Development of Appropriate E-teaching Contents for Capacity Building of Technical Education Lecturers of Colleges of Education in Lagos State

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Abstract

Nigerian government has made a quite number of efforts to make Nigerian educational systems one of the best in the world. Some of the efforts made by government include provision of e-teaching resources, digital classrooms and laboratories and centers for effective e-teaching and networking of Nigerian universities. However, effort is less in the area of capacity building of personnel such as lecturers to effectively utilize resources provided for e-teaching in schools and colleges. Based on this reason, the researchers now carried out the study to develop appropriate e-teaching contents for capacity building of technical education lecturers of colleges of education in Lagos State. Three research questions guided the study and three null hypotheses formulated were tested at 0.05 level of significance. It is a survey research design. The population for the study was 201 subjects. The sample for the study was 201 subjects. These were purposively sampled 77 information technology specialists, 56 ICT trainers in registered industries and all the 68 lecturers of computer science and information technology in the universities in Lagos state. A structured questionnaire was used for data collection. The instrument was validated by three experts and Cronbach alpha reliability method was adopted to determine the internal consistency of the questionnaire items while 0.86 was obtained. Out of two hundred and one copies of the questionnaire administered on respondents with the help of three research assistants, only 187 copies were duly retrieved which represents 93.03 percent return rate. The data collected were analyzed using factor analysis and mean while analysis of variance was used to test the null hypotheses. The findings reveal that 22 e-teaching competencies were appropriate for capacity building of technical education lecturers, 44 instructional strategies for implementing e-teaching contents for capacity building of technical education lecturers of colleges of education while 33 training facilities and procedures that could be utilized by trainers for building the capacity of technical education lecturers of colleges of education in e-teaching were also found out. Recommendations include that technical education lecturers should be trained using the developed e-teaching contents

Keywords: *E-Teaching, Capacity Building, Technical Education, Factor Analysis, Competencies*

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1. Introduction

Teacher education surpasses other educational programmes run by various tertiary institutions in Nigeria. Teacher education programmes are obtainable in colleges of education and universities. They are designed and integrated to programmes of tertiary institutions in order to produce quality teachers for the implementation of various subjects in secondary schools across the country. Teachers produced by colleges of education are expected to maintain strong foundation for the preparation of future career of students.

Colleges of Education (COE) are special tertiary institutions established in order to provide teacher education programmes to interested individuals in Nigerian society. According to Ellah (2007), COE are tertiary educational institutions that prepare intermediate level teachers for a minimum of three years to make them qualify to teach their respective subjects. They are under the control of the National Commissions for Colleges of Education (NCCE) which uses the minimum standard to monitor the implementation of programmes of the colleges. These colleges according to Bakare (2015), run various technical education programmes such as automobile technology, technical drawing, woodwork technology, metal work technology, building technology and electrical/electronic technology. Academic staff found in the implementation of these technical education programmes are called lecturers. Bakare (2014) defined lecturers as academic staff within the programme with minimum qualification of first degree not below second class honours lower division. Bakare (2013) stated that colleges of Education (COE) in Nigeria are established by government to produce qualified teachers for secondary schools in the country. These colleges are teachers training institutions which have been taken leadership in graduating teachers with Nigerian Certificate in Education (NCE) in various areas educational programmes. The graduates of colleges of education teach foundation subjects in primary and upper basic schools where interest of the pupils is stimulated for future careers.

Teacher education is the policy and procedure designed to equip prospective teachers with relevant knowledge, attitude and skills they required to effectively carry out their tasks in the classrooms, laboratories, workshops, school and wider community. The current trend of globalization requires that teacher education institutions should be equipped to produce teachers with skills and competencies to develop learners as critical citizens in a digital world. Bakare (2015) stated that teacher education institutions in Nigeria need lecturers to effectively implement teacher education programmes that will develop high quality teachers with the experience and determination to deliver high quality teaching and learning in a sustainable and inspiring manner supported by innovative research and technology.

