Academic Staff Challenges to Effective Utilization of Information and Communication Technology (ICT) in Teaching/Learning of Agricultural Education

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Abstract

ICT has offered great potential, especially as an aid to every aspect of human endeavor. Inspite of the roles played by ICT especially in teaching/learning, there are still some impediments to its effective utilization by the academic staff. This work examined the academic staff challenges to effective utilization of ICT in teaching and learning of Agricultural Education in Federal Universities in South East geopolitical zones of Nigeria. Forty respondents were purposively sampling from universities and used for the study. Three research questions guided the study. A 35-item researchers' developed questionnaire was used for data collection. Instrument validation covered face and content validity by two experts in educational management and agricultural education. While reliability index values of 0.86, 0.85 and 0.92 were obtained using Cronbach alpha. Means and grand means were used to analyze the research questions. The findings revealed a low extent utilization and inadequate ICT tool literacy among the academic staff in the federal universities in south east geo-political zone of Nigeria. It is therefore recommended that the academic staff avail themselves the opportunity of various conferences and workshops to acquire the needed skills for effective utilization of ICT tools.

Keywords: *ICT utilization, Academic staff, teaching, learning, and Agricultural education.*

1. Introduction

Agriculture has long been accepted as means of ensuring food security as well as empowering citizens of a nation economically. Early 60s in Nigeria experienced economic boom through agricultural produce which had been the major sources of Nigerian economy until this recent era of oil boom. The fact that Nigeria is presently monoeconomic nation has continued to be a source of worry, as it appears to be over-stretched for the maintenance of every sector of the nation. This gave rise to the need of repositioning agriculture for food security and national economic sustainable development, one of the strategies for the repositioning which led to the introduction of agricultural education as a programme of study in Nigerian tertiary institutions. Inability of teachers to utilize ICT to enhance effective teaching and learning has been the major problem of attaining the goals of agricultural education in Nigeria. It is in recognition of this that the urgent need to integrate ICT into university education arises. Inspite of the roles played by ICT in teaching/learning, there are still some impediments to its effective utilization by the academic staff.

2. Academic Staff and ICT Utilization

Hornby (2000) defined utilization as the process of practical and effective usage of something. ICT learning and utilization is one of the concern of educational issues around the world and for a number of years, there has been evidence in the training and development area as noted by Edwards et al, (2006). This development can only be achieved if the use of computer (ICT) is effectively utilized. According to (Wikipedia, 2011) is used to describe how resources are deployed and allocated which is comprised of a planned effort for the future and the actual effort in the past. ICT utilization therefore allows learners to displace the teacher at the center of learning experience and take responsibility for their learning to be learner-centered. This places a vital role on the teacher as the utilization depends on the teachers.

These teachers are referred to as academic staff at the tertiary level. These academic staff therefore has been described by Modebelu and Onyali, (2011) as group of individuals that are employed in the universities and other tertiary institution to train and groom students through higher level manpower training needs. They are generally categorized into male and female. They are professional whose duties are to teach, instruct, train, educate and facilitate students' knowledge, learning and performance. As experts and professionals, these staff is expected to be versatile, creative, resourceful and innovative. But Inspite of the characteristics of these staff, it has been noted that the academic staff has not been able to produce or turn out quality graduates as much as expected of them due to their inability to utilize new technologies in teaching and up-dating of lesson resources. Modebelu et al (2013) rightly pointed out therefore that the academic staff is expected to utilize their expertise online training to ensure the achievement of quality in their products that will in turn help to achieve the set goals of Agricultural education as enshrined in the national policy on education, (2004). No doubt, effective utilization of the ICT tools in the tertiary institutions by the academic staff especially in teaching and learning of Agricultural education will help to produce efficient and effective graduates, to solve the problem of hunger.

