INFORMATION AND COMMUNICATION TECHNOLOGY (ICT) RE-TRAINING NEEDS OF TECHNICAL COLLEGE TEACHERS FOR SUSTAINABLE DEVELOPMENT IN ENUGU STATE

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Abstract

This study was conducted to determine ICT re-training needs of technical college teachers for sustainable development in Enugu State. Two research question and two hypotheses guided the study. The study adopted descriptive survey design. The population of the study is 57 respondents, comprising 39 male and 18 female teachers from the 5 technical colleges in Udi Education Zone of Enugu State. There was no sampling because of the manageable size of the population. Questionnaire was the instrument for data collection. The data collected from the instrument were validated by three experts and a reliability coefficient value of 0.86 was established using Cronbach's Alpha. Mean was used to analyze the research questions and standard deviation to determine the closeness or otherwise the variance from the mean. T-test statistics was used to test the hypotheses at 0.05 level of significance. The study revealed among others that ICTs contributes immeasurably and are needed for capacity development of technical college teachers for sustainable development in Enugu State by exposing teachers to wide range of knowledge, reduces study fatigue and amount of written words. The study therefore recommended that ICTs development programmes should be organized for re-training of technical college teachers for sustainable development in Enugu State; Government should make available adequate ICT facilities that will encourage learning activities by teachers.

Keywords: Information Communication, Technology Technical Needs, Teachers, Development, Sustainable

Introduction.

Technology is becoming increasingly adaptive and individualized, with technological innovations providing access to personalized information and tools. This technological development has led to changes in work and changes in the organization of work with the required competencies changing. In the words of Oluka and Onyebuenyi (2017), innovations in technology had contributed immensely to the development of man and few can imagine living without

technology; Technology as a key component of human life, shapes the future and makes it compatible with nature through the discovery of more efficient methods and processes for the simplification of living. Gaining importance in recent time are critical thinking, generalist (broad) and information and communication technology (ICT) competencies enabling expert works especially in class room by impacting the students of today at an alarmingly rapid pace and for capacity building of teachers.

ICT according to Iheke (2010) is the technology that supports activities involving creation, storage, manipulation and communication of information together with their related methods management and application. Akachukwu (2004) perceive ICT as an umbrella term that includes any communication device or application encompassing radio, television, cellular phones, computer and network hard-wares and software, satellite system and applications associated with them such as video conferencing and distance learning.

Yusuf (2005) stated that the field of education has been affected by ICTs, which have undoubtedly affected teaching, learning, and research works. This was supported by Al-Ansari (2006) who noted that great deal of research has proven the benefits of ICTs to the quality of education. The contributions of ICT in rapid development of education (both the teachers and students) can not be over emphasized in contemporary world. Iheke (2010) noted that with ICT, teachers easily explain complex instructions and ensure students comprehension. In the same vein, Iheanyichukwu (2001) submit that ICT has helped to develop and promote programmes to eradicate illiteracy. Gusea, Olarionoye and Garba (2005) concluded that ICT has the potential of transforming the nature of education, the where and how of learning and the interactive roles of teacher and students in education process.

The teaching and learning process has gone beyond traditional classroom setting. The scenario of the future demands that teachers act as learning facilitators to students on an individual basis in a wider network. Teachers must be prepared to break out of the traditional teaching methods and locate learning resources from different avenues that include both online and conventional methods. The activities selected should promote personal development as well as opportunities to engage in collaborative teamwork. The future learning management systems should allow students and teachers to proactively identify assessment opportunities against a range of criteria, capabilities and competencies. These assessment opportunities should be analyzed to

develop remedial programmes and enable the teachers to improve their strategies for sustainability especially at technical colleges.

Technical colleges according to Okoro (2008) are the principal vocational institutions in Nigeria designed to give full craft man training intended to prepare the individual to acquire practical skills, knowledge and aptitude required of technicians at sub-professional level. In this context, the role of the teachers at technical colleges encompasses the need to understand and use technology for producing the best results in learning. The transformation of classroom technology from hardware, software and connections into tools for teaching and learning depends on knowledgeable and enthusiastic teachers who are motivated and prepared to put technology to work on behalf of their students. This being said, though many teachers have the functional know-how of technology, they do not possess the necessary knowledge to recognize the complete potential for technology usage in teaching and learning, nor the skills to exploit technology for maximum benefit especially in technical colleges. According to Hepp, Hinostroza, Laval and Rehbein (2004) ICTs have been utilized in education ever since their inception, but they have not always been massively present. The use of ICTs in interacting with others in the learning community is undoubtedly important not only for constantly upgrading their knowledge base, but also for ensuring that they are able to train themselves in the manner required by those who will train existing as well as future generations of learners. Such an involvement will also ensure that technical college teachers feel confident to usher the pedagogy of change that emphasizes on a student centric learning process wherein the student apart from being the focal point of the learning process also takes the onus for lifelong learning. In this scenario, the role played by technology becomes that of the binding force; one that bridges the connection between people and gives them a space to come together and build as well as sustain a learning environment through productive activities and interaction

