Role of Information Communications Technology (ICT) in Home Economics Education in Nigeria

A. I. Gamawa; Victoria M. Adebayo; Hussaina K. Tamiyu; and Muhibat A. Akande

Abstract
This study investigated the role Information Communications Technology (ICT) plays in Home Economics Education. The integration of ICT in the educational system has provided opportunities for both teachers and students to develop self-independence in acquiring knowledge and skill in a particular discipline. This study aims at linking the role of ICT as an effective tool in achieving Home Economics Education in Nigeria. The study adopted qualitative method using expository, evaluative and interpretative methods to analyse the data gathered for the study. The study pointed out some of the fundamental challenges confronting the integration of ICT in teaching and learning of Home Economics Education in Nigeria. The study argues that the integration of ICT in Home Economics Education plays an essential role in providing high quality education, providing possibilities of transforming teaching and learning process, serving as great potential for generating and supporting lifelong knowledge acquisition, providing innovative ways to utilize the knowledge and skills in Home Economics Education. These roles make both teachers and students to develop an increasing level of expertise to be independent, self-responsible, self-sufficient and intrinsically motivated learner. The study concludes that replacing the traditional pedagogical practices with ICT will underpin in the educational system in the country. Provision of ICT
equipment, raising ICT centres in school environment among others were recommended to be carried out by government, non-governmental organizations and host communities.

**Keywords:** Home Economics Education, ICT, Students, Teachers, Teaching and Learning Process

**Introduction**

Information and Communications Technology (ICT) is one of the important sources of innovation and improvement of efficiency across almost all fields of human endeavour in recent times (Limon, 2015). The use of ICT has become a critical part of the learning process for students both outside and inside the classroom settings (Pelgrum & Law, 2003; Dauvarte, 2015; Basri, Alandejani & Almadani, 2018). There is no doubt that the integration of ICT in educational system has provided opportunities for both teachers and students to develop self-independence in acquiring knowledge and skill that could contribute to national development. Alderete and Formichella (2016) stress that ICT contributes to “universal access to education, equality in instruction, quality in teaching and learning and the professional development of teachers, as well as more efficient management and administration of education systems”. This underscores some of the roles ICT plays in educational system. As a discipline, Home Economics Education offers diverse opportunities to learners in food and nutrition, clothing and textile, home management, child development and interior decoration to be self-reliant and self-empowered. As a matter of fact, students find it more challenging in achieving academic performance in the subject as well as acquiring the skills as a result of fundamental challenges confronting the teaching and learning of the subject at the secondary and post-secondary levels. These challenges include wide range of subject curriculum, unequipped laboratories, inadequate funding, lack of instructional materials, poor attitude and preparation to teaching the subject, lack of professional teachers among others (NCCE, 2004; Alapa, n. d; Okafor, n. d).

One of the ways to achieve effective teaching and learning in our contemporary time is through ICT. Incorporating ICT in the educational sector is imperative because of its
importance to teaching and learning process in the academic environment. To be precise, integrating ICT in teaching and learning of Home Economics Education will contribute immensely to self-development of teachers and students in this discipline which will advance the development of the nation at large. Limon (2015) stresses that the integration of ICT is a major educational reform in achieving the goals of 21st century teaching and learning; this involves instructional transformation in the classroom that shift from a teacher-centred to a student-centred approach, and also incorporates shifts in the use of curriculum resources and personal beliefs. The role of ICT as a tool for teaching Home Economics education focuses on the teacher’s integration of technology into the learning environment to impact on students’ academic performance and other related benefits.

Bhaurao (2015) and Amalnik, Moayyedi, & Mirzaei (2015) argue that ICT serves as a tool for transforming teaching and learning processes from being highly teacher-dominated to student-centred, that result in increased learning gains for students as well as creating and allowing them to develop creativity, problem-solving abilities, informational reasoning skills, communication skills, and other higher-order thinking skills.

The above described desire is yet to be embraced by teachers and students of Home Economics Education in the country. ICT is a fundamental tool that will facilitate teaching and learning process in Home Economics Education in our Nigerian educational sector. The National ICT Strategy for Malta (2008) spells out clearly the importance of ICT in an academic environment and encourages Home Economic Education teachers to embrace this development. The document writes: “.... we must invest in our teachers, who need to transform our pedagogies into self-directing learning activities and problem-solving strategies, where creativity and collaboration feature prominently and regularly in our classrooms.” It is against this backdrop that this study seeks to link the role that ICT plays in Home Economics Education for effective teaching and learning process in the country.

Conceptual Clarifications

Information Communications Technology: The concept of ICT does not have a univocal definition. Scholars have viewed the concept in different perspectives. These numerous definitions show that ICT is an important component of information technology which is responsible for technology
transfer of information and tools to control the flow of logic and data transmission through different media (Marcelle, 2000; Kiiski & Pohjole, 2001). The concept has been recognized all over the world as one of the most vital branches of information technology.

According to World Bank document (2000), ICT is defined as “the set of activities which facilitate by electronic means the processing, transmission and display of information” (Rodriguez & Wilson, 2000). This agrees with the fact that ICT is a set of technologies that people use to share, distribute, gather information, and communicate through the means of computers and computer networks (Capron, 2000). Television and radio broadcasting, hardware and software, computer services and electronic media can be referred to as a complex varied set of goods, applications and services people use for producing, distributing, processing and transforming information to achieve the desired goal of ICT (Marcelle, 2000). ICT represents a cluster of associated technologies defined by their functional usage in information access and communication, of which one embodiment is the Internet. The dynamic development of ICT is an indispensable tool in developing knowledge-based society that fosters its basic feature in permanent education, also known as lifelong learning.

