience of the teacher or governmental policy and the availability of external support for schools such as teachers' characteristics and parent

and community support. Manipulative factors refer to the attitudes of teachers towards teaching ICT, ICT knowledge and skills of teachers, commitment of the school towards the implementation process and availability of ICT support such as level of and accessibility to the ICT infrastructure, availability of time to experiment, reflect and interact, available support to computer-using teacher in the workplace, availability of vision and plan about the contribution of ICT to education, school culture, computer attributes, level and quality of training for school teachers and principals, attitude towards computers and computer competence. These school and teacher factors are interrelated and the successful integration of ICT in education is not dependent on the availability or absence of one individual factor but must be determined through a dynamic process involving a set of interrelated factors. In a study conducted by Yusuf (2005) on the perceived self-efficacy of teachers in the implementation of computer education in Nigerian secondary schools revealed that majority of the teachers do not have the needed experience in the use of computer, competence in basic computer operations, and skills and knowledge in the use of common computer software are factors affecting the integration of ICT in secondary education.

Berner (2010) in his study of relationships between computer usage in the classroom and seven independent variables: perceived relevance; desire to plan; beliefs about computer competence, beliefs about technology administrative support; and peer support found that schools belief in their competence has the highest effect on predicting the use of computers in the classroom. Hence, teachers should develop their skills based on the educational goals. In another study by Aremu and Adediran (2011) on teacher readiness to integrate IT into teaching and learning process in Nigerian secondary schools. The study examined whether teachers' level of basic skill in the use of IT; teachers' attitudes to the use of IT, and teachers' level of knowledge about IT affect teachers' readiness to integrate IT in teaching-learning process. It was revealed that low level of knowledge about IT; low skill in IT use; and teachers' attitudes to the use of IT affects its integration in teaching-learning process.

Yousef and Dahmani (2008) in their study on Economics of E-Learning: The impact of ICT in Higher Education, it was revealed that online gaming, use of Facebook, chat rooms and other communication channels are some factors affecting the use of ICT in education since students easily switch to these sites at the expense of the students. Mikre (2012) in his study identified that some of the limitations to ICT use in education are related to student behaviour as students tend to misuse technology for leisure time activities and do not give much time to learning and studying. In a paper titled ICT in Education: United Nations Development Programme,

In a different category of study on the models for integrating ICT in teacher training programmes Efaw (2005) in an experimental study on effective strategies in teacher's development programme among United States Military Academy at West Point adopted three phases in order to accomplish ICT development most effectively viz: learning, practice and feedback, and continued development. In the first phase he incorporated training in available technology, classroom modelling of the technology, learning how to encourage student participation and initial feedback from experienced teachers. In the second phase he encompassed setting aside time for the new instructors' schedules for designing and practising lessons, mentoring by experienced teachers, videotaping practice lessons, encouraging reflection among the new instructors and providing feedback on their efforts. The third phase involved formal developmental workshop and several activities and programmes on ICT integration in teaching-learning

process. From the study it is understood that continuous workshops and seminars will help teachers to incorporate and integrate ICT in teaching-learning process since it takes a long-term programme for good effectiveness in the use of ICT. Therefore for the teachers to be ready to integrate ICT in teaching-learning process continued development, training and mentorship are necessary for an effective teacher's development programme. In order for ICT to be effectively integrated into teacher preparation programme, teachers should complete well planned sequence of courses and experiences that will help them to understand and apply ICT in classroom. (Indian Society for Technical Education (ISTE). Hence ICT must be infused into the teacher training instructional practices and teacher training schools should use ICT in their courses as a teaching-learning tool.

Table 1: Appraisal of some related literatures to indicate factors affecting teachers' readiness on ICT integration in public secondary schools in Abia state Nigeria .