Apart from developing the critical competencies and knowledge, 21st century lecturers are expected to uphold high standards, lead by example, integrity, responsibility, be ethical in behaviour and actions and actively valuing diversity. Teachers everywhere in the world have been acknowledged as molders of human resources required for social, political and economic development. Colleges of education should, in addition to academic and professional skills, inculcate workplace skills such as creativity; problem solving; collaborative skills and higher order thinking skills, in order to increase the students' flexibility and job mobility. This will make them acceptable to the present and envisaged changes. This cannot be achieved if adequate attention is not paid to the issues of quality teaching and instructional delivery in colleges of education where teacher education is being obtained. Appropriate contents in e-teaching could be developed to build the capacity of technical education lecturers of colleges of education for quality teaching and effective implementation of teacher education programmes. Bakare (2014) defined content as what the teacher and the students pay attention to when they are teaching and learning. Kapoma and Namusokwe (2011) described content as a list of subjects, topics, skills, themes, concepts or works to be covered by teacher and his

students. Appropriate contents in e-teaching therefore are skills, themes, concepts or competencies for building the capacity of lecturers in applying e-teaching facilities for the implementation of technical education courses.

Capacity building according to Olaitan, Alaribe and Nwobu (2009) is the effort geared towards improving the level of knowledge, skills and attitudes possessed by an individual for proficiency in a given task or job. Miller, Bakare and Ikatule (2010) described capacity building as the process of developing and strengthening the skills, instincts, abilities, processes and resources that organizations and communities need to survive, adapt, and thrive in the fast-changing world. Capacity building therefore refers to the set of activities directed towards improving competencies and capacities of technical education lecturers of colleges of education in using e-teaching facilities for effective instructional delivery.

E-teaching is a 21st instructional platform or concept, which involves teachers managing a convergence of digital information from a wide range of sources and devices when presenting, discussing and reflecting upon a concept with a class group. Asogwa, Abu, and Olaitan (2012) explained that e- teaching involves harnessing the potential of digital technology in presenting a concept, placing the concept in various contexts, creating links with existing knowledge and leading discussion that probe students understanding of the concept and its context. E-teaching process and application include web-based teaching, computer-based teaching, video conferencing and digital collaboration. Asogwa, Abu, and Olaitan (2012) stated that e-teaching also incorporates all educational activities carried out by a teacher(s) online or offline via networked or standalone computers and other electronic devices to enhance teaching to students.

E-teaching differs from conventional approach of teaching. In e-teaching, electronic devices are left to extending the reach information from individual to entire groups either large or small. For example, computers, electronic white boards among others are essential tools in transition of e-teaching. These devices are effective media for the lecturer presenting information to the whole class. Glouver and Miller (2002) stated that the important feature of e-teaching is its similarity to the multi-media, sensory and faceted styles which makes it a multi-literacy teaching and learning environment standard. It makes teaching available everywhere and every time. E-teaching makes teaching cheaper and authenticated. McCormick and Scrimshaw (2001) stated that e-teaching is modifiable, enhanceable and can be in embedded resources such as e-text books. It enables a teacher to reach students in different schools at their locations in his teaching and practice. E-teaching reduces delivery cycle for lecturers and lowers expenses incurred at each period of their service delivery. Most of the lecturers in colleges of education in Lagos State cannot operate e-teaching facilities such as computer for typing and editing of materials, uploading materials into internet and video conferencing. They only manage to use projector teaching their students. Asogwa (2011) pointed out that lecturers in various institutions were not as skilled and thorough in the understanding operation and application of ICT packages as they were supposed to be. Need assessment study revealed that many lecturers of technical education in colleges of education are still not good at booting their laptops, composing and sending e-mails, accessing mails, attaching files and other peripheral issues. Building the capacity of lecturers with appropriate e-teaching contents will enable them to repeat a lesson to different groups of students at different times and locations. The major purpose of the study was to develop appropriate e-teaching contents for capacity building of technical education lecturers of colleges of education in Lagos State. Specifically, the study sought to determine:

1. Appropriate competencies in e-teaching for capacity building of technical education lecturer
2. Instructional strategies for implementing e-teaching contents for capacity building of technical education lecturers of colleges of education

3. Training facilities and procedures that could be utilized by trainers for building the capacity of technical education lecturers of colleges of education in e-teaching

The following research questions were posed:

1. What are the competencies in e-teaching appropriate for capacity building of technical education lecturers?
2. What are the instructional strategies for implementing e-teaching contents for capacity building of technical education lecturers of colleges of education?
3. What are the training facilities and procedures that could be utilized by trainers for building the capacity of technical education lecturers of colleges of education in e-teaching?

2. Hypotheses

The following null hypotheses were tested at 0.05 level of significance:

H0₁: There is no significant difference in the mean responses of lecturers of computer science, information technology specialists in the registered industries and ICT trainers on the appropriate competencies in e-teaching for capacity building of technical education lecturer

H0₂: There is no significant difference in the mean responses of lecturers of computer science, information technology specialists in the registered industries and ICT trainers on the instructional strategies for implementing e-teaching contents for capacity building of technical education lecturers of colleges of education

H0₃: There is no significant difference in the mean responses of lecturers of computer science, information technology specialists in the registered industries and ICT trainers on the training facilities and procedures that could be utilized by trainers for building the capacity of technical education lecturers of colleges of education in e-teaching

3. Method

The study adopted a descriptive research design. A descriptive research design, in the opinion of Ali (2006) is a descriptive study which uses sample of an investigation to document, describe and explain what is in existent or nonexistent on the present status of phenomena being investigated. In survey study, views and facts are collected through questionnaire, interviews among others, analyzed and used for answering research questions. The survey research design was appropriate for this study because it aimed at developing appropriate e-teaching contents for capacity building of technical education lecturers of colleges of education in Lagos State.

The study was conducted in Lagos State of Nigeria. The population for the study was 201 which comprised lecturers of information technology/computer science in both state and federal universities, information technology specialists in the registered industries and ICT trainers. The sample for the study was 201 respondents. These were purposively sampled 77 information technology specialists, 56 ICT trainers in registered industries, and all the 68 lecturers of computer science and information technology in the universities in the study area.

A structured questionnaire titled: E-teaching capacity building Questionnaire (ETCBQ) was used for data collection and was on 5-point Likert scale. The structured questionnaire had 92 items developed for collecting data in accordance with the research questions. The instrument was in three sections A-C. A centered on appropriate competencies in e-teaching for capacity building of technical education lecturers, B dealt with instructional strategies for implementing e-teaching contents for capacity building of

technical education lecturers of colleges of education while C centered on appropriate Training facilities and procedures that could be utilized by trainers for building the capacity of technical education lecturers of colleges of education in e-teaching. The instrument was face validated by three experts. These were experts from Department of Science and Industrial Technology Education, University of Lagos, Akoka. The internal consistency reliability coefficient of 0.86 was obtained for ETCBQ using Cronbach alpha technique. Out of two hundred and one copies of the questionnaire administered to the respondents with the help of three research assistants, only 187 copies were duly retrieved which represent 93.03 percent return rate.

Data collected were analyzed using factor analysis and mean for answering the research questions. For selecting the appropriate competencies in e-teaching for capacity building of technical education lecturers, 0.50 as factor loading was utilized. Any competency with factor loading of 0.50 and above was required and any competency with factor loading less than 0.50 was not required. Also, any item with mean of 3.50 was regarded as required or appropriate while any one with mean below 3.50 was regarded as not required or not appropriate. Analysis of variance (ANOVA) was employed for testing all the null hypotheses at 0.05 and relevant degrees of freedom. The null hypothesis of no significant difference was accepted for any item whose P- value was greater than the 0.05, but it was rejected for any item whose P-value was less than 0.05.

