AVAILABILITY AND UTILIZATION OF ICT IN CLOTHING AND TEXTILES EDUCATION FOR EFFECTIVE TECHNICAL VOCATIONAL EDUCATION AND TRAINING (TVET) AND NATIONAL DEVELOPMENT

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Abstract

This study assessed the availability and utilization of ICT in clothing and textiles education for effective TVET and national development. Three purposes, research questions and one hypothesis guided the study. Thirty two (32) lecturers in all the tertiary institutions involved in teaching clothing and textiles/fashion and designing (universities, polytechnics and college of education) in Delta State were all used since is a small population. Data were collected with questionnaire and analyzed using mean, standard deviation and Analysis of Variance (ANOVA). Findings showed low availability and poor utilization of ICT equipment/facilities such as personal computers, telephones and modem. Some constraints to ICT utilization as limited ICT, incompetency, lack of fund and support staff were also identified among others. There is no significant difference in the extent to which ICT equipment were utilized in tertiary institutions in Delta State. Conclusions and recommendations were made that access and training on ICT be provided to teachers for competency.

Key words: *Availability, Utilization, ICT, Clothing and Textiles Education and TVET.*

Introduction

Clothing and textiles is one major course in the field of Home Economics. It is a vocational subject studied at secondary and tertiary levels to acquire knowledge in clothing and textiles and other related areas. The clothing and textiles education objective is specifically to equip student with intellectual and professional skills and other competencies needed for employment and self-reliance. Hence clothing education involves knowledge and skills to train, equip and develop students for life. According to Dada (2007), "the philosophy of clothing education is centered on the acquisition of knowledge, skills and attitudes that can be applied for enormous employment opportunities in occupations relating to clothing such as clothing design and construction, repair and crafts among

others". Clothing and textiles education consists of two components of theoretical and practical areas. The theoretical aspects involves teaching/learning knowledge, ideas and concepts while the practical deals with demonstrations of skills and processes of what is learnt and are carried out in the clothing laboratory. The clothing and textiles teacher is the sole director of the teaching and learning activities that go on in the classroom. He/she should be competent and proficient in instructional strategies that promote problem solving and innovation in teaching and learning. Clothing and textiles as a vocational course has been a veritable tool to equipping and developing individuals for the world of work. According to Anyakoha (2013) "vocational technical education in Nigeria should be transformed into a tool for functional skills acquisition and job creation for youths and sustainable development". Vocational education and training is therefore of paramount importance in Nigeria educational system for national development.

Technical vocational education and training (TVET) is a comprehensive educational programme on technologies, related sciences, practical skill acquisition and knowledge for occupations in various sectors of economic and social life (UNESCO, 2001). The main objective of TVET in the national policy on education is "to inculcate practical and applied skills as well as basic scientific knowledge in students for useful living in the society" (FRN, 2004). "TVET can take the form of formal school that is in the school system or informal in the form of apprenticeship training at work place or by distant media" (Obierike, 2015). These professional skills and competencies acquired in TVET formal school education helps the graduates of such school possess job oriented skills/competencies even outside the field of teaching necessary for economic growth and national development. Clothing and textiles being a practical skill subject is part of it. Clothing and textiles education advances in this direction to impact knowledge, ideas and practical skills relevant to occupations for individuals especially youths for sustainable development. As a practical subject the use of information and communication technology (ICT) is crucial in teaching and training of individuals for jobs.

Currently the world is experiencing technological development through information and communication technology (ICT), making the world a global society. In this development the field of education is not left out. Information and communication technology (ICT), according to Bandele (2006) "is a revolution that involves the use of computers, internet and other telecommunication technology in every aspects of human endeavour". "ICT refers to electronic or computerized devices, assisted by human and interactive materials that can be for a wide range of teaching and learning as well as for personal use" (Ofodu, 2007). This means that ICT is technological/electronic gadgets used in

communication delivery in teaching, learning, training and any form of educational instruction. It therefore means that ICT facilitates teaching and learning process since individual can access information from any part of the world without changing location. The quality and quantity of teaching and learning as well as research in our tertiary institutions have greatly be impacted by the use of ICT. This study focuses on tertiary institutions since they are higher level of education instrumental to the provision of needed manpower for cultural, political and socio-economic development of the nation. They are the universities, polytechnics and colleges of education.

