INSTITUTIONAL FACTORS AS PREDICTORS OF COLLEGES OF EDUCATION LECTURERS' VERSATILITY LEVEL IN E-LEARNING IN SOUTH-WEST, NIGERIA

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Abstract
The value and relevance of Information and Communication Technology (ICT) to the sustenance and improvement of the field of education cannot be over-emphasized. Related studies pointed out many factors that account for non-use of ICT tools in schools which include government policy, capacity building, e-learning infrastructure. Some of the researchers concentrated on the secondary schools and universities. Other studies were based on foreign countries. However, most of these studies have left out institutional factors in relation to colleges of education where these teachers are produced. This gap in knowledge should not be allowed to continue uninvestigated. This study investigated the institutional factors as predictors of colleges of education lecturers' versatility levels in e-learning. The researchers adopted a descriptive survey method, with sample drawn from 11colleges of education in South-west, Nigeria. Respondents were 1,088 lecturers. The instrument used was questionnaire and was validated with the reliability index of 0.93 using Cronbach Alpha. Regression analysis was used to test research questions one and two. Findings showed that there was significant relationship among COE lecturers' versatility level in e-learning, and institutional factors. ANOVA value of ($F_{5, 1082}$) =59.39; p < 0.00) for versatility level; and that capacity building value has the strongest positive effect on versatility level.

Keywords: Institutional Factor, College of Education, Composite, Linear, e-Learning and Versatility level.

Introduction

ICT has been acknowledged to be one of the most critical tools underpinning social and economic development in the 21st century (Traynor, 2003). Its global importance has led to numerous countries transforming their ICT sectors to lend support to other critical sectors in terms of efficiency, productivity and transparency, thus leading to job creation, better governance and overall social and economic development. Nigeria has embarked upon this path and in 2011 created the Ministry of Communication Technology to ensure better coordination of ICT activities and development in Nigeria. This National ICT Policy lays out the inputs required to strengthen all productive sectors and ultimately transform Nigeria into a knowledge based and globally competitive country in alignment with the National Vision 20:20 objectives (NITEF, 2010). For the successful implementation of ICT policies, programmes and instructional use of ICT in Nigerian schools especially in colleges of education, one cannot think of ICT integration and use in instructional delivery without determining whether the teachers/lecturers are acquainted with the operational skills of the e-learning components.

Institutional factors such as government policy, capacity building, e-learning infrastructure, institutional strategies and so on are the predictor variables to colleges of education lecturers' versatility levels in e-learning. Institutional factors help to improve teachers' existing attributes. According to Vanetta & Fordham (2004), teacher's time committed to teaching and amount of technology training are reliable factors of technology use in classroom. They asserted that teacher trainers and administrators should not only provide extensive training on educational technology but should also facilitate a contribution to

teaching improvement. Norris, Poirot & Soloway (2003) also pointed out to the importance of access to technology. Therefore, an understanding of institutional characteristics that influence teachers' adoption and integration of ICT into teaching is relevant.

On the school level, factors such as support, funding, training and facilities influence teachers' adoption and integration of technologies into their classrooms. Teachers' professional development is a key factor to successful integration of computers into classroom teaching. ICT related training programs develop teachers' competences in computer use (Bauer & Kenton,2005; Franklin, 2007; Wozney, Venkatesh, and Abrami (2006), influencing teachers' attitudes towards computers (Keengwe & Onchwari, 2008) and assisting teachers reorganize the task of technology and how new technology tools are significant in student learning (Plair, 2008).Though infrastructure support is imperative, school technology leadership is a stronger predictor of teachers' use of computer technology in teaching (Anderson & Dexter, 2005). Yee (2000) believes that a leader who implements technology plans and shares a common vision with the teachers stimulate them to use technology in their lessons. Smarkola (2007) suggests that for effective utilization of ICT by teachers, there is the need for a strong leadership to drive a well-designed technology plans in schools (Lai & Pratt, 2004).

Becta (2008) report on the effect of ICT on teaching in basic schools in United Kingdom also stressed on significance of good leadership (Lai & Pratt, 2004). In addition, Becta (2008) identified five factors that were essential to be present in schools if ICT was to be utilized properly (Lai & Pratt, 2004). These factors were ICT resources, ICT teaching, ICT leadership, general teaching and general school leadership. Although ICT opportunities are typically provided by the classroom teachers, the quality of leadership and management of ICT in a school is crucial to the provision of good ICT learning opportunities. As the quality of ICT leadership improves, so does the percentage factors influencing teachers' adoption and integration of ICT of schools providing good quality ICT learning opportunities (Lai & Pratt, 2004). Wong & Li (2008) conducted a study on factors that influenced transformational integration of ICT in eight schools in Hong Kong and Singapore.

