HYPOTHETICAL PREDICTION OF ICT USAGE BEHAVIOUR AMONG BUSINESS EDUCATION TEACHERS IN NIGERIAN COLLEGES OF EDUCATION

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ABSTRACT

The purpose of this paper is to propose a hypothetical model for explaining and predicting ICT usage behavior among Business Education teachers in Nigerian colleges of education. The proposed model supposes ICT usage attitudes and ICT usage intentions as independent variables that determine teachers’ ICT usage behavior. To measure the independent variables this study will utilize self-reported opinions of respondents with regard to their attitudes and intentions toward using ICTs in the classroom. The principal limitation of the study is that it is preliminary in nature, emphasizing only on the integration of what extant literature has revealed. Nevertheless, the model proposed in this study is expected to help researchers to statistically explain ICT usage behavior among teachers with consideration to multiple variable factors. The study is expected to particularly unfold important revelations if applied in Nigerian colleges of education, and it will greatly contribute to the body of knowledge in general and immensely be of benefit to teachers all over the world. The study will also play an important role in bridging the gap that exists in ICT research between Nigeria and the rest of the world.

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INTRODUCTION

The impacts of Information Communication Technologies on our ways of lives generally and on education in particular, have become fundamentally revolutionary, (Oloolube, 2006). As ICTs are improving the quality and quantity of teaching and learning, as well as research in teacher education, teachers’ competence is now being connected with how they integrate ICTs in their classroom activities. Hence, for more than two decades, issues that relate to ICT usage behavior among teachers have continued to draw the attention of researchers all over the world. Nevertheless, until recently, in regions of less developed countries (LDCs) such as Africa, the diffusion of ICTs has remained extremely low, (Anandarajan, Igbaria, & Anakwe, 2002; Odedra, Bennett, Goodman, & Lawrie, 1993). This is an indication of critical ICT development gaps (digital divide), between regions of Africa and the rest of the world. And it is a matter of serious concern that despite the evidences that showed annual growth rate of 90% in purchases of microcomputers/ICT tools in the business sectors of the LDC regions (The Fourteen Major Trends, 1997), yet the benefits of effective ICT usage have remained far from being actualized in countries like Nigeria, (Anandarajan et al., 2002; Asogwa & Eze, 2013; Delaviz, Andrade, Pouwelse, & Epema, 2012; Ololube, Egbezor, & Kpolovie, 2008; Ugwuogo, 2013)

Whereas empirical evidence has revealed the importance and need of ICT integration in the Nigerian educational sector, (Oghogho & Ezomo, 2013); it was observed that the failure to use technology by many academics in their teaching and learning functions has become an issue of great concern in Nigeria and for a long time now, Nigeria’s educational system has been lingering in inadequacies that border around teachers’ ICT usage behavior in the classroom (Aduwa-Ogiegbaen & Iyamu, 2005; Asogwa & Eze, 2013; David, 2012; Ololube et al., 2008). Unfortunately, despite the growing number of ICT studies across the globe, indigenous Nigerian ICT studies
have remained scanty and essentially descriptive in nature, (Jegede, Dibu-Ojerinde, & Ilori, 2007; Thorelli, 2008). Yet ICT studies done in one country, may not always apply to all other countries, owing to limitations that relate to population, sampling, and/or designs peculiarities of the research, (Rastogi & Malhotra, 2013). Hence, for Nigeria to be able to make any significant headway in tackling ICT usage problems in education, undertaking indigenous ICT studies that are peculiar to her technological dispositions is fundamental. Besides, as proclaimed in (UNESCO, 2010) different information needs are peculiar to different countries with respect to ICT adoption so that whereas countries in early ICT adoption stages may need to focus on creating an ICT infrastructure for schools to have access to newer technologies, countries in more advanced ICT adoption stages may be needing to focus on utilizing ICTs in the most appropriate ways for intended educational outcomes.

Furthermore, although the Nigerian educational system has witnessed the intervention of organizations (governmental and non-governmental), such as the Nigerian Communication Commission, (NCC) in conjunction with Zinox computers, Educational Trust Fund (ETF), Science and Technology Education at Post-Basic Levels (STEP-B) projects, Digital Bridge Institute, (DBI), and many more others, it is unfortunate to observe that the desired educational expectations of the country are still far from being fulfilled, (N. O. Iloanusi & Osuagwu, 2009; Ogunsola & Aboyade, 2005; UNESCO, 2010). The explanation to this is for researchers to find out, but empirical evidence has shown that it is one thing to provide ICT equipment for the teachers and another thing to have the teachers use them. Hence, literature has established close linkages between the successful adoption of technology in education and teachers’ perceptions, attitudes and intentions toward ICTs, with the claim that the teachers are the ones who eventually determine how these technologies are used in the classroom, (Bullock & Fuchs, 2004; Kersaint, 2003; Marcinkiewicz, 1994; Scheperes & Wetzels, 2007; Teo, 2011). Unfortunately, this same scenario is one of the obvious characteristics of the business education system of Nigeria where obsolete technologies such as the manual typewriters and ink duplicators are still being used in the classroom, (Isiyaku, 2009; Uguwugo, 2013). In this regard, the focal point of this study is to propose a model that will investigate, explain and predict the role of attitude and behavioral intention in influencing ICT usage behavior among teachers, with special focus on business educators in Nigerian colleges of education.

