ACCESSIBILITY OF INFORMATION AND COMMUNICATION TECHNOLOGY (ICT) IN TEACHING AND LEARNING OF HOME ECONOMICS IN SECONDARY SCHOOLS IN NASSARAWA EGGON AREA, NASARAWA STATE

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Abstract

The application of Information and communication technology (ICT) in teaching and learning is an important development in the contemporary world. Its use in the teaching and learning of Home Economics especially in Nigeria is however scarcely reported. This may be due to several factors but this paper examines the accessibility of ICT in teaching and learning of home economics in secondary schools in Nassarawa Eggon area in Nasarawa state. A questionnaire based survey was carried out using a convenient sample of home economics teachers in all the 10 schools offering home economics from a population of 56 schools in the area. Data collected on the study were analyzed using frequency count and percentages. It was established that accessibility to ICT in teaching and learning home economics was very limited, thus depriving both teachers and students of benefits associated with productive teaching and learning of home economics using ICT in the area. The paper recommends that government and other stakeholders should make efforts to provide necessary ICT tools in secondary schools for sustainable teaching and learning.

Key Words: Information and Communication Technology. Teaching and Learning, Home Economics, Secondary School

Information and communication technology (ICT) has become significantly pervasive in all aspects of life. Information and communication technology describes any equipment or interconnected systems of equipments used in automatic acquisition, storage, manipulation, management, control, display, switching and transmission of information (FRN, 2004). ICT embraces computers and computer applications, internet, news prints, television, radio telephones, cameras, video, CD-Rom, DVD and social networks (Urdzina & Selvaha, 2007; Uwameiye, 2015). Many educational systems in the world now use various ICT facilities in schools for productive teaching and learning. The benefits of this innovation are widely reported in literature.

Aduwa-Ogiegbean and Iyamu (2005) indicate that using ICT to teach generally helps in building the creative and intellectual resources of teachers and students. The Federal Government of Nigeria is not oblivious of the benefits of ICT in education and so provides in the National Policy on Education (NPE) that it shall avail schools with necessary ICT facilities and infrastructure to promote e-learning. Considering that ICT application for productive teaching and learning is a general contemporary development that is highly embraced by schools in many countries, the possibilities of tapping into this innovative approach to make teaching and learning of home economics sustainable in secondary schools in Nigeria and particularly in Nassarawa Eggon cannot be taken for granted.

From the foregoing, home economics as a skill oriented subject with its various components such as home management, foods and nutrition, clothing and textile, and others can be taught and

learnt effectively with ICT. The question now is how accessible are ICT facilities in teaching and learning this subject in secondary schools in Nassarawa Eggon area? This question provides a starting point for this paper. It ascertains the ICT facilities available in secondary schools and the extent of accessibility to ICT in teaching and learning home economics in the area.

Literature Review

Literature is replete with definitions of ICT, concept of home economics, importance of ICT in teaching and learning, possible areas of ICT application in home economics. Researchers have also reported on accessibility to ICT for teaching and learning in schools in various domains. These concepts and other relevant issues are discussed as follows.

Theoretical Frame work

This paper in considering the question of accessibility to ICT in teaching and learning is built on the Technology Acceptance Model (TAM) by Bagozzi and War Shaw (1989) which recognises perceived usefulness and perceived ease of use as factors that influence and support teachers use of ICT in the classroom. The model links ICT accessibility to ease of use. When teachers have easy access to ICT facilities it further strengthens their resolve to use it for teaching purposes.

Clarification of Concepts

Concept of ICT

UNDP Evaluation Office (2001) regard ICTs as information handling tools that are used to produce, store, and process, distribute and exchange information. These tools are able to work together, and combine to form networked world- which reaches into every corner of the globe. It is an increasingly powerful tool for participating in global world, improving the delivery of basic services; and enhancing local development opportunities (UNDP, 2006). Ogunsola (2005) views ICT as an electronic based system of information transmission, reception, processing and retrieval, which has drastically changed the way we think, the way we live and the environment in which we live". It can be used to access global knowledge and communication with other people (Ogunsola, 2005). Students who use ICTs gain deeper understanding of complex topics and concepts and are more likely to recall information and use it to solve problems outside the classroom (Apple Computer, 2002).

Concept of Home Economics

Home economics in comprehensive terms is the study of laws, conditions, principles and ideals concerned with relationships between individuals, families, communities and the physical environment in which they live (International Federation for Home Economics (IFHE, 2012). As a subject, it is taught in secondary schools, colleges, universities and other educational centres to prepare learners gain knowledge on everyday living, household interaction with the environment, decision making and building or changing habits for fulfilling real life responsibilities at home or in professional areas (American Association of Family and Consumer Services, cited in Hira, 2012). Its coverage according to Shanahan (2003) includes food preparation, parenting, early childhood education, family economy, human development, interior design, textiles, fashion design and related areas.