4. Results

Table 1. Outcome of Factor Analysis for answering Research Question One and Analysis of Variance for Testing Hypothesis One

S/N	Competencies in e-teaching	Factor Loading at 0.50	P-values	Remark
	Identify various types of smart phones that can aid teaching and learning			Appropriate NS
1	Create a cell phone or mobile device policy for classroom	0.90	0.09	Appropriate NS
2	Prepare lesson plan using ipad and cell phones	0.52	0.81	Appropriate NS
3	Use modern mobile phones to access technology web based contents	0.79	0.59	Appropriate NS
4	Create media rich deliverable for the teachers and students as well as global audience	0.58	0.69	Appropriate NS
5	Apply ipods to store and retrieve technical information	0.60	0.08	Appropriate NS
6	Use mobile phones to provide technical education materials to students	0.76	0.87	Appropriate NS
7	Download various kinds of technical education related materials through mobiles	0.62	0.69	Appropriate NS
8	Apply cell phone to access online public access catalogue and share knowledge	0.59	0.21	Appropriate NS
9	Employ mobiles for sharing technical education information resources through Infrared, Bluetooth and WiFi	0.68	0.33	Appropriate NS
10	Share with students' movies, audio files and other learning materials relating to technical courses through their mobile phones	0.65	0.73	Appropriate NS
11	Teach the prepared lesson using mobiles	0.66	0.12	Appropriate NS
12	Used cell phone for recording and playing multimedia technical education contents	0.59	0.52	Appropriate NS

13	Apply cell phones with cameras for documenting visual materials and collecting scientific data	0.70	0.55	Appropriate	NS
14	Use twiddeo to upload video made on mobile phone to twitter for the purpose of learning	0.74	0.82	Appropriate	NS
15	Photo blogging using telephones for effective teaching and learning of technical education courses	0.63	0.52	Appropriate	NS
17	Make slideshows for mobile phones	0.50	0.55	Appropriate	NS
18	Apply various types of information and communication technologies for teaching technical courses	0.58	0.24	Appropriate	NS
19	Use information and communication technologies to plan instruction	0.62	0.67	Appropriate	NS
20	Set up projector to deliver power point	0.65	0.54	Appropriate	NS
21	Upload prepared lesson on to the internet	0.56	0.61	Appropriate	NS
22	Shut down the systems used for instructional delivery correctly	0.60	0.58	Appropriate	NS

The data in Table 1 revealed that factor loading of the appropriate competencies in e-teaching ranged from 0.50 to 0.90. This indicated that all the 22 competencies are appropriate for building the capacity of technical education lecturer in colleges of education. The table also indicated that each item had its P-value greater than 0.05. This showed that there was no significant difference in the mean responses of lecturers of computer science, information technology specialists in the registered industries and ICT trainers on the appropriate competencies in e-teaching for capacity building of technical education lecturer. Therefore, the hypothesis of no significant difference was upheld for the 22 competencies.

Table 2. Mean Responses of Lecturers, ICT Trainers and Specialists on the Instructional Strategies for implementing E-teaching Contents for Capacity Building of Technical Education Lecturers of Colleges of Education

S/N	Instructional Strategies	$\bar{X}$	S.D	P-values	Remarks	
1	Using of power point and projector for training academic staff on e-teaching	3.70	0.84	0.88	**Appropriate**	**NS**
2	Learning by doing strategy	3.67	0.88	0.57	Appropriate	NS
3	Using compact disc and cassettes in presentation	3.83	0.77	0.65	Appropriate	NS
4	Audio visual materials/object	3.62	0.85	0.08	Appropriate	NS
5	Using Films and videos in delivering lectures	3.91	0.81	0.57	Appropriate	NS
6	Workshops on e-teaching programme	4.10	0.79	0.69	Appropriate	NS
7	Group dynamic	3.84	0.76	0.21	Appropriate	NS
8	Dualised training	3.50	0.79	0.33	Appropriate	NS
9	Using internet as a means of instruction delivery	3.82	0.74	0.73	Appropriate	NS
10	Interactive lecture	3.63	0.80	0.12	Appropriate	NS
11	Using practice teaching	3.62	0.80	0.52	Appropriate	NS
12	Prepare and deliver skills to be taught in slides	3.51	0.84	0.55	Appropriate	NS
13	Deliver lectures inform of film show to trainees	3.81	0.75	0.82	Appropriate	NS
14	Simulation	3.84	0.79	0.52	Appropriate	NS
15	Using tape recorders in instructing skills to trainees	4.13	0.77	0.49	Appropriate	NS