In the late 1970s Information Technology (IT), was the term used for computers and computer peripherals like printers, floppy disks drives, scanners and the early digital cameras; whereas the term Information Communication Technology (ICT), describes technologies of the internet along with computer networks, World Wide Web, e-mail and search engines used in producing and sharing information, (United Nations Educational Scientific and Cultural Organization, 2010). This implies that ICTs can be referred to as those technologies that enable us receive information and communicate or exchange such information with others. Congruently, ICT usage can be defined as the frequency of use (how often) and its volume (how much) with which an individual uses ICTs, Kim (2008). It can also be defined as the extent to which ICTs are used daily and the frequency of such use in proportion to the amount of task performed, using the ICTs, (Igbaria, livari, & Maragahh, 1995).

In this study, ICT usage is referred to as the frequency with which teachers use ICTs in the classroom in relation to the types of jobs they perform with the ICTs and how often they perform the jobs using the ICTs, against the volume of the jobs they perform. In a model conceived by (UNESCO, 2010), two dimensions of ICT integration in education are depicted, namely technology integration and pedagogy integration. The technology dimension represents the systematic acquisition of all the tools that ICT comprise, and the pedagogy dimension represents a continuum of changing teaching practices owing to the adoption of varieties of ICT tools. In addition to this, there is a general consensus that ICT integration in education proceeds progressively in a series of broad stages known as emerging stage, applying stage, infusing stage and transforming stage, (UNESCO, 2010).

**ICT ADOPTION IN NIGERIAN EDUCATION**

Nigeria has identified the potential benefits of utilizing ICTs in its school system as evidenced in its educational reform policies that are aimed at integrating the use of ICTs in the Nigerian school system (Yusuf & Yusuf, 2009). However, in an analysis of the Nigerian national policy for information technology (FRN, 2001) it was noted that the policy was inadequate for positive impact on the Nigerian education system because the policy’s philosophical frame of reference was market driven with little emphasis on the integration of ICT in classroom instruction (Yusuf, 2005). Additionally, the strategies outlined in the document were not followed, (Yusuf, 2005).

Sequel to the above, Nigeria’s Federal Ministry of Education (2004) came up with another document on ICT, which was the Ministerial Initiative on e-Education for Nigerian Education System. Unlike the previous documents, Yusuf (2005) stated that the initiative was drawn based on input from major educational and human development commissions and boards such as (National Universities Commission (NUC), National Colleges of Education Commission (NCCE), National Board for Technical Education (NBTE), Education for All (EFA), and...
Universal Basic Education (UBE). However, according to Yusuf (2005) the document could not be successfully implemented along the line, and since that time, no other national document had been developed on the integration of ICT in Nigerian educational institutions until in the year 2007. Now, it is over a decade since Nigeria began its ICT transformation journey, yet empirical evidence has not shown that the country has gone beyond an infancy stage with regard to ICT adoption and use in its educational sector, (Iloanusi & Osuagwu, 2011).

Congruently, in business education, where individuals are prepared for advancement into the business world to function intelligently as employees or employers and as consumers or producers of goods and services able to cope with challenges and changes; it is only recently that computers are introduced in schools. Hence, they are still used mainly for learning basic ICT skills and identifying ICT components so that teachers are only table to use the computers for their word processing or spreadsheet tasks haphazardly, while their classroom practices are still very much teacher-centered, with minimal ICT oriented instructions. This simply means ICT adoption in the Nigerian business education system is perhaps at the emerging stage still, (Iloanusi & Osuagwu, 2011; UNESCO, 2010). But for an optimal teaching and learning experience, business teachers must shift from the traditional forms of business education and implement ICTs in the way they design, teach, and assess their courses (Renties & Townsend, 2012). However, whereas doing this requires a strong ICT baseline, it is rather unfortunate that business education faculties in Nigeria are lacking the necessary ICT infrastructure, to effectively implement ICT-compliant teaching, (Asogwa & Eze, 2013; Isiyaku, 2009; Ugwuogo, 2013). Unfortunately, very few ICT studies are investigating ICT usage behaviors among teachers in Nigerian educational institutions (Echeng & Usoro, 2014).