To be relevant and fit into the TVET national development both the teachers and the students of clothing and textiles should acquaint themselves with ICT and update their skills and knowledge from time to time .This in turn will influence the quality of graduates from tertiary institutions and their input to the society. According to Imasuen, Omorogbo and Isenalume (2012) "ICT has the potential to accelerate, enrich and deepen skill, motivate and engage students in learning, create economic viability, strengthen teaching and provide connection between school and the world". As a result the teachers need to acquire ICT skills/competencies to enable them to impart skills needed by the students to meet the present day demands in technological development in school and workplace after graduation. "The ICT has tools enhance and facilitate teacher's pedagogical activities" (Yusuf, 2005). In clothing and textiles/fashion industries in United States computer is used in the production and grading of patterns for commercial production. "The usage of modern technological solutions and new procedures through Computer Aided Design (CAD) system for design preparations reduces time needed for clothing production, preparations and increase the quality of products" (Petrovis, Martinovic, Stojilijkovic, Stepanovic and Popov; 2006) These result in making nice fitting garments which are exported to other countries. Teachers and students of clothing and textiles need to exploit such changes and innovations in garment construction to be resourceful and competent. Through the ICT teachers and students get knowledge on the new fibers, yarns, fabrics, textile design, garment design/styles, colour and colour mixing, clothing accessories in vogue, trends in fashion and Computer Aided Design (CAD) fabric fashion merchandising among others. Practical skills such as pattern drafting and production, sewing techniques are on DVD, CDs and software with which students can learn on their own. Others are internet, laptops/personnel computers, television, Video tapes, Audio tapes, E-journal and flash disk.

Globalization and the need to meet technological challenges for national development through TVET has necessitated the provision and utilization of ICT in the teaching and learning of clothing and textiles in tertiary institutions. Students

have phobia for clothing and textiles and perceive clothing techniques as being difficult. As a result, their interest in the subject is low and hard to sustain during lectures. Use of modern teaching strategies and expositions can help to address this challenge. Teachers need to be at the frontier of knowledge in the fields of clothing and textiles generating knowledge rapidly on regular basis. But the situation is that in most cases, teachers often depend on obsolete knowledge and skills. "Many depend solely on their old teachers notes" (Anyakoha, 2013). Many teachers may not even be familiar with new technologies (ICT). The instructional resources and facilities are often in very short supply and obsolete. In this era of technological advancement the traditional teaching methods can hardly promote educational development in tertiary levels. According to Anyakoha (2013) these obsolete techniques and methods cannot be utilized effectively to solve present day problems. Such teachers circulate obsolete knowledge which cannot promote learning and national development. Studies show that teachers' ability, willingness and extent to which they integrate ICT into their teaching/learning depend largely on the professional training and development which they receive as well as teachers' knowledge and competence (Pearson, 2013; Williams, 2003: Imasuen et al, 2012). Competency in ICT use in teaching clothing and textiles provides teachers and students with opportunity to think, exchange ideas, clarify and understand concepts, aid creative problems solving and innovations and increase knowledge. Inadequate knowledge and use of ICT in teaching clothing and textiles in tertiary institutions will produce graduates who may not be able to fit into and function in the mainstream of national development. This is why Olaitan, Nwachukwu, Onyamachi, Igbo, and Ekong (1999) advised that "teachers should teach the student not for purpose of teaching only, but to help them become better informed and skilled citizens and be relevant in the world of work" which TVET stands for. Therefore, this study tries to assess the availability and utilization of ICT in clothing and textile education for effective TVET and national development.

Purpose of the Study

The main purpose of this study is to assess the availability and utilization of ICT in clothing and textiles education for TVET and national development. Specifically the study sought to:

1. Find out the extent to which ICT equipment/facilities are available in clothing and textiles education for effective TVET,
2. Assess the extent to which clothing and textiles lecturers utilize ICT facilities in teaching for effective TVET.
3. Identify constraints in the use of ICT facilities in teaching and learning clothing and textiles for effective TVET.