Authors	Study Areas	Factors affecting teachers' readiness on ICT integration
Thomas and Stratton (2006)	England	<ul style="list-style-type: none"> • Teachers' belief and experience • Levels of knowledge • Attitudes towards ICT • Educational applications • The expected outcomes • The teaching and learning approach
Kirschner and Woperies (2011)	Europe	<ul style="list-style-type: none"> • Competency in making use of ICTs • Mastery range of educational paradigms that make use of ICT • Making use of ICTs as mind tools • Mastery range of assessment paradigms which involves the use of ICTs • Understanding the policy dimensions of the use of ICTs for teaching and learning.
Albirini (2006)	Syrian English as a Foreign Language Teachers	<ul style="list-style-type: none"> • Perception of computer attributes • Cultural perceptions • Computer competence • Computer access • Personal characteristics.
Watson (2001)	UK	<ul style="list-style-type: none"> • Lack of adequate training • Computer anxiety and self-efficacy • Teacher resistance • Lack of enthusiasm
Rathod and Jadhav (2015)	Pune	<ul style="list-style-type: none"> • Lack of adequate training • Teachers negative attitude towards computer knowledge • Lack of confidence
Morjgan al(2009)	Malaysia	<ul style="list-style-type: none"> • Non-manipulative school and teacher factors (teaching experience; computer experience of the teacher; governmental policy; and availability of external support) • Manipulative school and teacher factors

		(level of accessibility of ICT; availability of time to experiment, reflect and interact; available support to computer using teacher; school culture; computer attributes; computer competence; and level of training)
Berner (2010)	Virginia	<ul style="list-style-type: none"> • Perceived relevance • Desire to learn • Emotional reaction to technology • Beliefs about computer competence • Beliefs about technical administrative support
Efaw (2005)	USA	<ul style="list-style-type: none"> • Peer support • Training in available technology • Classroom modelling • Schedule time • Learning (training in available technology) • Practice (schedule time) • Feedback (development and workshop)
Yusuf (2005)	Nigeria	<ul style="list-style-type: none"> • Competence in the basic computer operations • Skills and knowledge in the use of common computer software
Aremu and Adediran (2011)	Nigeria	<ul style="list-style-type: none"> • Experience in the use of computer • Low level of knowledge about IT • Low skill in IT use • Teachers' attitudes to the use of computer
Doshmanziari and Mostafavi (2017)	Tehran	<ul style="list-style-type: none"> • Human factors • Cultural factors • Physical factors • Course content variability on the development of educators.

Content Analysis was performed on all the identified factors in order to reduce them to a considerable number to be used in the study, and to eliminate collinearity between them, they were clustered in their similarities as shown in Table 2

Table 2: Clustering of the identified factors affecting teachers' readiness on ICT integration in Business studies in public secondary schools in Abia state.

S/N	Structural factors	Non-adopting factors
1	<ul style="list-style-type: none"> • Teaching and learning approach • Level of knowledge in the use of ICT • Educational applications • Competence in making use of ICTs • Mastery range of assessment paradigms • Making use of ICTs as mind tools 	ICT competence

2	<ul style="list-style-type: none"> • ICT experience of the teacher • Skill and knowledge in the use of computer software • Low skill in the use of ICTs 	Teachers' personal characteristics
	<ul style="list-style-type: none"> • Teachers attitudes towards ICT usage • Personal characteristics • Computer anxiety and self-efficacy • Teacher resistance • Lack of confidence • Perception of computer attributes • Lack of enthusiasm • Perceived relevance • Desire to learn 	
3	<ul style="list-style-type: none"> • Student behaviour • Online gaming • Use of Facebook • Chatroom 	Student behaviour
4	<ul style="list-style-type: none"> • Level and accessibility of ICT infrastructure • Availability of time to experiment, reflect and interact • Schedule and practice time • Lack of release time for teachers 	ICT infrastructure access
5	<ul style="list-style-type: none"> • Adequate financial and staff support • Mentorship • Technical administrative support • Peer support • Learning content and language • Developmental workshops/activities for school teachers and principals • Motivation • Governmental/educational policy 	Capacity building
	<ul style="list-style-type: none"> • Course content variability • Cultural factors • The expected outcome 	

Methodology

The survey research design was adopted in conducting this study. The population consisted of 154 business studies teachers from Aba Zone (IsialaNgwa North, IsialaNgwa South, OsisiomaNgwa, Obi Ngwa, Aba South, Aba North, Ugwuagbo, Ukwa West and Ukwa East LGAs). The entire population was used. Thus the population is 154. Data collected were subjected to multiple regression analysis using the SPSS (Statistical package for Social Sciences) software. ICT integration were regressed against five variables offactors affecting teachers' readiness on ICT integration. The model describing the relationship is expressed as:

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \dots \beta_n X_n + \epsilon$$