Defining home economics in context of the secondary school curriculum in Nigeria, Anyakoha (2009) states that home economics is a pre-vocational subject that prepares students for the

world of work by equipping them with skills and aptitudes that enhance life and help the maximally use human and material resources. The various definitions show that home economics has origin in homes and wider living environment; has capacity to draw from a wide range of disciplines; is concerned with empowerment and well being of individuals, families and communities; can influence all sectors of society; facilitates the development of attribute for life-long learning and emphasises improvement in quality of life.

Uwameiye (2015) highlights that the aim of teaching and learning home economics in secondary schools in Nigeria is to educate the youth for family living; for role performance as future home-makers; for a well rounded life in home, community and nation; to be intelligent consumers and producers of goods; and to enable them to advance the conditions in the family, community, nation and the world. ICT has potentials to significantly help in the realisation of these aims, hence the need for it to be accessible for the teaching and learning of the subject.

Benefits of using ICT for Teaching and Learning in Schools

Many benefits have been ascribed to ICT. According to Nwosu (2003) the utilization of ICTs in education could lead to cost-effectiveness in learning, bridging the gap between teachers-students' ratio, and improve the overall quality of learning. ICT facilities also help teachers in preparation of materials and lesson plans, research, instruction delivery, obtaining online tests and quiz samples and assessment, guide students to read learning materials on screen and hands-on exposition through simulations to demonstrate lessons. It is very useful in delivery of practical lessons and follow-up of students learning activities Lau-Ho (2005).

On the side of students, Limon (2015) observes that ICT helps students to acquire the knowledge, skills and attitudes for a rapidly changing society apart from preparing them for effective living in the contemporary world. He further narrates that electronic discussions, experiential learning through specialised software, simulation of real life observation experiences practice activities are done through ICT. According to Shannina (2011) cited in Yohanna (2016), the great interactive potentials for ICT users also provides opportunities for collaborative learning among students and enhance their problem solving skills.

In large classes as commonly found in secondary schools in Nigeria today, using ICT for teaching and learning could conveniently help teachers deliver effectively and efficiently by preparing computer programs for systematic delivery of instructions.

ICT Tools and Possible Thematic Areas of Application in Home Economics

Foods and Nutrition

In the Foods and Nutrition lessons, the teacher can avail himself/herself with the following ICTs tools to teach the students:

- Imaging e.g. using digital camera to record practical lessons or a scanner or a digital microscope to take cross sections of different types of products e.g. bread making
- Using the computer to show a flow chart of how a product is to be made
- Find recipes from the web in the internet and also develop recipes from the internet.
- Using iPad to access recipes different from the traditional ones.
- Using the internet for nutritional analysis/comparing dietary information from world regions
- Using the hedonic scale for presenting the sensoring evaluation of foods during practical.
- Use face book, twitter, and drop box to share and get information on nutrition topics.

• Using computer mediated communication (one on one, one to many, many to many) e.g. email, surfing the internet.
• Using the spreadsheets to track the nutritional intake of people over time and students could write down suitable captions.
• For continuous assessment, teachers can make close procedure computer exercise, that is, leave spaces so that students can fill in gaps, make text boxes so that student do no have to re-space words. Missing words can be made available in movable text boxes at the bottom of sheet.

Clothing and Textile

• Use the computer to draft patterns suitable for different figures.
• Place design material on school web page for students regularly use.
• Make students to use computers in the mixing of colours suitable for dyes
• Use sites like pattern Review and Burda style as resources to teach techniques, and gain access to other people who sew. These sites teach sewing from novice to expert.
• Use YouTube to tap into sewing ideas.
• Use iPhone, iPad Touch application to help students with sewing classes
• Use My fashion review to access fashion trends
• Use Skype as a community where clothing lessons can be shared and received.
• Use the blog to teach clothing

Home Management

• Lessons on budget can be taught using Google sheets
• Use excel to teach budget
• Use interior design floor plan software to teach floor coverings
• Use Google calendar to teach reminder of recurring events in the home
• Use Gmail for keeping contacts
• Use the computers to teach how to store household inventories such as family income, expenditure, receipts, menus and files.
• The use of computer as a means of relaxation as educational tools for family members such as playing of games.

Studies on Accessibility of ICT in Teaching and Learning Home Economics

Accessibility of ICT in the context of this work refers to extent to which ICT is available for use when needed for teaching and learning home economics in schools. Several works have explored the question of accessibility of ICT for teaching and learning in schools in various domains. Mundy and Sultan, (1999) for instance points out that, only one of every 9,000 Africans have access to internet compared to 138 of the rest of the world. This makes inter and intra networking exchange impossible in schools. A survey using questionnaires carried out by Urdzina and Selvaha (2007) to assess the application of ICT in home economics in Latvia found out that few respondents had computers but lacked internet and e-mail access. The study also established a generally limited access to ICT for teaching and learning home economics in the country. In Nigeria, Amedu (2014) in an empirical study to assess the use of e-learning facilities by home economics teachers in schools in Delta State, Nigeria secondary established that, most secondary schools lack the necessary ICT devices for teaching and learning home economics.