Research Questions

This study answered the following research questions

1. To what extent are the ICT equipments/facilities available in clothing and textiles education for effective TVET?
2. To what extent are ICT equipment/facilities utilized in teaching clothing and textiles for effective TVET.
3. What are the constraints in the use of ICT equipment/facilities in teaching and learning clothing and textiles for effective TVET?

Hypothesis

There is no significant difference on the extent to which ICT equipment/facilities are utilized in teaching and learning clothing and textiles in colleges of education, polytechnic and universities.

Methodology

Research Design

The study adopted survey research design. This was used to elicit responses from respondent with questionnaires without interference. The area of the study was Delta State.

Population

The population of this study was 32 lecturers/instructors of clothing and textiles in all the tertiary institutions in Delta State that are teaching clothing and textiles and Fashion and Designing programmes. They are Delta State University, Abraka Delta State Polytechnic, Ogwashi-uku, College of Education, Agbor, Federal College of Education (Technical), Asaba, College of Education, Warri, Delta State College of Physical Education, Mosogar, Otefe Polytechnic, Oghara and all schools in affiliation with Universities. The whole population was used because of its small size.

Instrument

Data was collected using a structured questionnaire titled; availability and utilization of ICT equipment/facilities in clothing and textiles education for TVET (AUICTECTETVET). The questionnaire was developed based on the research questions and hypothesis which contained two parts. Part I contained the demographic information of the respondents. Part II has three sections to which respondents responded to. Section A contains four point rating scale of Highly Available (HA), Moderately, Available (MA) Lowly Available (LA) Not Available (NA) used in assessing the availability of ICT equipment/facilities. Section B contains four point rating scale of Very Often (VO) Often (O), Rarely (R) Not Used (N) assessed the extent of ICT utilization. Section C contains four point scale of Strongly Agreed (SA), Agreed (A), Disagreed (DA) and Strongly Disagreed (SD), all responses are weighted 4,3,2 and 1 for sections A,B and C respectively. The instrument was face validated by two clothing and textiles lecturers from the University and one fashion and designing lecturer from the Polytechnic to assess the extent to which the instrument addressed the purpose of the study. This questionnaire was pilot tested and reliability coefficient computed using Cronbach Alpha method

which yielded a coefficient of 0.87, 0.79 and .089.

Data Collection and Analysis

Instrument was administered to the thirty-two respondents who responded and return all at the spot to the researcher. This research questions were analyzed using mean and standard deviation to ascertain how homogeneous or heterogeneous the respondents were in their responses. Means of 2.50 was used as cut off point. Any item with mean of 2.50 and above is regarded as Highly Available/Very Often/Strongly Agreed, 2.00–2.49 is regarded as Moderately Available/Rarely/Agreed and 0–1.99 is regarded as Not Available/Not Used/Strongly Disagreed. Hypothesis was analyzed using Analysis of variance at 0.05 level of significance.

Result

Research Question 1: To what extent are ICT equipment/facilities available in clothing and textile education for TVET?

Table I: Mean Rating of Responses on ICT Equipment Available in Clothing and Textile Education.

S/NO	ICT Equipment/Facilities	X	SD	Decision
1.	Personal computer	2.81	0.62	HA
2.	Computers in schools' ICT laboratory	3.10	0.52	HA
3.	Computers in clothing and textiles lab	1.60	0.90	NA
4.	Internet facilities in the school	1.58	0.71	NA
5.	Modem	2.31	0.90	NA
6.	Television	1.89	0.68	NA
7.	Over head projectors	1.70	0.81	NA
8.	Audio visual video player	1.21	0.68	NA
9.	Audio visual cassettes	1.48	0.71	NA
10.	DVD	2.31	0.79	MA
11.	CD	1.00	0.59	NA
12.	Camera	2.00	0.97	MA
13.	Flash Disk	2.65	0.88	HA
14.	e-journals	2.34	0.68	MA
15.	Telephone	3.00	0.91	HA
16.	Printers	1.11	0.61	NA
17.	Scanner	1.00	0.84	NA
18.	Software	1.34	0.71	NA

X – Mean, SD – Standard Deviation, HA – Highly Available, NA – Not Available.