For the purpose of this study,

Y = ICT Integration

- X₁ = ICT competence
- X₂ = Teachers' personal characteristics
- X₃ = Student behavior
- X₄ = ICT infrastructure access
- X₅ = Capacity building

In order to explore the teacher readiness factors affecting ICT integration in business studies in secondary schools in Aba zone, Abia state Nigeria, a pilot study was undertaken to ensure that the main study will be able to identify clearly the research questions as well as determining the adequacy of instructions to respondents who will be completing the questions. The pilot study actually led to the modification of materials and procedure which was incorporated into the main questionnaire for the study. The questionnaire was rated using five point Likert scale range from 1 being strongly disagree to 5 being strongly agree which helped to analyze the respondent's views about the variables for teachers' readiness on ICT integration in business studies. The respondents were required to indicate the degree of agreement or disagreement with each of the statements. A numerical score was assigned to each degree of agreement/disagreement. The scores from the statements were added up to obtain the total score for each respondent.

Profile of Respondents in the Study

A total of 154 business studies teachers were used as participants with questionnaire on the factors affecting teachers' readiness on ICT integration in Business studies in public secondary schools in Abia state. A total of 142 valid questionnaires were returned; this forms 92.2% rate. The 142 respondents comprised of 52 male teachers (36.6%) and 90 female teachers (63.4%). There were 22(15.5%) M.Sc/M.Ed holders, 86(60.6%) B.Sc/B.Ed holders and 34(23.9%) NCE holders. Majority of the respondents fell within the age range of 40-59, followed closely by those within the age range of 30 -39, then 50 and above; while those within the age range of 20 – 29 formed the lowest number of respondents.

Validity and Reliability of the Instrument

The research instrument (via questionnaire) was duly evaluated by professionals outside the pressure audience. A pilot test of all the parts of the questionnaire was conducted to ensure validity and reliability of the questions which led to the actual modification of materials and procedures. The feedback from the respondents regarding the questionnaire was useful in revising the questions hence some changes were made after the pilot study in order to avoid confusion but to offer better understanding to ensure that respondents answered the questionnaire to achieve the purpose of the study.

Reliability of the data was assessed using Cronbach's Alpha Coefficient Alpha. The value of Cronbach's alpha derived from the analysis is .805. Therefore, the instrument developed for evaluating the effect of teachers' readiness factors on the integration of ICT in business studies in public secondary schools in Abia state was considered to be reliable.

Results

The authors conducted multiple regression analysis to examine the following hypothesis:

H₀₁: The collective factors affecting teachers' readiness have no significant effect on ICT integration in Business Studies in public secondary schools in Abia state, Nigeria.

H₀₂: The individual factors affecting teachers' readiness has no significant effect on ICT integration in Business Studies in public secondary schools in Abia state, Nigeria.

The study sought how well the individual and collective factors affecting teachers' readiness affect ICT integration in business studies in public secondary schools in Abia state Nigeria. ICT integration is an aggregation of ICT competencies, teachers' personal characteristics, student behaviour, ICT infrastructure access and capacity building. Table 3 presents the multiple regression analysis between factors affecting teachers' readiness and ICT integration.

Table 3: Model Summary of the Construct

Model Summary ^b				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.747 ^a	.558	.541	2.044

a. Predictors: (Constant), Capacity Building, Student Behaviour, ICT Infrastructure Access, ICT Competence, Teachers' Personal Characteristics

b. Dependent Variable: ICT Integration

The overall predictability of the model is shown in table 3 above, it can be seen that the R-Square value for the model showed that 55.8% ($R^2 = 0.588$) of the variance in the ICT integration in business studies in public secondary schools in Abia state Nigeria can be predicted from the independent variables (ICT competence, Teachers' personal characteristics, student behavior, ICT infrastructure access and capacity building). Table 3 shows that the collective factors affecting teachers' readiness have significant effect on ICT integration in business studies in public secondary schools in Abia state, Nigeria.