16	Using as many as possible flow charts when instructing trainees on e-teaching	3.52	0.84	0.55	Appropriate	NS
17	Using different types of film shows for instruction delivery	3.62	0.84	0.24	Appropriate	NS
18	Using well configured ICT systems for instruction	3.62	0.83	0.67	Appropriate	NS
19	Using scraps of different types of computers and other e-teaching facilities for training	3.52	0.84	0.54	Appropriate	NS
20	Small hands-on group training	3.93	0.80	0.54	Appropriate	NS
21	Large group training	3.51	0.87	0.65	Appropriate	NS
22	Conversation with questions posed to elicit thoughtful responses from learners	4.20	0.79	0.08	Appropriate	NS
23	Verbal instructions during capacity building	4.28	0.80	0.57	Appropriate	NS
24	Make use of photo sequences	3.78	0.82	0.65	Appropriate	NS
25	Using diagrams of well setup ICT network for training	3.50	0.82	0.08	Appropriate	NS
26	Film viewing	3.76	0.79	0.51	Appropriate	NS
27	Dual training	3.74	0.76	0.69	Appropriate	NS
28	Group dynamic	3.71	1.02	0.21	Appropriate	NS
29	Distance learning	3.83	0.76	0.33	Appropriate	NS
30	Self paced learning	3.61	0.84	0.70	Appropriate	NS
31	Action plan preparation and presentations	3.81	0.96	0.14	Appropriate	NS
32	Symposium	3.83	0.84	0.54	Appropriate	NS
33	Individual and small group work and presentations	4.04	1.06	0.09	Appropriate	NS
34	Experience sharing	3.52	0.99	0.08	Appropriate	NS
35	Story analysis	3.62	0.80	0.16	Appropriate	NS
36	Brainstorming	3.60	0.80	0.69	Appropriate	NS
37	Seminar	3.68	0.85	0.21	Appropriate	NS
38	Group Exercises	3.76	0.75	0.33	Appropriate	NS
39	Webinar	3.91	0.86	0.70	Appropriate	NS
40	Cooperative learning	3.50	0.96	0.14	Appropriate	NS
41	Learning mode	3.72	0.87	0.54	Appropriate	NS
42	Meta-learning	3.92	0.80	0.09	Appropriate	NS
42	Apply virtue laboratory strategy for teaching academic staff of colleges of education	3.99	0.91	0.08	Appropriate	NS
44	Apply authentic learning mode for teaching some contents in courses	3.93	0.92	0.16	Appropriate	NS

Keys: *X = Mean of Respondents, SD = Standard Deviation, NS = Not significant, N = Number of the Respondents*

The data presented in Table 2 no research question two reveal 44 instructional strategies which their mean values ranged from 3.50 to 4.20. Each of their means is above the cutoff of 3.50 indicating that all instructional strategies could be used for implementing the e-teaching capacity building programme. The standard deviation values for the 60 instructional strategies ranged from 0.74 to 1.06 and were less than 1.96, that is 95% confidence limit. This showed that the respondents were not far from one another in their responses and that their responses were not far from the mean.