Result in Table I shows that items 1,2,13 and 15 have mean above 2.50 so they are highly available. Items 5, 10,12 and 14 have

mean between 2.00–2.49 so are moderately available while other items have mean below 2.00 so are not available. This indicates that personal computers, computers in ICT lab, flash disk and telephone are lowly available, modem; DVD and e-journal are moderately available while others as television, internet, computers in the lab, projector among others were not available.

Research Question 2: To what extent were ICT equipment/facilities utilized in teaching clothing and textiles for TVET.

Table 2: Mean rating responses on ICT equipment/facilities utilized in teaching clothing and textiles.

S/NO	ICT equipment/Facilities	X	SD	Decision
1.	Personal computer to deliver my lectures	1.11	0.92	N
2.	Internet facilities to prepare lecture notes	2.89	0.74	VO
3.	Modem to access internet for information	2.14	0.87	R
4.	Television	1.74	0.70	N
5.	Over head projectors in teaching	1.23	0.45	N
6.	Audio visual in teaching	1.87	0.61	N
7.	DVD in teaching	2.48	0.52	R
8.	CD to copy documents for teaching	1.53	0.71	N
9.	Flash Disk to save files	2.02	0.92	R
10.	Telephone to access mails and information	3.40	0.58	VO
11.	e-journal	2.11	0.66	R
12.	Printers to produce document	1.89	0.79	N
13.	Scanner for images and sketch	1.70	0.81	N
14.	Software are for pattern drafting	1.67	0.69	N

Result in Table 2 shows that items 2 and 10 have mean above 2.50 so are Very often utilized; items 3, 7 and 11 have below 2.50 rarely utilized while other items are not utilized with mean below 2.00. This indicates that internet facilities and telephone are very often utilized; modem, DVD, Flash disk and e-journal are rarely utilized while personal computers, television, over head projectors CD, Scanners software and others are not utilized.

Research Question 3: What are the constraints in the use of ICT equipments/facilities in teaching and learning clothing and textiles for effective TVET.

Table 3: Mean rating of responses on constraints in using ICT equipment facilities in teaching clothing and textiles.

S/N	**ICT equipment/Facilities**	$\bar{X}$	**SD**	**Decision**
1.	Limited ICT equipment/facilities	3.65	0.98	SA
2.	Incompetency in ICT usage	3.81	1.00	SA
3.	Inadequate electricity supply	3.70	0.87	SA
4.	Lack of internet facilities	3.74	0.70	SA
5.	Poor maintenance of ICT	3.08	1.10	SA
6.	Inadequate ICT centres in schools	3.41	0.92	SA
7.	Lack of fun to purchase equipment/facilities	3.89	0.70	SA
8.	Lack of technical support staff	3.80	0.71	SA

Result in Table 3 shows that the mean of all the items are above 2.50. This indicates the constraints in ICT use as; limited ICT equipment, incompetency in ICT use, inadequate electricity supply, lack of internet facilities, lack of fund and technical support staff.

Null Hypothesis: There is no significant difference on the extent to which ICT equipment/facilities are utilized in teaching and learning clothing and textiles in universities, polytechnic and colleges of education.

Table 4: One way ANOVA on ICT use in universities and polytechnics and colleges of education.

Source	Sum ofdf. Square (ss)	F = Square (ms)	Sign cal	Decision
Between groups	1.670	2	.845	.05
Within groups	47.541	30	.548	
Total	**49.211**32			

The result of the one-way ANOVA of respondents mean rating shows the value of (F) .321 is no significant at the equivalent significant value <0.05 (accepted). There is no significant difference in the extent to which ICT equipment/facilities were utilized in teaching and learning clothing and textiles in universities, polytechnics and colleges of education.

Discussion of Findings

Findings from the study showed that personal computers, computers in ICT lab, telephone and flash disk are highly available, modem, DVD, e-journals are moderately available for lecturers teaching, while other equipment are not available. This shows low extent of availability of ICT

equipment. This is not surprising as provision of instructional materials have greatly been impeded by insensitively of stakeholders in education toward equipping schools. Supporting this finding Imasuen et al (2012) stated that "limited funds available to higher institutions have hindered the provision of needed facilities and infrastructure to promote ICT usage." The classrooms are equally not equipped. This situation has much implication on effective teaching and learning. Availability of ICT equipment aids in instructional delivery for better understanding of concepts, ideas and practical works. According to Gulbahar and Guven (2008) "all schools need to be equipped with the necessary ICT in orders to provide the future generations with the required tools and resources for access and use and to obtain the expected skills". These equipments are actually important, they make teaching clothing and textiles interesting, easy and explicit so that students can acquire needed skills and knowledge through TVET for tomorrow living as well as fit into larger society.