3. Challenges to Effective Utilization of ICT Tools

Empirical studies have indicated that even teachers who have competence in the use of ICT do not integrate them in their teaching. Problems of quality and lack of resources are compounded by the new realities faced by higher education institutions battle to cope with every increasing student's numbers. Not only have higher education systems expanded worldwide, the nature of the institution within these systems has also been shifting, through a process of differentiation (World Bank, 2000 as cited by Ololube, Ubogu & Ossai, 2007). According to Pelgrum (2001), obstacles for ICT implementation include the following: Insufficient number of computers, teachers' lack of ICT knowledge/skills, difficult to integrate ICT to instruction, scheduling computer time, insufficient peripherals, not enough copies of software, insufficient teacher time, not enough simultaneous access, not enough supervision staff and lack of technical assistance. Similarly, Azuh (2013) noted the barriers also to include limited equipment, inadequate skills, minimal support, time constraints and the teacher's own lack of interest or knowledge about computer. Kwacha (2007) also noted that the most common problems associated with the effective implementation of ICT are lack of qualified ICT personnel, cost of equipment, management attitudes, inconsistent electric power supply, inadequate telephone lines, particularly in rural areas and non-inclusion of ICT programmes in teacher's training curricula and at the basic levels of education.

Also, these problems stated can affect or hinder the effective use of ICT by undergraduates if they are not properly implemented. For undergraduates in Nigerian universities to be abreast with the present information age, these facilities need to be put in place to enhance the teaching-learning process.

4. Prospects of ICT Use in Universities

Despite the fact that Nigeria and in fact most African countries came late into the ICT world, the adoption of the Nigerian policy for information technology in 2001 is the right step in ICT application in every sector of the nation's life and in particular in education. The policy is designed to ensure that Nigeria as a nation recognizes the strategic importance of ICT for national development. Successful application in every sector can only be assured through adequate coverage of needed areas. Identified gaps can be filled through the environment of important stakeholders/actors such as the teacher and managers of education.

Specifically, Kwacha (2007) indicated the following are some required urgent steps towards the adoption and use of ICTs in education.

- The adoption of ICT international standards and its inclusion in the Nigeria curriculum and in particular in the teacher's education curriculum. Continuous and provide training of teachers on computers and ICT skill acquisition.
- Development and training of ICT experts, specifically for instruction design and development, who will work in partnership with educators and teachers.
- Funding: Government at all levels should make ICT a matter of priority; improve the funds specifically needed for the training of teachers/students in computer education who will be equipped with ICT knowledge and skills.
- There is need for the Nigerian government to address seriously the issues of the erratic electricity power supply while on the other hand schools wishing to adopt the integration of ICT in their teaching – learning process should as a matter of urgency procure a generating set, that can supplement Power Holding Company (PHCN) for supply of power.

5. Research Questions

The following research questions guided the study.

1. To what extent does the academic staff utilize the available ICT tools for effective teaching and learning of Agricultural Education?
2. What are the academic staff challenges to effective utilization of the ICT tools to enhance effective teaching and learning of Agricultural Education?
3. In what ways can the challenges to effective ICT tools utilization be redressed for effective teaching and learning of Agricultural Education?

6. Methodology

The study adopted a descriptive survey design meant to assess opinion responses on the present situations. Two federal universities out of five federal universities in the south east geo-political zone were purposively sampled because they offer agricultural education. A total of 40 academic staff consisting of (17male and 23 female), were selected from the two federal universities. Three research questions guided the study. Researchers' self designed questionnaire titled Academic Staff ICT Utilization for Effective Teaching and Learning Questionnaire (ASIUETLQ) was used for data collection. The 35- item-questionnaire was built on a 4-point scale. The instrument was validated by two experts in Educational Administration and Agricultural Education on face and content validity. A pilot test was conducted using 10 academic staff from 2 state universities in the same geopolitical zone in Nigeria. A Cronbach alpha reliability values of 0.86, 0.85, and 0.92 were obtain for the three clusters. All the 40 copies of the IUETLQ administered to 40 respondents were returned through the assistance of a trained Research Assistants and it was used for the analysis. Means and grand means were used to answer the research questions. Items scoring 2.50 and above were accepted as positive responses to the items while items scoring below 2.50 were

regarded as negative responses. ANOVA statistical tool was used to test the hypothesis at 0.05 levels of significance

7. Results

Table1: Mean responses of academic staff on the extent of ICT tools utilization for effective teaching and learning.