Methodology

This study employed a descriptive survey method to investigate the accessibility of ICT in teaching and learning home economics in secondary schools in Nassarawa Eggon area in Nasarawa state. The population of this study comprised all the 56 schools in Nassarawa Eggon area, Nasarawa state. A convenient sample of 10 teachers in all the 10 public secondary schools offering home economics; was used in the survey. An instrument tagged Teachers ICT Access (TICTA) designed by the researchers with a reliability coefficient of 0.82 was used to collect data in the survey. Data collected on the study were analyzed using frequency count and percentages.

Results

The results of the analysis are presented in the tables below:

Research Question 1: How accessible are ICT facilities in teaching and learning home economics in secondary schools in Nassarawa Eggon area?

To answer this question, respondents were asked to identify the type of ICTs available and their ease of accessibility to them when needed. The result is presented in Table 1a and 1b.

Table 1a: Available ICTs for Teaching and Learning

ICT facilities		No of responses	%
a.	Computers	3	30
b.	Scanners	0	00
c.	CD-ROM	3	30
d.	Photocopiers	1	10
e.	Fax Machine	0	00
f.	Multimedia / Data projectors	0	00
g.	Internet connectivity	0	00
h.	Digital camera	0	00
i.	Television	0	00
j.	Video equipment	0	00

Table 1a above shows that 3 (30%) of the teachers who took part in the study indicate computer is the type of ICTs they have in their schools. The table also shows that 3 teachers (30%) also indicate they have CD-ROM and 1 teacher (10%) indicates they have photocopier. No teacher indicated having Scanners, Fax Machine, Multimedia/Data projectors, Internet connectivity, Digital camera, Television and Video equipment. The result indicates that few schools have ICT facilities for teaching and learning.

Table 1b: Accessibility of ICT when needed for Teaching and Learning of Home Economics

ICT facilities		Responses				
		Always	Often	Sometimes	Seldom	Total
a.	Computers	0 (00)	0(00)	3 (30)	7(70)	100 (100)
b.	Scanners	0 (00)	0(00)	0(00)	10(100)	100 (100)
c.	CD-ROM	0 (00)	0 (00)	3 (30)	7(70)	100 (100)
d.	Photocopiers	0 (00)	0(00)	3 (30)	7(70)	100 (100)
e.	Fax Machine	0 (00)	0 (00)	0(00)	10(100)	100 (100)
f.	Multimedia / Data projectors	0 (00)	0(00)	0(00)	10(100)	100 (100)
g.	Internet connectivity	0 (00)	0(00)	0(00)	10(100)	100 (100)
h.	Digital camera	0 (00)	0 (00)	0 (00)	10(100)	100 (100)
i.	Television	0 (00)	0 (00)	0 (00)	10(100)	100 (100)
j.	Video equipment	0 (00)	0 (00)	0(00)	10(100)	100 (100)

Table 1b shows that Out of the 10 ICTs identified only 30% of respondents indicated they sometimes had access to computers, CD-Rom and photocopiers respectively. 70% indicated that they seldom had access to these facilities. All the respondents (100%) indicated that they seldom have access to scanners, fax machines, multimedia or data projectors, internet, digital cameras, television and video equipment in teaching and learning home economics in the area. No respondent indicated always or often having easy access to any of the ICT facilities identified. This means that accessibility of ICT in teaching and learning home economics in secondary schools in Nassarawa Eggon in Nasarawa state was limited.

Discussion of Findings

Among the ten ICTs identified few schools had computers, CD-ROM and photocopiers. No school offering home economics in the area had internet and e-mail facilities that respondents didn't have access to. Accessibility to the identified ICTs was generally low in the area. This is in agreement with the report by Gordon University Aberdeen, Scotland that teachers reported less use of the Internet and e-mail. This result may be due to the fact these facilities are not available for access or perhaps the teachers lack the skills to access them. Moreover, some governments consider providing Internet connectivity in schools as being expensive and difficult to maintain. However, providing Internet connectivity should not be seen in this way considering the plethora of information that can be accessed by the teachers and how this could be of immense help to facilitate knowledge delivery and students learning.

Conclusion

This paper attempted to justify the need of ICTs in the effective teaching of home economics in the secondary schools. The world has become technology driven and for any discipline to be relevant must of necessity move with ICT. This implies that all stakeholders in education must work together to make ICT accessible to teachers and students in the teaching and learning of all school subjects including home economics in secondary schools in Nigeria.

Recommendations

Based on the low accessibility to ICT in teaching and learning home economics in the area, it is recommended that:

Necessary cooperation should be established between schools and with other institutions of higher education in Nigeria which implement the Home economics teacher training programs and use ICT in the study process.

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