Finding also showed that only internet facilities and telephones are very often utilized. While modem, flash disk, DVD and e-journals are rarely utilized but projector, CD, television software and other are not utilized at all. This implies that lecturers do not utilize ICT equipment in teaching clothing and textiles in schools, which must have resulted from non availability, lack of proficiency and competency in ICT. Many of the lectures were never taught with ICT so they do not see the need for its use. In support of this finding Imasuen et al (2012) stated that most Nigeria universities, colleges of education and polytechnics lecturers are not competent in the utilization or integration of ICT in their instruction. Teachers might not even be familiar with new technologies (ICT), many depend solely on their own teachers' notes and lack international exposure (Anyakoha, 2013). The utilization of instructional materials by the teacher as a repertoire of knowledge strengthens the teaching and helps meet the needs of every learner that is involved in learning. This helps the teacher to keep abreast with new knowledge, ideas and information in the subject. In this era of globalization lecturers should avail themselves to the opportunities to enhance their knowledge and skills to facilitate teaching and learning process and be up to date with information across the global.

The finding also showed the constraints to ICT usage by the lecturers as limited ICT equipment, incompetency of lecturers in ICT usage, inadequate ICT centers, lack of internet facilities in schools, lack of electricity supply, lack of fund and technical support staff. When these constraints are there the ICT usage can never be effective in clothing and textile education. Functional TVET in the school system needs effective practical knowledge, skills and intellectual development for usefulness through new technologies (ICT). This finding affirmed the statement of Abolo (2011) who states

that "funds though ever inadequate are needed to purchase materials or equipment and pay for services, so its sufficiency is very important". The incompetency in ICT affects their ability to advance research information on clothing and textile education which ought to improve teaching strategies. In line with this finding Lemechi (2001) highlighted that many Home Economics teachers are not computer literate and again the shortage of computer machines in schools are inhibiting factors. According to Igbo and Iloeje (2012) computers are used to make accurate patterns and this requires that designer must be computer literate while the digitizer coordinates the process. Computer Aided Design (CAD) is almost replacing the manual way of drafting partners therefore lecturers should be knowledge and skilful in its use. This calls for proficiency and competency in ICT for efficiency. Technical personnel are needed to organize and direct procedures step by step. As a practical oriented course for skill acquisition experienced technical supporting staff is indispensable to achieve its objectives.

The null hypothesis was upheld, there is no significant difference in the extent to which ICT equipment/facilities were utilized in teaching and learning clothing and textiles in universities, polytechnic and colleges of education. This result must have been so because they are funded by the same government, hence the data showed a homogeneous responses of the respondents across the tertiary institutions. The different institutions lack available ICT equipment, lecturers do not utilized ICT in teaching since not available. There are constraints in ICT usage. This has implication for today's graduates who need functional skills, knowledge, attitudes and abilities to tackle life challenges and for national development.

Conclusions

The findings of the study showed extent of availability of ICT equipment and poor utilization of few ones available, such as personal computers, telephone and modem. Usage of ICT is constraint by limited ICT available, incompetency, inadequate electricity supply, lack of fund and technical support staff. There is no significant difference in the extent to which ICT equipment/ facilities are utilized in teaching clothing and textiles in universities, polytechnic and colleges of education.

Recommendations

Based on the findings these recommendations were made:

1. Government should equip schools with adequate ICT equipment/facilities needed to promote teaching and learning clothing and textiles.
2. To achieve effectiveness in TVET, teachers of clothing and textiles should be trained to be proficient and competent in the use of new technologies necessary for teaching and learning.
3. Teachers' access to ICT facilities should be enhanced by providing ICT

equipment to them for capabilities and advancement in appropriate pedagogical approaches in clothing and textiles education.

4. Lecturers should be given sponsorship to advance international exposure to see, know and learn from what is obtainable in developed countries.

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