Most teachers want to learn to use educational technology effectively, but they lack the time, access, and support necessary to do so (Guhlin, 2006). The teachers must progress from a phase of just knowing how to use a computer to a phase where they become fearless in their use of technology and integrate it effectively in their learning strategies, powered with the knowledge of the many opportunities that technology offers. Therefore, capacity development for teachers becomes the key issue in using technology to improve the quality of learning in the classroom. In

view of Fatemi (2009), lack of capacity development for technology use is one of the most serious obstacles to fully integrating technology into the curriculum.

To prepare the teachers for effective technology use, a well-designed professional development program is mandatory. The traditional forms of individual workshops and one-time training sessions are no longer adequate. What is required are sustained, ongoing and improved professional development programs which will provide the technical college teachers with support and make technology an integral part of their professional lives especially in re-molding teachers thinking from traditional teaching practices to student centered pedagogy and developing skills that involve the effective usage of ICT tools. However, the various ICT initiatives in education do not comprehensively address the preparedness of teachers for 21st century education and ICT integration. On these notes, the researchers seek to determine the retraining needs of teachers (both male and female) for implementation and success of the ICT in education programs and as well for sustainability development of technical college teachers in Enugu State.

Statement of the Problem

Classroom learning is competing with learning through the internet, using web 2.0 technologies, connecting with classmates, peers and experts using Internet messaging and using other popular online interactive tools. Learning is not dependent on information access as guided by the traditional teacher only, but is being constantly either reinforced or negated by many other sources of information available due to technology. Most technical college teachers in Enugu State lack the capacity to make use of ICTs for knowledge-based personality development (capacity building) and for effective lesson delivery. This has caused high text books dependency rate, reduced competition with other professional bodies and limited knowledge of most technical college teachers and as well encouraged the use of traditional class room method of teaching which has affected the adoption and utilization of ICTs in teaching technical subjects effective learning at an alarming pace. The study therefore seeks to determine the ICT re-training needs of technical college teachers for sustainable development in Enugu State.

Purpose of the Study

The major purpose of the study is to determine ICT re-training needs of technical college teachers for sustainable development in Enugu State. Specifically, the study sought to determine;

1. The need of ICTs for the capacity development of technical college teachers for sustainable development in Enugu State.

2. The need of ICTs for effective lesson delivery by technical college teachers for sustainable development in Enugu State.

Research questions

The following research questions guided the study:-

1. What are the needs of ICTs for the capacity development of technical college teachers for sustainable development in Enugu State?

2. What are the needs of ICTs for effective lesson delivery by technical college teachers for sustainable development in Enugu State?

Hypotheses

The following hypotheses formulated and tested at 0.05 level of significance guided the study;

$H0_1$: A significant difference does not exist in the mean ratings between male and female teachers on the needs of ICTs for the capacity development of technical college teachers for sustainable development in Enugu State

$H0_2$: A significant difference does not exist in the mean ratings between male and female teachers on the needs of ICTs for effective lesson delivery by technical college teachers for sustainable development in Enugu State.

Research Method

The research employed a descriptive survey research design with a population of 57 respondents (39 male 18 female teachers) from the 5 technical colleges in Udi educational zone of Enugu State. There was no sampling because of the manageable size of the population. The instrument for data collection was a structured questionnaire dully validated by experts. The instrument was divided into 2 sections viz; sections A & B in accordance with the research questions that guided the study with response options of Strongly Agree (SA), Agree (A), Disagree (D) and Strongly Disagree (SD) with numerical values of 4, 3, 2 & 1 respectively. The reliability of the instrument was established using Cronbach's alpha which gave a high co-efficient result of 0.86. Cronbach's alpha was used because the instrument doesn't have yes or no responses (Uzoagulu, 2011).

Mean with standard deviation were used to answer the research questions while upper and lower limits of the mean were used as basis for decision, thus;

Strongly Agree (SA	3.50	-	4.00
Agree (A)	2.50	-	3.49
Disagree (D)	1.49	-	2.49
Strongly Disagree (SD)	1.00	-	1.49

The null hypotheses were tested using t-test at .05 level of significance. The null hypotheses were rejected when t-cal was greater than t-critical otherwise it was not rejected.