The table also indicated that each item had its P-value greater than 0.05. This showed that there was no significant difference in the mean responses of lecturers of computer science, information technology specialists in the registered industries and ICT trainers on the instructional strategies for implementing e-teaching contents for   capacity building of technical education lecturers of colleges of education

Table 3. Mean Responses of Lecturers, ICT Trainers and Specialists on the Training Facilities and Procedures that could be utilized by Trainers for Building the Capacity of Technical Education Lecturers of Colleges of Education in E-teaching

S/N	Training Facilities	$\overline{X}$	S.D	P-values	Remarks	
1	Magic board plus temporary makers	3.74	0.76	0.11	**Appropriate**	**NS**
2	Starboards for displaying instruction	3.54	0.72	0.66	Appropriate	NS
3	Projectors with white screen	3.83	0.79	0.88	Appropriate	NS
4	Laptops with relevant features	3.71	0.69	0.57	Appropriate	NS
5	Technical textbooks on e-teaching	3.93	0.78	0.65	Appropriate	NS
6	Lecture hall for the training programme	3.51	0.66	0.08	Appropriate	NS
7	Public address system	3.79	0.75	0.57	Appropriate	NS
8	Table and chairs	3.91	0.69	0.69	Appropriate	NS
9	Writing pads and pens	3.61	0.70	0.21	Appropriate	NS
10	Hard disks	3.80	0.67	0.33	Appropriate	NS
11	Internet service	3.53	0.74	0.73	Appropriate	NS
12	Assorted smart phones	3.50	0.73	0.12	Appropriate	NS
13	Posters on e-teaching facilities	3.96	0.73	0.52	Appropriate	NS
14	Instructional manuals on e-teaching	3.73	0.64	0.55	Appropriate	NS
15	Ipad technologies	3.91	0.76	0.82	Appropriate	NS
16	Relevant handout	3.74	0.74	0.52	Appropriate	NS
17	Electric power system	3.81	0.68	0.49	Appropriate	NS
18	Hand bills and tracts on e-teaching	3.62	0.82	0.55	Appropriate	NS
19	Flat screen televisions	3.61	0.76	0.24	Appropriate	NS
20	Personal digital assistance	3.72	0.75	0.67	Appropriate	NS
21	Well equipped ICT laboratory	3.95	0.71	0.54	Appropriate	NS
	Training procedures			0.54	Appropriate	NS
22	Teach the youths appropriate competencies in e-teaching utilization	3.84	0.82	0.65	Appropriate	NS
23	Explain the facilities to be used by the trainer for training to each trainee in each competency area of the smart phone maintenance	3.74	0.79	0.88	Appropriate	NS
24	Deliver the competencies step by step in logical order to the trainees	3.61	0.74	0.57	Appropriate	NS
25	Demonstrate the competencies while the trainee observed during step by step teaching	3.71	0.84	0.65	Appropriate	NS
26	Request the trainees to practice what the trainer demonstrated while the trainer observes them	3.83	0.72	0.08	Appropriate	NS

27	Correct wrong practices made by the trainee	3.90	0.80	0.57	Appropriate	NS
28	Encourage repetitive practice of knowledge and skills learnt	3.83	0.81	0.69	Appropriate	NS
29	Test the practice of a group of related competency towards achieving of the objectives	4.14	0.86	0.21	Appropriate	NS
30	Provides the trainee information about their performance	3.69	0.75	0.33	Appropriate	NS
31	Encourage visit to other relevant training institutions, write a report and submit to the trainer for a feedback system	3.85	0.83	0.73	Appropriate	NS
32	Teach the staff the source of e-teaching facilities	4.10	0.83	0.12	Appropriate	NS
33	Teach the staff how to manage risks in the e-teaching facilities	3.83	0.84	0.52	Appropriate	NS

Keys: *X = Mean of Respondents, SD = Standard Deviation, NS = Not significant, N = Number of the Respondents*

The data presented in Table 3 on research question and hypothesis 3 reveal 21 facilities and 12 training procedures in which their means ranged from 3.50 to 4.14. Each of the mean is above the cutoff of 3.50 indicating that all the facilities and training procedures could be utilized by trainers for building the capacity of technical education lecturers of colleges of education on e-teaching. The standard deviation values for the twelve procedures ranged from 0.72 to 0.86 and were less than 1.96, that is 95% confidence limit. This showed that the respondents were not far from one another in their responses and that their responses were not far from the mean.