Congruently, although business education plays a vital role in national development by providing knowledge and skills to individuals, and enabling them handle sophisticated office technologies and information systems, and at the same time impart the knowledge to others, (Amoor, 2010), until recently, it was not given any priority in the Nigerian educational curricula, (Ekpenyong & Nwabusi, 2003). That notwithstanding, extant literature has shown that one of the most immediately visible trends in business education is that its scope has continually been adjusted to tackle issues of global responsibility and sustainability, with the most common response being the inclusion of new modules at suitable points in the periodic curriculum redesign cycle, (Tilbury & Ryan, 2011). Impliedly, the competences required for teachers in business education in the present age must reflect on the changing technological trends that confront the teachers and the students as well. To this effect, teachers across the globe are faced with the task of ensuring that they effectively use ICTs in executing their classroom functions. But while developed societies have advanced to use of new technologies such as the web 2.0 in their classrooms, the developing countries (including Nigeria) are yet to begin (Isiyaku, 2009; Larkin & Belson, 2005; Ugwuogo, 2013).

In a case study by Mudasiru and Modupe (2011), conducted in University of Ilorin – Nigeria, among 382 student teachers; findings have revealed that teachers’ are not competent for the integration of ICTs in the curriculum of the university. However, although teachers’ attitudes were evaluated in the study, findings did not show significant correlation between teachers’ attitudes toward ICT usage and their lack of ICT competence. Hence, replicating such a study is worthwhile and since the focus of Mudasiru and Modupe (2011), was on student teachers in a single Nigerian university, this study will capture 13 tertiary colleges that serve as training grounds for Nigerian teachers. This will provide for a ground to closely investigate ICT usage behavior among practicing teachers instead of student teachers.

In a pilot study conducted by Oye (2011), in University of Jos, Nigeria; findings revealed that majority of teachers in Nigerian Higher Education Institutions are not quite confident of their intentions to use ICTs in the classroom. However, being a pilot study the work cannot be used to take a general stand on teachers’ intentions to use ICTs in the classrooms of Nigerian HEIs. Hence, this study will investigate the same scenario in 13 HEIs located in 6 Nigerian states.

Ajayi (2008) conducted a study among 6 Colleges of Education in Southwest Nigeria to examine the use of ICTs for teaching in the Colleges. Findings revealed that ICTs were not adequately used for teaching in the Colleges due to epileptic supply of electricity, inadequate ICT facilities and lecturers’ incompetence in the use of ICT facilities. The study employed a descriptive research design. However, Ajayi (2008) and the rest of the previously discussed studies above have left a gap in proposing an integrated theoretical model that investigates several ICT usage variables at a time. Hence, the focal point of this study is to contribute to the role of bridging such gap.

**PROPOSED FRAMEWORK**

This study borrows from the assumption of the Theory of Reasoned Action by (Fishbein, 1979), which says that a person's performance of a specified behavior is determined by his or her behavioral intention to perform the behavior, and behavioral intention is jointly determined by the person's attitude and subjective norm concerning the
behavior in question. The study assumes that teachers’ ICT usage behavior in the classroom is determined by their attitudes and intentions towards the usage of ICTs in their classrooms.

**Attitude towards ICT Usage**

Attitude towards ICT Usage plays important role in computer related behavior, (Tezci, 2011). To a certain degree, attitude is a term used generally to indicate the possibility of adopting certain behavioral predispositions (Bertia, 2010). User’s attitude towards acceptance of technology is important for the successful adoption of such technology (Davis, 1989).

Attitude toward ICT usage refers to how people think and feel towards ICTs; their demeanor and how they react to ICTs and change initiatives that have to do with ICTs, (Wilkinson & Schilt, 2008). Attitude towards ICT usage encompasses confidence, anxiety and enjoyment/liking (Hermans, Tondeur, van Braak, & Valcke, 2008). Attitude towards ICT usage is one of the important factors that explains and predicts teachers’ use of ICTs in the classroom, (Rana, 2013). It relates to the extent to which ICTs are considered to be pleasant, (Venkatesh, Morris, Davis, & Davis, 2003), the extent to which ICTs are considered as good idea, (Venkatesh et al., 2003), the extent to which ICTs are considered appealing, (Teo, 2010) and the extent to which ICTs are considered interesting, (Teo, 2011).