Results

The results are presented according to the research questions used for the study.

Research Question 1.

What are the needs of ICTs for the capacity development of technical college teachers for sustainable development in Enugu State?

Table 1

Mean with standard deviation of the needs of ICTs for the capacity development of technical college teachers for sustainable development in Enugu State.

S/N	Needs of ICTs for the capacity development of technical college teachers f or sustainable development	Male N = 39		Female N = 18		Overall N = 57		Decision
		X_1	SD_1	X_2	SD_2	X	SD	
1	Source of written research articles	3.40	0.63	3.22	0.68	3.31	0.66	Agree
2	Medium of discussion with professional bodies	3.28	0.72	3.52	0.54	3.40	0.63	Agree
3	Motivates teachers	3.14	0.88	3.45	0.57	3.30	0.71	Agree
4	Unlimited resources access	3.40	0.66	3.25	0.75	3.33	0.73	Agree
5	Reduces study fatigue	3.85	0.94	3.32	0.71	3.09	0.71	Agree
6	Lessens the burden of load (text & exercise book)	3.60	0.49	3.22	0.71	3.43	0.83	Agree
7	It increases mastery of skill	3.14	0.90	3.35	0.82	3.25	0.66	Agree
8	Exposes teachers to wide range of knowledge	3.58	0.84	3.45	0.57	3.52	0.86	S. Agree
9	Source of video teaching aids	3.35	0.65	3.24	0.67	3.30	0.66	Agree
Cluster Mean		**3.30**	**0.75**	**3.36**	**0.67**	**3.33**	**0.72**	Agree

SD: Standard Deviation; A: Agree; X: Mean; S. Agree: Strongly Agree.

Data presented in Table 1 shows that the mean responses of male and female technical college teachers on item no. 8 was strongly agree while the items numbered 1 to 7 & 9 were agreed as needs of ICTs for the capacity development of technical college teachers for sustainable development in Enugu State with aggregate score ranges of 3.09 to 3.52. The Table shows that role of ICTs can not be under estimated in sustainable development of technical college teachers in Enugu State as it proffers unlimited resources access, serves as a medium of discussion with professional bodies and the likes. The grand mean value of 3.33 also attested to that while the pull standard deviation of 0.72 indicates homogeneity of opinions of respondents.

Hypotheses

$H0_1$: A significant difference does not exist in the mean ratings between male and female technical college teachers on the needs of ICTs for the capacity development of technical college teachers for sustainable development in Enugu State.

Table 2

t-test analysis between male and female technical college teachers on the needs of ICTs for the capacity development of technical college teachers for sustainable development in Enugu State.

Respondents	No	_X	SD	Df	Level of signi.	T-Tab	T.Cal	decision
Male	39	3.30	0.75	55	.05	2.021	-0.303	NS
Female	18	3.36	0.67					
	57							

NS: Not Significant. SD: standard deviation. DF: Degree of freedom

The t-test result above shows that t-calculated value is less than t-tabulated value at its degree of freedom. Hence, the null hypothesis is not rejected. This simply means that a significant difference does not exist in the mean ratings between male and female technical college teachers on the needs of ICTs for the capacity development of technical college teachers for sustainable development in Enugu State.

Research Question 2.

What are the needs of ICTs for effective lesson delivery by technical college teachers for sustainable development in Enugu State?

Table 3

Mean with standard deviation of roles of ICTs for effective lesson delivery by technical college teachers for sustainable development in Enugu State.

S/N	ICTs helps technical college teachers in effective lesson delivery by;	Male N = 39		Female N = 18		Overall N = 57		Decision
		X_1	SD_1	X_2	SD_2	X	SD	
10	Reducing amount of written words	3.40	0.63	3.22	0.68	3.31	0.66	Agree
11	Motivating students	3.57	0.50	3.33	0.89	3.45	0.70	Agree
12	Saving time	3.28	0.72	3.52	0.54	3.40	0.63	Agree
13	Easy content delivery	3.14	0.88	3.45	0.57	3.30	0.73	Agree
14	Notes are made self explanatory	3.40	0.66	3.25	0.75	3.33	0.71	Agree
15	Convenient time lesson delivery	2.85	0.94	3.32	0.71	3.09	0.83	Agree
16	Teachers presence may not be needed	3.60	0.49	3.32	0.71	3.43	0.66	Agree
17	It saves energy	3.14	0.90	3.35	0.82	3.25	0.86	Agree
18	Easy evaluation of learning outcomes	3.32	0.92	3.35	0.68	3.33	0.72	Agree
19	Maintaining students interest	3.29	0.82	3.52	0.54	3.41	0.68	Agree
20	Stress free	3.28	0.72	3.23	0.81	3.26	0.77	Agree
21	Notes can be saved for subsequent delivery	3.48	0.50	3.22	0.72	3.35	0.61	Agree
Cluster mean		**3.28**	**0.76**	**3.35**	**0.76**	**3.32**	**0.76**	**Agree**

SD: Standard Deviation; A: Agree; X: Mean.