The study revealed that leadership promotion of collaboration and experimentation and teachers' dedication to student-centred learning influenced effective ICT transformation. In a quantitative study conducted by Ng (2008) on aspects of transformational leadership with 80 Singaporean secondary teachers, he found that a transformational leadership with qualities of identifying and articulating a vision, promoting acceptance of group goals, providing individualized support, offering intellectual stimulation, providing an appropriate model, creating high performance expectations, and strengthening school culture could influence the integration of ICT. Similarly, Afshari et al. (2009) distributed questionnaires to 30 heads of second-cycle institutions in Tehran. Their results revealed a relationship between the head's level of computer competence and transformational leadership practices.

The study concluded that transformational leadership could help improve the integration of ICT into teaching and learning processes. Further, Yuen, Law and Chan (2003) conducted case study of 18 schools in Hong Kong. They found that in catalytic integration model schools, the school principal is the key change agent, exhibiting visionary leadership, staff development and involvement while in cultural innovation model schools, multiple leadership is exhibited where the school principal is not necessarily involved in ICT leadership, and teachers are free to implement new ideas in supportive and enhancing culture. Also, studies have shown that various levels of leadership such as principal, administrative leadership and technology leadership influence successful use of ICT in schools (Anderson & Dexter, 2005). This aspect of leadership will help the principal to share tasks with subordinates while focusing on the adoption and integration of technology in the school. Institutions exemplified by executive involvement and decision-making, strengthened by ICT plan, effectively adopt ICT integration curriculum.

Teachers' professional development is a key factor to successful integration of computers into classroom teaching. Several studies have revealed that whether beginner or experienced, ICT related training programs develop teachers' competences in computer use (Bauer & Kenton,2005; Franklin, 2007; Wozney et al., 2006), influence teachers' attitudes towards computers (Hewand Brush, 2007; Keeng We & Onchwari, 2008) as well as assisting teachers reorganize the task of technology and how new technology tools are significant in student learning (Plair, 2008). Muller (2008) related technology training to

successful integration of technology in the classroom. In a study of 400 pre-tertiary teachers, they showed that professional development and the continuing support of good practice are among the greatest determinants of successful ICT integration. Sandholtz & Reilly (2004) claimed that teachers' technology skills are strong determinant of ICT integration, but they are not conditions for effective use of technology in the classroom.

They argue that training programs that concentrate on ICT pedagogical training instead of technical issues and effective technical support, help teachers apply technologies in teaching and learning. Research studies revealed that quality professional training program helps teachers implement technology and transform teaching practices (Brinkerhoff, 2006; Diehl, 2005). Lawless and Pellegrino (2007) claim that if training program is of high quality, the period for training lasts longer, new technologies for teaching and learning are offered, educators are eagerly involved in important context activities, teamwork among colleagues is improved and has clear vision for students' attainment. Teachers may adopt and integrate ICT into their teaching when training programs concentrate on subject matter, values and the technology.

Information and Communication Technologies (ICTs) offer innumerable benefits in enriching the quality and quantity of learning in tertiary institutions. Despite the prevalent nature of ICT in virtually every aspect of human endeavours, they have not been widely integrated into the teaching and learning process in schools. Their integration will not only revolutionize teaching in tertiary institutions, but also will engender the development of students' innate scientific inquiry mind and their critical thinking abilities. New lecturers must be inducted to develop the needed skills in the use of ICTs and to develop positive attitude towards their use for teaching and research (Yusuf, & Onasanya, 2004). Despite ICT recognized potentials, their integration in teaching learning process will be dependent on teachers' knowledge, competence and willingness to integrate ICT in their teaching. Empirical findings have indicated that even teachers who have competence in the use of ICT do not integrate them in their teaching.

E-learning is wide and encompassing to the extent that it's hard to articulate a brief definition that defines the term concept. There may be other slightly different definitions, but Adeoti and Adebayo (2014) defines e-learning as the use of any electronic technology to help in the acquisition and development of knowledge and understanding to demonstrably and positively influence behaviors. When teaching and learning in both classroom and out of classroom are electronically supported and facilitated, it is called e-learning. It is essentially technology based. Uhaegbu (2001) opined that it involves the use of computer and its devices to transfer and inculcate knowledge and skills.