Table 4: ANOVA for the Constructs

ANOVA ^a						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	716.756	5	143.351		
	Residual	568.343	136	4.179		
	Total	1285.099	141			

a. . Predictors: (Constant), Capacity Building, Student Behaviour, ICT Infrastructure Access, ICT Competence, Teachers' Personal Characteristics

b. Dependent Variable: ICT Integration

Table 4 presents the ANOVA report on the general significance of the model. As P is less than 0.05, the model is significant. Thus, the combination of the variables significantly predicts the dependent variable ($F = 34.303$, $P < 0.05$). Table 4 shows that the collective factors affecting teachers' readiness (ICT competence, Teachers' personal characteristics, student behavior, ICT infrastructure access and capacity building) when regressed have significant effect on ICT integration in business studies in public secondary schools in Abia state, Nigeria. It indicates that the model and data are well fit in explaining the

factors affecting teachers' readiness on ICT integration in business studies in public secondary schools in Abia state, Nigeria.

Table 5: T-test for the construct

Coefficients ^a				T	Sig.	
Model	Unstandardized Coefficients	Standardized Coefficients				
	B	Std. Error	Beta			
1	(Constant)	4.442	1.203	3.692	.000	
	ICT Competence Teachers	.157	.053	.200	2.959	.004
	Personal Characteristics	.139	.052	.198	2.651	.009
	Student Behaviour	.120	.050	.165	2.427	.017
	ICT Infrastructure Access	.116	.039	.180	2.996	.003
	Capacity Building	.311	.050	.401	6.211	.000

a. Predictors: (Constant), Capacity Building, Student Behaviour, ICT Infrastructure Access, ICT Competence, Teachers' Personal Characteristics

b. Dependent Variable: ICT Integration

Overall ICT INTEGRATION (Y)

$$= 4.442 + (0.157 \times X_1) + (0.139 \times X_2) + (0.120 \times X_3) + (0.116 \times X_4) + (0.311 \times X_5)$$

Results Discussion

Results are discussed in the context of research questions and tested hypotheses:

Research Question 1:

To what extent do collective factors affecting teachers' readiness affect ICT integration in Business Studies in public secondary schools in Abia State, Nigeria?

From table 3, the study found that the independent variables combined were in a relationship with the dependent variable of 0.747 which is a very strong relationship. The model ICT competence, Teachers' personal characteristics, student behavior, ICT infrastructure access and capacity building collectively explains and contributes 55.8% of the variance in ICT integration. This is a moderate percentage. It shows that much of the independent variables (ICT competence, Teachers' personal characteristics, student behavior, ICT infrastructure access and capacity building) explain and contribute to the dependent variable (ICT integration).

Research Question 2:

To what extent do individual factors affecting teachers' readiness affect ICT integration in Business Studies in public secondary schools in Abia State, Nigeria?

Table 5 shows that each of the 5 factors contributed to ICT integration in business studies in public secondary schools in Abia state; with capacity building, ICT competence, teacher's personal characteristics, and student behavior, ICT infrastructure access, contributing 31.1%, 15.7%, 13.9%, 12.0% and 11.6% respectively.

Research Hypothesis 1:

H₀₁: The collective factors affecting teachers' readiness have no significant effect on ICT integration in Business Studies in public secondary schools in Abia state.

H_{A1}: The collective factors affecting teachers' readiness have significant effect on ICT integration in Business Studies in public secondary schools in Abia state.

Table 3 and 4 show the ANOVA reports on the general significance of the model. It shows that ($R = 0.747$, $R^2 = 0.558$, Adjusted $R^2 = 0.541$, Standard Error of Estimation = 2.044), as $p < 0.05$, the model is significant. Thus the combination of the variables significantly predicts the dependent variable ($F = 34.303$; $p < 0.05$). It indicates that the model and data are well fit in explaining the factors affecting teachers' readiness on ICT integration in business studies in public secondary schools in Abia state, Nigeria. Therefore, the null hypothesis H₀₁ is rejected and the alternate hypothesis H_{A1} is accepted which means that the collective factors affecting teachers' readiness have significant effect on ICT integration in business studies in public secondary schools in Abia state Nigeria.

Research Hypothesis 2:

H₀₂: The individual factors affecting teachers' readiness has no significant effect on ICT integration in Business Studies in public secondary schools in Abia state.

H_{A2}: The individual factors affecting teachers' readiness has significant effect on ICT integration in Business Studies in public secondary schools in Abia state.