In Davis (1993) findings it was revealed a weak direct influence of attitude on use. However, in a study conducted in Nigeria on the antecedent factors to end-users symbolic acceptance of technology by Arekete, Ifinedo, and Akinnuwesi (2014), findings have revealed that attitude has strong impact on technology use. Similarly, a study in India by (Rana, 2013) has revealed that teachers’ attitudes are among the fundamental factors that influence successful ICT adoption in the classroom. Therefore, this study theorizes hypothesis one as follows:

**HO1: Attitude towards ICT usage has a direct significant effect on ICT Usage.**

**Intention towards ICT Usage**

Pynoo and van Braak (2014) opined that behavioral intention is considered as the core measure for technology acceptance in TAM, TPB and other related intention based models. Impliedly, the extent to which teachers are willing to use or not to use ICTs in the classroom will determine whether they eventually use them or not. However, empirical evidence has shown that people’s computer use can be predicted reasonably well from their intentions (Davis, Bagozzi, & Warshaw, 1989). Accordingly, intention towards ICT usage is commonly defined as the degree of a teacher’s willingness to use technology, (Teo, 2011).

Intention towards ICT usage is also a very important factor that explains and predicts teachers’ use of ICTs in the classroom, (Rana, 2013). It relates to the frequency at which ICTs are expected to be used, (Cheung, Lee, & Chen, 2002), the span of time within which ICTs are expected to be used, (Cheung et al., 2002), the dimensions within which ICTs are expected to be used, (Oye, Iahad, & Rahim, 2012) and the Consistency with which ICTs are expected to be used, (Oye et al., 2012).

In a study on individuals’ intention for using mobile wireless technology, conducted among 286 mobile wireless users in South Korea, Kim (2008) found significant relationship between behavioral intention and actual usage of a smartphone. Findings in Pynoo and van Braak (2014), have also revealed moderate correlations between behavioral intention and usage behavior. Therefore, this study theorizes hypothesis two as follows:

**HO2: Intention towards ICT usage has a direct significant effect on ICT usage**

Furthermore, Fishbein (1979) posited in TRA that attitude determines behavioral intention towards behavioral performance. Findings in Dishaw and Strong (1999) have revealed significant positive relationships between attitude and behavioral intention. Similarly, findings in Cheung et al. (2002) have revealed that attitude has strong influence on behavioral intention. Also, Teo (2011) has found that attitude significantly and positively influence teachers’ behavioral intention to use technology. Alharbi and Drew (2014) have also revealed that (attitude towards technology positively affects behavioral intention.

In a study by (Adewole-Odeshi, 2014) conducted among 387 students from selected universities in Southwest Nigeria on their attitudes towards e learning results have shown significant correlations between attitude and intention to use an e-learning system. In another study conducted by (Teo & Zhou, 2014) among 314 students in China, findings have revealed that attitude towards technology is a strong determinant of intention to use the technology. Therefore, this study theorizes hypothesis three as follows:

**HO3: Attitude towards ICT usage has a direct significant effect on Intention towards ICT usage**

Figure 1 below depicts the theoretical/hypothetical framework of this study
This paper has revealed that when ICTs are appropriately used in education, they will accelerate the actualization of the desired reform in global education. However, ICT usage behavior in Nigerian education has been characterized by issues that relate to teachers’ attitudes and intentions towards ICT usage in the classroom. We have established that on the overall, ICT usage in Nigeria’s educational sector is still in an infancy stage, requiring more efforts from authorities in Nigeria towards investments in ICT research.

But whereas extant literature has revealed that most of the ICT studies conducted in Nigeria have been descriptive in nature, with little or no theoretical outcomes, this study proposes a theoretical model that presents and explains multiple variables simultaneously, as antecedents to ICT usage behavior among business education teachers in Nigerian colleges of education. The study portrays close linkages and affinities between teachers’ attitudes, and intentions to use ICTs in the classroom, based on the Theory of Reasoned Action (TRA) by (Fishbein & Ajzen, 1975). Invariably, extant literature has revealed significant direct effects of attitude and intention on ICT usage behavior, revealing that teachers’ attitudes and intentions towards ICT usage can significantly explain and predict their ICT usage behavior in the classroom. Yet, empirical evidence has shown that business education is still being practiced with crude and traditional technologies in Nigeria, thereby depriving business students of the optimal learning experiences they need for thriving in the chaos of the current technological upheavals. This calls for changing the way teachers in business education design, teach, assess and implement their classroom experiences. Hence, the opinions of the teachers with regard to their attitudes and intentions toward usage of ICTs in the classroom is very important to school authorities, as it will inform them of the type of ICTs that would be pleasing.
and appealing to the teachers. Congruently, such opinions will inform manufacturers of ICTs of the features to incorporate in ICTs at the point and time of production.

As mentioned earlier, the principal limitation of this study is that it is preliminary in nature, focusing only on the integration of what extant literature has revealed. Nevertheless, it is expected that by applying the proposed model, researchers can investigate ICT usage behavior among teachers. The study is expected to particularly unfold important revelations if applied in Nigerian colleges of education, and it will greatly contribute to the body of knowledge in general and immensely be of benefit to teachers all over the world. The study will also serve as a bridge to the gap that exists in ICT research between Nigeria and the rest of the world.

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