So far, it has not been well ascertained if considerable numbers of the lecturers are competent to carry on with this great task of integrating ICT into instructional delivery as there are few records. The trend of record of low use of ICT in teaching and learning processes by teachers is not limited to secondary schools alone but rampart among lecturers of higher institutions of learning. This has been the subject of major concern to educational planners, administrators, stakeholders in education and teachers themselves. In support of this, Yusuf and Balogun (2011) revealed that there was wide gap between policy development and implementation in the Nigeria schools about computer education. Researchers such as Osakwe (2010) worked on the influence of Information and Communication Technology on Teacher Education and professional development in Delta State and revealed that there was no significant relationship between ICT and lesson presentation which could be due to lack of information literacy in teacher trainers. Also, Nwana (2012) studied the challenges in the application of e-learning by secondary school teachers in Anambra State and concluded that inadequacy of e-learning infrastructure posed a major challenge for teachers' non-use of e-learning in classroom and that the available ones are not utilized because the teachers lack the knowledge and skills of computer application.

Previous research in related studies pointed out many factors that account for non-use of ICT tools in schools. Some of these researchers concentrated on the secondary schools and universities (Osakwe, 2010; Nwana, 2012; Afshari, Bakar, Luan, Samah, & Fooi, 2009). Other studies (Horton, 2005; Franklin, 2007; Dalsgaard, 2008) were based on foreign countries. However, most of these studies have left out institutional factors in relation to colleges of education where these teachers are produced especially south-west, Nigeria. This might be due to the piecemeal approach to the research into academic achievement in the colleges of education in the country. This gap in knowledge should not be allowed to continue

uninvestigated if the country is to achieve the educational objectives of producing qualitative graduates to power the Nigerian economy.

The quality of output of any operation is a function of the input that is processed. Consequently, the quality of output of primary and secondary teachers depends, to a large extent, on the quality of teacher educators in colleges of education. The gap identified by the researcher is that none of earlier researchers traced the teachers' poor use of ICT to institutional factors. To fill these identified gaps, the study examined institutional factors as predictors to colleges of education lecturers' versatility levels in e-learning in south-west, Nigeria. Two research questions guided the study.

Research questions
1. What is composite contribution of institutional factors to the prediction of lecturers' versatility level on e-learning in colleges of education in South-west, Nigeria?
2. What is the linear contribution of institutional factors to the prediction of lecturers' versatility level on e-learning in colleges of education in South-west, Nigeria?

Methodology

The study specifically focused on the institutional factors as predictor of colleges of education lecturers' versatility level in e-learning in South-west, Nigeria. Hence, a descriptive survey research design was adopted. The study was carried out in all government owned Colleges of Education in the South-west, Nigeria. There are seven State Colleges of Education and four Federal Colleges of Education making up eleven government-owned Colleges of Education that were examined in this study. Lecturers in all government owned Colleges of Education in Southwest States of Nigeria were selected for the study. Simple sampling technique was used to select available academic staff from each of the colleges of education in South-west, Nigeria for the study. Sample was drawn from 11 colleges of education in south-west, Nigeria. Respondents were 1,088 lecturers, (660 males and 420 females), out of total of 4,850 lecturers working in the sampled colleges as at the time of the study. A structured questionnaire titled "Questionnaire on institutional factors as predictors of colleges of education lecturers' versatility levels" was used to elicit information from the samples selected. The questionnaires were administered to members of academic staff in each of the sampled Colleges of Education. The data collected were analyzed using inferential statistics (multiple regression and ANOVA to answer the research questions

Results
What is the composite contribution of institutional factors to the prediction of lecturers' versatility level on e-learning in colleges of education in South-west, Nigeria?

To test for composite contribution among predictors variables of capacity building, E-learning conception, E-learning facilities availability, institutional strategies and government policy on criterion variable versatility level as indicated in research question one, the multiple regression analysis was carried out using the enter method. The results derived from the analysis are shown in Tables 1 and 2.

Table 1:
Adjusted R square value for the model summary on versatility.

Model	R	R Square	Adjusted R Square	Std. error of the estimate
1	.469	.22	.21	.52

a. Predictors: (constant). Capacity Building Government Policy, Institutional Strategies, Facilities availabilities and Conception.

From the result in Table 1, the Adjusted R Square (.21) has poor fit. This revealed that the constructed multiple regression model of the independent variables (capacity building government policy, facilities availability, institutional strategies and conception) account for .21% variance in the dependent variable (versatility level). The results on the analysis of variance (ANOVA) for the model are as shown in Table 2.