Data presented in Table 3 shows that that the mean responses of male and female technical college teachers on all the items numbered 10 to 21 were agreed as need of ICTs for effective lesson delivery by technical college teachers for sustainable development in Enugu State. The aggregate score ranges from 3.09 to 3.45. The Table shows that ICTs plays predominant role in effective

lesson delivery in technical colleges in Enugu State viz: the use ICTs reduces amount of written words, it is Stress free, e.t.c. The grand mean value of 3.32 also attested to that with the pull standard deviation of 0.72 indicating slim disparity of opinions of respondents.

Hypotheses

$H0_2$: A significant difference does not exist in the mean ratings between male and female technical college teachers on the needs of ICTs for effective lesson delivery by technical college teachers for sustainable development in Enugu State.

Table 4

T-test analysis between male and female technical college teachers on the needs of ICTs for effective lesson delivery by technical college teachers for sustainable development in Enugu State.

Respondents	No	_X	SD	Df	Level of signi.	T-Tab	T.Cal	decision
Male	39	3.28	0.76	55	.05	2.021	-0.323	NS
Female	18	3.35	0.76					
Total	57							

NS: Not Significant. SD: standard deviation. DF: Degree of freedom

The t-test result above shows that t-calculated is less than t-tabulated value. Hence, the null hypothesis is not rejected. This implies that a significant difference does not exist in the mean ratings between male and female technical college teachers on the needs of ICTs for effective lesson delivery by technical college teachers for sustainable development in Enugu State.

Discussion

The findings of the study in research question 1 revealed that ICTs contributes immeasurably and thus needed for capacity development of technical college for sustainability in Enugu State among others by exposing teachers to wide range of knowledge, reduces study fatigue and being a source of written research articles. The t-test result of t-calculated (-0.303) less than t-tabulated (2.021) shows that the null hypothesis is not rejected. This implies that a significant difference does not exist in the mean ratings between male and female technical college teachers on the needs of ICTs in the capacity development of technical college teachers for sustainable development in Enugu State.. This in consonance with the findings of Iheke (2010) which stated

that with ICTs, teachers can easily explain complex instructions and ensure students comprehension.

The study further revealed in research question 2 that ICTs plays important role in effective lesson delivery by technical college teachers for sustainable development in Enugu State. The use of ICTs reduces amount of written words, it saves lesson delivery time, it is Stress free and many more roles. Technical college teachers need to be retrained for sustainable capacity development in Enugu State. The t-test result of t-cal (-0.323) less than t-tabulated (2.021) showing that the null hypothesis is not rejected. This implies that a significant difference does not exist in the mean ratings between male and female technical college teachers on the needs of ICTs for effective lesson delivery by technical college teachers for sustainable development in Enugu State.This is in concordance with the findings of Etesike (2006) which stated that ICT provide a wide range of aids to the teacher in the course of carrying out his/her professional duties: viz: Storage of lesson plans and students lecture handouts and access professional development and training.

Conclusion

Based on the findings of this study, ICTs plays important role and needed for capacity development of teachers in technical colleges in Enugu State. Both male and female respondents agreed that through ICT, study fatigue is reduced, teachers are exposed to wide range of knowledge, the burden of load (text & exercise book) are made less and the likes. These will stimulate teachers study and teaching interest, and as well encourage the adoption and utilization of ICTs in technical colleges in Enugu State.

The study further noted that both male and female respondents accorded that ICTs plays important role in effective lesson delivery by technical college teachers for sustainable development in Enugu State. This is evident as the use of ICTs reduces amount of written words, it saves lesson delivery time, and it is stress free and many more roles. It is therefore very necessary to organize ICTs retraining and professional development programmes for technical college teachers for sustainable capacity development in Enugu State.

Recommendations

The following recommendations were made in view of the findings of the study:

1) ICTs development programmes should be organized for re-training of technical college teachers in Enugu State.
2) Adoption and utilization of ICTs in teaching and learning should be made compulsory for technical college teachers.
3) Possession of ICTs skills should be made a basic requirement for employment of technical college teacher by school administrators.
4) Government should make available adequate ICT facilities that will encourage learning activities by teachers.

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