The table also indicated that each item had its P-value greater than 0.05. This showed that there was no significant difference in the mean responses of lecturers of computer science, information technology specialists in the registered industries and ICT trainers on the training facilities and procedures that could be utilized by trainers for building the capacity of technical education lecturers of colleges of education in e-teaching. Therefore, the hypothesis of no significant difference was upheld for the 33 facilities and training procedures

5. Discussion of Findings

The findings of this study revealed 22 competencies in e-teaching were appropriate for capacity building of technical education lecturer, 44 instructional strategies for implementing e-teaching contents for capacity building of technical education lecturers while 33 training facilities and procedures that could be utilized by trainers for building the capacity of technical education lecturers in e-teaching were revealed. The findings of this study agreed with the findings of Ogbuanya, and Bakare (2014) who conducted a study on mechatronics skills required for integration into electrical/electronic engineering technology programme in polytechnics for sustainable employment of graduates in contemporary Nigeria. The findings revealed that 16 mechatronics contents and 40 mechatronics skills were required for integration into electrical/electronic engineering technology programme in polytechnics for sustainable employment of graduates

This finding was in agreement with the findings of Nwachukwu, Bakare and Jika (2011) who carried out a study to identify effective laboratory safety practice skills required by electrical and electronics students for effective functioning in the laboratory of technical colleges in Ekiti State. The authors found that 10 safety practice skills were required to use electrical hand tools, 25 safety practice skills in operating electrical and

electronic power tools and machines and 10 safety practice skills for working in electrical/electronic workshop.

This finding was also in agreement with the study of Akinduro (2006) who carried out a study on electrical installation and maintenance work skills needed by technical college's graduates to enhance their employability in Ondo State. The author found out that the graduates of technical colleges need domestic installation skills, industrial installation skills, cable jointing skills, battery charging skills and winding skills in electrical machine for employment in Ondo state. The findings of the above researchers in their various research activities helped to support the justification of the results of this study on development of appropriate e-teaching contents for capacity building of technical education lecturers of colleges of education in Lagos State

6. Conclusion

Technical education lecturers seem not know how to make use of e-teaching facilities for effective instructional delivery. They cannot effectively operate e-teaching facilities such as computer for typing and editing of materials, uploading materials into internet and making use of video conferencing for teaching. Technical education lecturers only manage to use projector during teaching their students as indicated earlier. The researchers now carried out a study in order to provide everlasting solution to shortcomings of lecturers. The purpose of the study was to develop appropriate e-teaching contents for capacity building of technical education lecturers of colleges of education in Lagos State. Three research questions were answered: one was to determine appropriate competencies in e-teaching for capacity building of technical education lecturers, second was to identify instructional strategies for implementing e-teaching contents for and the third one was to determine training facilities and procedures that could be utilized by trainers for building the capacity of technical education lecturers of colleges of education in e-teaching. In order to answer these questions, a 99-item self-structured questionnaire was adopted as the research instrument for data collection, and was administered to201 participating specialists from various institutions in Lagos State of Nigeria. In conclusion, the specialists determined appropriate contents in e-teaching and also identified instructional strategies, training facilities and training procedures for building the capacities of technical education lecturers in using e-teaching in colleges of education in Lagos State.

7. Recommendation

Based on the findings of this study, the researchers presented the following recommendations for consideration:
1. The technical education lecturers should be trained using the developed e-teaching contents
2. Relevant facilities and materials should be supplied by government and enabling individuals for the implementation of the developed contents in e-teaching.
3. The teachers or lecturers in other tertiary institutions should be trained with the developed e-teaching programme in other developing countries.

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