Table 2:
ANOVA for independent variables on Versatility Level.

Model	Sum of Squares	df	Mean square	F	Sig.
Regression	80.93	5	16.19	59.39	.00[b]
Residual	294.88	1082	.273		
Total	375.805	1087			

a.   Dependent variable: Versatility

b.   Predictors: (constant), capacity building, government policy, infrastructure availability, institutional strategies and conception.

The results of the analysis of variance (ANOVA) which revealed that F (df 5, 1082 = 59.39, P < 0.00, indicated a statistically significant relationship (stronger than 0.05) among the independent variables (capacity, policy, infrastructure, institutional strategies and conception) and dependent variable (versatility). Based on this significant relationship, the coefficient for the Beta weight for standard deviation unit of change in the dependent variable for each standard deviation unit of change in the dependent variable was calculated.

What is the linear contribution of institutional factors to prediction of lecturers' versatility levels in e-learning in colleges of education southwest, Nigeria?

To test for linear contribution among predictors variables of capacity building, E-learning conception, E-learning facilities availability, institutional strategies and government policy on criterion variable versatility level as indicated in research question two. Table 3 showed the Coefficient of independent variables on dependent variable e-learning versatility levels.

Table 3:
Coefficient of independent variables on Versatility

S/N	Model	Unstandardized coefficients B	Std. error	Beta	Standardized T	Coefficients Sig.
1.	Constant	-.858	.18	-.003	-4.69	00
	Conception	-.005	.05	.20	-.10	.92
	Govt. Policy	.249	.041	.159	6.13	.000
	Infrastructural Availability	.263	.061	.127	4.32	.00
	Institutional strategies	.153	.045	.106	3.38	.001
	Capacity building	.249	.038	.210	6.55	.00

a.   Dependent variable: versatility

The standardized coefficients in Table 3 revealed that (a) the independent variables, capacity building value has the strongest positive effect on versatility because the Beta (B=.21, .00) shows statistically significant relationship because the significant value was less than 0.05 alpha value.

Discussion of the findings

The composite contribution of institutional variables among COE lecturers' conception, e-learning infrastructure, institutional strategies and capacity building in e-learning in versatility levels was examined by research question 1. The result of the regression analysis established a significant relationship among e-learning versatility level (dependent variable) and their conception on e-learning, e-learning government

policy, availability of e-learning infrastructure, institutional strategies and capacity building (independent variables). Therefore, its shows that institutional factors influence teachers' adoption and integration of ICT into teaching. And that Teachers' professional development is a key factor to successful integration of computers into classroom teaching. Several studies have revealed that whether beginner or experienced, ICT related training programs develop teachers' competences in computer use (Bauer & Kenton,2005; Franklin, 2007; Wozney et al., 2006), influence teachers' attitudes towards computers (Hewand Brush, 2007; Keengwe and Onchwari, 2008) as well as assisting teachers reorganize the task of technology and how new technology tools are significant in student learning (Plair, 2008).

These findings on composite and linear contributions of institutional factors on colleges of education lecturers agreed with findings of Yee (2008) who believed that a leader who implements technology plans and shares a common vision with the teachers stimulate them to use technology in their lessons. Schaffer and Richardson (2004) suggest that for effective utilization of ICT by teachers, there is the need for a strong leadership to drive a well-designed technology plans in schools and bring about capacity building for the lecturers. The lack of computer training could lead to cyber phobia that according to Agbatogun (2010) is likely to limit their use of ICT. Smarkola (2007) points out that teacher training in ICT are vital for future conception and uses of computers for teaching and learning process. However, for proper ICT integration in education, the quality of training needs to be considered.

Conclusion

The building of the physical infrastructure as well as the knowledge infrastructure base such as teacher training, teaching materials and internet facilities are necessary before the full benefits of the e-learning educational investments can be realized. The development of these infrastructures is noted to be at low realm in almost all colleges of education in the country. The findings of this study revealed that the colleges of education are experiencing critical challenges such as poor infrastructure, a lack of teachers' exposure to training and retraining on ICT usage

Recommendations

Based on the findings and conclusion of this study, the following recommendations were made;

1. Government should organize more seminars, workshops and conferences in and outside the country for lecturers on e-learning for effective instruction in colleges of education.
2. College management should allocate both financial and material resources in such a way that will promote professional development of lecturers thereby providing sustainable overall institutional development of technical skills and versatility needed for e-learning.

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