Table 5 shows the report of the individual factors on teachers' readiness affecting ICT integration in business studies in public secondary schools in Abia state, Nigeria. It shows that ICT Competence as ($B = 0.157$; Beta = 0.200; $p = 0.004$; tolerance = 0.714) as $p < 0.05$, the model is significant. Thus, this combination of the variable significantly predicts the dependent variable ($t = 2.959$; $p < 0.05$). It indicates that ICT Competence has a significant effect on ICT integration in Business studies in public secondary schools in Abia state Nigeria. Therefore, H₀₂ is rejected and H_{A2} is accepted. It also shows that Teacher Personal Characteristics as ($B = 0.139$; Beta = 0.198; $p = 0.009$; tolerance = 0.584) as $p < 0.05$, the model is not significant. Thus, this combination of the variable significantly predicts the dependent variable ($t = 2.651$; $p < 0.05$). It indicates that Teacher personal characteristics have significant effect on ICT integration in business studies in public secondary schools in Abia state. Therefore, H₀₂ is rejected and H_{A2} is accepted.

It also shows that Student behavior as ($B = 0.120$; Beta = 0.165; $p = 0.017$; tolerance = 0.704) as $p < 0.05$, the model is significant. Thus, this combination of the variable significantly predicts the dependent variable ($t = 2.427$; $p < 0.05$). It indicates that student behavior has a significant effect on ICT integration in Business studies in Abia State. Therefore, H₀₂ is rejected and H_{A2} is accepted. It also shows that ICT infrastructure access as ($B = 0.116$; Beta = 0.180; $p = 0.003$; tolerance = 0.904) as $p < 0.05$, the model is significant. Thus, this combination of the variable significantly predicts the dependent variable ($t = 2.996$; $p < 0.05$). It indicates that ICT infrastructure access has a significant effect on ICT integration in business studies in public secondary schools in Abia state. Therefore, H₀₂ is rejected and H_{A2} is accepted. It also shows that capacity building as ($B = 0.311$; Beta = 0.401; $p = 0.000$; tolerance = 0.780) as $p < 0.05$, the model is significant. Thus, this combination of the variable significantly predicts the dependent

variable ($t = 6.211$; $p < 0.05$). It indicates that capacity building has a significant effect on ICT integration in business studies. Therefore, H_{02} is rejected and H_{A2} is accepted.

Ranking of the Factors

Using the result from Pearson ranking correlation, the factors are ranked in the table 6 below:

Table 6: Ranking of the Factors in Relation to ICT Integration

Ranking	ICT integration Factor	Pearson Correlation Score
1	Capacity building	.606
2	ICT competence	.482
3	Teachers' personal characteristics	.477
4	Student behavior	.396
5	ICT infrastructure access	.324

The result from above table will add to existing literature on the subject matter. The findings indicate that capacity building is the most influential factors affecting teachers' readiness on ICT integration in business studies in public secondary schools in Abia state Nigeria as it made the important contribution. The five factors in this research was ranked using Pearson correlation; in accordance with how much each of the factors predicts ICT integration in business studies in Abia state Nigeria.

Summary of findings and Conclusion

Based on the results of the analysis, the following findings were made:

- The result of the multiple regression analysis shows that at a significance level of 0.05, all the five factors collectively affect teachers' readiness on ICT integration in business studies in public secondary schools in Abia state.
- Individually, it was established that capacity building factor has the strongest significant effect on ICT integration in business studies in public secondary schools in Abia state. The results from the study also shows that ICT competence and teacher personal characteristics have strong significant effects on ICT integration; while student behavior and ICT infrastructure access have moderate significant effect on ICT integration in business studies in public secondary schools in Abia state.

This paper tried to fill a gap in the body of knowledge with respect to the provision of empirical information on the factors affecting teacher's readiness on ICT integration in Business studies in public secondary schools in Abia state Nigeria as the issue of ICT integration in secondary education is still being explored by various researchers.

Based on the findings so far made on this paper, the following conclusions have been made:

- That collectively, all the five factors affect teacher's readiness (Teachers personal characteristic, ICT competence, Student behavior, ICT infrastructure access and capacity building) on ICT integration in public secondary schools in Abia state, Nigeria. Also, all the five factors on teacher's readiness contribute significantly in

predicting ICT integration in business studies by explaining ICT integration by 51.4%.

- b. That individually, all the five factors on teacher's (Teachers personal characteristic, ICT competence, Student behavior, ICT infrastructure access and capacity building) affect ICT integration in business education in public secondary schools in Abia state Nigeria.
- c. That capacity building made the highest significant effect on ICT integration. The results from the study also showed that ICT competence and personal characteristics have strong significant effect on ICT integration; while student behavior and ICT infrastructure access have moderate significant effect on ICT integration in public secondary schools in Abia state Nigeria.