S/N	Extent Of Utilization	Male response	Female Response	Remark
1	Internet	3.35	3.13	HEU
2	Teleconferencing	1.41	1.61	LEU
3	Skype	1.71	1.87	LEU
4	Power point presentation	1.41	1.69	LEU
5	Computer	3.00	3.22	HEU
6	Video recorder	1.76	1.69	LEU
7	Interactive white board	2.47	2.69	LEU
8	Television set	1.94	2.00	LEU
9	Public address system	2.65	2.52	HEU
10	Overhead projector	2.59	2.65	HEU
	Grand Mean	**2.23**	**2.31**	

The result in table 1 above revealed that items 2, 3, 4,6, 7 and 8 have their mean responses below 2.50 indicating low extent utilization of the ICT tools enumerated. While on the other hand, only items 1, 5, 9 and 10 have their mean responses above 2.50. The table also revealed grand means of 2.23 and 2.31 for male and female academic staff respectively. Both grand means score below the 2.50 indicating academic staff general agreement that the items enumerated are utilized in their institutions to a low extent.

Table2: Mean responses of academic staff on challenges to effective utilization of ICT tools for effective teaching and learning of agricultural education.

S/N	Academic staff challenges to effective utilization of ICT tools	Male response	Female Response	Decision
1	Inadequate ICT tool literacy	3.24	3.09	Agree
2	Inadequate time for training in ICT.	3.12	2.61	Agree
3	ICT tools are not compactable with the course contents	2.12	2.04	Disagree
4	Inadequate technical support.	3.06	2.69	Agree
5	Resistance to change / negative attitude	2.29	2.43	Disagree
6	Age barriers	1.88	2.00	Disagree
7	Epileptic power supply	2.76	3.30	Agree
8	Poor funding to procure ICT	2.88	2.96	Agree
9	Lack of adequate awareness	2.65	2.74	Agree
10	High cost of ICT tools.	2.88	2.83	Agree
11	Lack of interest	2.18	2.13	Disagree
12	Inadequate access to ICT tools.	2.88	2.87	Agree
13	Inadequate ICT up-dating Opportunities.	3.12	3.00	Agree
	Grand Mean	**2.69**	**2.67**	

Result in table 2 reveals grand means of 2.69 and 2.67 of male and female academic staff respectively. Both grand means scored above 2.50 (weighted mean) indicating academic staff

general agreements that 9 out of the 13 enumerated items are the impeding factors to effective utilization of ICT tools. Four Items (3,5,6, and 11) does not serve as an impediment since they scored below 2.50,therefore the 9 items (1,2,4,7,8,9,10,12 and 13) are the academic staff challenges to ICT tools utilization of for effective teaching and learning of agricultural education. Item analysis revealed that academic staff inadequate ICT tool literacy is the most serious factor that challenged ICT utilization in the federal universities in south east geo political zone of Nigeria.

Table3: Mean ratings of the Academic Staff on the ways of redressing the challenges of ICT tools utilization for effective teaching and learning of Agricultural Education.

S/N	Ways of redressing the challenges include:	Academic staff response	Remark
1	Allocating enough time for training in ICT.	3.45	Agree
2	Provision of adequate hardware.	3.52	Agree
3	Adequate organization of ICT resources.	3.30	Agree
4	Government should provide more funds for ICT.	3.37	Agree
5	Inclusion of ICT education into school curriculum.	3.52	Agree
6	Establishment of effective ICT system to carter for large audience	3.50	Agree
7	Creating of proper awareness on the role of ICT.	3.55	Agree
8	Training of staff on ICT utilization through in-service training.	3.57	Agree
9	Provision of adequate ICT Centre in schools for free training.	3.45	Agree
10	Encouraging online training	3.37	Agree
11	Administration should ensure that every staff owns a laptop and the accessories.	3.47	Agree
12	Regular training for the staff.	3.67	Agree
Grand Mean		**3.48**	

Table 3 reveals grand mean of 3.48 on the ways of redressing the challenges of the Academic Staff on ICT tools utilization for effective teaching and learning. Since the grand means scored above 2.50 and item by item analysis scored also above 2.50. This indicated that the academic staff generally agreed that all the 12 items serve as ways of redressing the challenges of the Academic Staff on ICT tools utilization for effective teaching and learning of Agricultural education in Nigeria federal Universities.

8. Discussion

The findings of this study were organized according to the research questions and they are presented below.

Table 1 addresses the extent of utilization of the ICT tools for quality teaching and learning. The findings has shown that ICT tools that are expected to promote quality teaching and learning of agricultural education in Universities are utilized only to a low extent by the academic staff in south east geo political zone of Nigeria. This confirms the report of Effiong (2005) and Jegede and Owolabi (2008) that ICT materials such as computers, radio set, Skype, printers, scanners, video recorder, teleconferencing and books on ICT are not available and are not adequately being utilized in Nigerian secondary schools for computer education. Again, the findings agree with that of Seiden (2000) and Uhaegbu (2001) for Nigeria which revealed a low level of usage of ICT equipment and facilities in secondary schools. However, as a comparison, the findings are in contrast with that of Becker (2000) that found US primary and secondary schools use computers in all subjects, particularly in the teaching of languages and mathematics.

The findings from research question two on the challenges to effective utilization of ICT in

teaching and learning revealed the major challenges to include the following: Inadequate ICT tool literacy, Inadequate time for training in ICT, ICT tools are not compactable with the course contents, Inadequate technical support, Resistance to change / negative attitude, Age barriers, Epileptic power supply, Poor funding to procure ICT, Lack of adequate awareness, High cost of ICT tools., Lack of interest, Inadequate access to ICT tools, High cost of ICT tools, Lack of interest, Inadequate access to ICT tools. This is in accordance with the ideas of Pelgrum (2001), obstacles for ICT implementation include the following: Insufficient number of computers, teachers' lack of ICT knowledge/skills, difficult to integrate ICT to instruction, scheduling computer time, insufficient teacher time, not enough simultaneous access, not enough supervision staff and lack of technical assistance. Similarly, it agree with the findings of Azuh (2013) that noted the barriers to include limited equipment, inadequate skills, minimal support, time constraints and the teacher's own lack of interest or knowledge about computer. Kwacha (2007) also noted that the most common problems associated with the effective implementation of ICT are lack of qualified ICT personnel; cost of equipment, management attitudes, inconsistent electric power supply etc.

Result in table3 indicates that the respondents generally agreed that Allocating enough time for training in ICT, Provision of adequate hardware Adequate organization of ICT resources, Government should provide more funds for ICT, Inclusion of ICT education into school curriculum, Establishment of effective ICT system to carter for large audience, Creating of proper awareness on the role of ICT, Training of staff on ICT utilization through in-service training, Provision of adequate ICT Centre in schools for free training, Encouraging online training, Regular training for the staff. The findings agree with Sundarajan (2005), Evoh (2007), and Nwana (2008a, 2008b, 2009a, 2009b) that teachers should have adequate training for computer education. Also, that necessary facilities and ICT tools should be provided for effective curriculum implementation in secondary school.

9. Conclusion

The study x-rayed that the Utilization of ICT in teaching and learning of Agricultural Education by the Academic Staff has not been fully effective in Federal Universities in South East geo-political zone of Nigeria due to Inadequate ICT tool literacy, inadequate ICT tools, Inadequate time for training in ICT, ICT tools are not compactable with the course contents, Inadequate technical support, Resistance to change / negative attitude among other challenges. The study also revealed twelve ways of redressing the challenges-Regular training for the staff, Allocating enough time for training in ICT, Provision of adequate hardware, Adequate organization of ICT resources, Government should provide more fund for ICT, Inclusion of ICT education into school curriculum, Establishment of effective ICT system to carter for large audience, Creating of proper awareness on the role of ICT, Training of staff on ICT utilization through in-service training, Provision of adequate ICT Centre in schools for free training, Encouraging online training, Administration ensuring that every staff owns a laptop and the accessories. It is therefore recommended that the academic staff avail themselves the opportunity of various conferences and workshops to acquire the needed skills for effective utilization of ICT tools.

10. Recommendations

Based on the findings, the following recommendations were made:

Academic staff of universities should be encouraged to acquire the needed skills for the effective utilization of ICT facilities in our universities. They should be massively upgraded as ameans of assuring effective teaching and learning

Government should encourage ICT tools utilization by ensuring adequate provision of ICT tools and technologies necessary for promoting ICT tools effective utilization

Academic staff of these higher insitutions should be assisted to have access to these

technologies and oppurtunities to acquire the needed skills through sponsorship of their attendance to workshops and conferences.

Government, university management and philanthropists should contribute towards adequate provision of ICT tools in universities.

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