Recommendations

Based on the result of the study, summary of findings and conclusion, the researchers recommend the following:

1. That for ICTs to be fully integrated into secondary education, adequate preparations should be made by teacher education institutions and programs to incorporate ICTs in their lesson design and delivery.
2. In creating policies to integrate ICTs into secondary education curriculum, Educational planners and policy makers should make effort to ensure that the plans address mechanisms for improving the supply of educational technologies in secondary schools as this will help in facilitating the direct use of ICTs in students' learning activities.
3. Developmental workshops, conferences and symposium should be organized to train secondary school teachers on the use and need of ICTs in learning-teaching process.
4. There should be provision of incentives to motivate secondary school teachers for courseware development.
5. Efforts should be made for the school administrators to be competent and have broad understanding of technology, curricular, administrative, financial and social dimensions of ICT use in education.

References

- Albirini, A. (2006). Teachers' attitudes towards information and communication technologies. *Journal of Computer and Education*, 4, 373-396.
- Aremu, A., & Adediran, E. M. (2011). Teacher readiness to integrate it into teaching and learning process in nigerian secondary schools: a case study. *An International Multidisciplinary Journal, Ethopia*, 4(5), 178-190.
- Azuka, A. R. (2000). Career opportunities in business education in Nigeria. *Business Education Journal*.
- Berner, J. E. (2010). A study of factors that may influence faculty in selected schools of education in the commonwealth of virginia to adopt computers in the classroom. *International Journal of Instruction*, 2(10), 115-130.
- Doshmanziari, E., & Mostafavi, A. (2017). Barriers to the use of educational technology in the learning process of primary school students. *Informational Journal Studies*, 10(2), 44-53.
- Drent, M., & Meelissen, M. (2007). Which factors obstruct or stimulate teacher educators to use ICT innovatively. *Journals of Computer in Education*(6), 801-816.
- Efaw, J. (2005). No teacher left behind: how to teach with technology. *EDUCAUSE*

- QUARTELY, pp. 15-27. Retrieved July 20, 2018, from http://connect_educause.eduLibrary/EDUCAUSE+Quarterly/NoTeacherLeftBehindHowtoT/19946
- Indian Society for Technical Education (ISTE). (2000-2002). Essential conditions for teacher preparation. Retrieved from http://cnets.org/teachers/t_esscond.html
- Kirschner, P., & Woperies, I. G. (2003). Mind tools for techear. *Technology, Pedagogy and Education*, 1(12), 127-149.
- Mikre, F. (2012). The role of information and communication technology in education: review article with emphasis to the computer and internet. *Ethopian Journal of Education and Sciences*, 2(6), 109-126.
- Mojgan, A., Kamaria, A. B., Wong, S. L., Bahaman, A. S., & Foo, S. F. (2009). Factors affecting teachers' \use of information and communication technology. *International Journal of Instruction*, 1(2), 78-102.
- Nino, L. S. (2010, January). Literature review of challenges in business education. *Chronicle of Higher Education*, 80-89.
- Nomuja, J. O. (2013). Current trends in business education in higer institutions. *Journal of Education, Research and Dev*, 300-311.
- Rathod, G., & Jadhav, V. (2015, June). Factors affecting secondary teachers' decisions to integrate information and communication technology (ict) in convent school. *International Research Journal of Interdisciplinary & Multidisciplinry Studies*, 1(5), 26-41.
- Singh, T., & Chan, S. (2014). Tacher readiness on ict integration in teaching-learning: A Malysian Case Study. *International Journal of Asian Social Science*, 7(4), 874-885.
- Thomas, A., & Stratton, G. (2006). What are we doing with ICT in physical education: A National Audit of equipment, use, teacher attitude, support and training. *British Journal of Educational Technology*, 4(37), 617-632.
- Yousef, A. B., & Dahmani, M. (2008). The economics of e-learning: the impact of ict on student performance in higher education: direct effects, indirect effects and organisational change. *Teacher and Teacher Education*, 50-68.
- Yusuf, M. O. (2005). An Investigation into Teachers' Self-efficacy in Implementing Computer Education in Nigerian Secondary Schools. *Meridian: A Middle School Computer Technologies Journal*, 2(8), 4-15.