The application of ICT in the educational system by academic researchers emerged in 1980s; however, the concept became commonly used when Dennis Stevenson used it in his report addressed to the Government of the United Kingdom and propagated by subsequent documents on education (Wajszczyk, 2014). ICT comprises pieces of equipment, networked infrastructure and the associated knowledge and the skills for creating, manipulating, transferring and using information or knowledge.

**Home Economics Education:** The concept of Home Economics Education as a discipline has received a considerable attention by home economists to conceptualize its meaning in the educational system. Numerous definitions have been proffered, pointing out its role in the educational sector as a discipline. According to International Federation for Home Economics (2008), Home Economics Education is defined as a “field of study and a profession situated in the human sciences that draws from a range of disciplines to achieve optimal and sustainable living for individuals, families and communities”. Scholars like Pendergast (2009) and McGregor (2010) viewed Home Economics as a scientific field that pays attention to human activity. These human activities
include: textile design, fashion design, interior design, clothing, food and beverage production and service.

Gamawa (2015) defined Home Economics Education as “a means through which young people and adult may be led to a stronger growth and development, thereby enabling him/her to take responsibilities in the home, and the society”. Home Economics, as a field of education, has been advanced for teaching household skills alone towards a community development approach as well as equipping the students with management skills for small and medium entrepreneurship (Syed & Akhter, 2018). Home Economics Education channels the hitherto unrecorded efforts of women into mainstream human activities. According to Renwick (2015), the role of Home Economics is well-recognized as an effective drive towards women’s inclusion in significant socio-political activities. Food and nutrition, clothing and textile, home management, child development and interior decoration are major areas of specialization or branches of Home Economics Education.

Theoretical Framework

The theoretical framework adopted for this study is called Social Learning theory. The theory was propounded by Bandura in 1962 and it was later advanced or modified in 1971. The theory is viewed as an inner motivational factor and countered the general assumption that learning represents a change in behaviour. Bandura (1971) outlines three requirements for people to learn and model behaviour: retention (remembering what one observed), reproduction (the ability to reproduce the behaviour), and motivation (good reason that one wants to adopt the behaviour). The theory includes other cognitive elements that enhance intrinsic reinforcement through such motivation is achieved: a sense of pride, satisfaction, and accomplishment. The theory emphasized the need for both families and teachers to promote the child’s self-efficacy which is important in achieving educational pursuit. Self-efficacy is a person’s belief in his or her ability to succeed in a particular situation; and it has a powerful influence on how people think, feel and behave. In this context, the theory is relevant to this study because it sets up practical procedures that combine reinforcement, modelling, and manipulation of situational cues that will eliminate fear of failure in students and teachers of Home Economics Education and increase their adoption of socially acceptable responses. The theory will help both teachers and students to use ICT as an
intrinsic reinforcement in achieving educational performance in Home Economics Education as a sense of pride, satisfaction and accomplishment.

**Methodological Approach**
The research method adopted for this study is qualitative method. Secondary method of data collection was employed by the researcher. The secondary data were obtained via personal library, online library and internet web sites. The historical, expository, interpretative and analytical methods were employed to analyze and examine the data collected for the study. The historical method was used to trace the integration of ICT into Nigerian educational system. The expository method was employed to expose the concepts of ICT, Home Economics Education as well as challenges confronting integration of ICT in teaching and learning of Home Economics Education in Nigeria. The analytical and interpretative methods were used to analyze and interpret the roles of ICT in Home Economics Education in Nigeria.

**ICT at a Glance in Nigerian Educational Sector**
The integration of ICT in the Nigerian educational system is relatively a new development. The quest for integration of Information Technology (IT) in Nigeria started in 1923 by initiating the use of telephone service. In 1950s the country experienced substantial expansion in IT with the introduction of VHF radio systems, 116 manual and five automatic telephone exchanges. Another significant development marked as the telecommunications arm of the Post and Telegraph Department and the Nigerian External Telecommunications Limited were merged in 1984 to single profit-oriented limited liability company called NITEL. This development boost the number of automatic switching centres in Nigeria that grew to 227 in 1986 (Ogunsola & Aboyade, 2005).

Remarkably, Nigeria took a bold step of implementing its ICT policy in April 2001 after the Federal Executive Council approved it by establishing the National Information Technology Development Agency (NITDA). The body was empowered and saddled with the responsibility of entering into strategic alliance and joint ventures to collaborate with the private sector to actualize the country’s vision as an IT country capable of being a key player in Africa as the information society by the year 2005 through the usage of IT engine to achieve sustainable development and global competitiveness (Agyeman, 2007).
The first attempt made by the Nigerian government to introduce computer education in schools was initiated in 1988 when the Nigerian government enacted a policy on computer education. The Nigerian government set out to establish pilot schools and circulate computer education innovation first to all public secondary and tertiary schools, and then to primary schools. Sadly to note, the project did not really take off beyond the distribution and installation of personal computers (Aduwa-Ogiegbaen & Iyamu, 2008). The year 2004 marked a historic development in introducing computer education into the Nigeria school curriculum. The Federal Government of Nigeria (2010) recognizes the prominent role of ICT in the modern world and its integration in the educational system. To this end, the government, therefore, was saddled with responsibility of providing basic infrastructure and training at the primary school. At the basic school, computer education was made as a pre-vocational elective as well as a vocational infrastructure and training for the integration of ICT in the school system.

It is important to note here strongly that the desired goal of ICT in the educational system is still at the lowest ebb. It was observed that the computer is not yet part of classroom technology in more than 90 percent of Nigerian public schools (Okebukola, 2007; Aduwa-Ogiegbaen & Iyamu, 2008). The traditional pedagogical method of teaching and learning process still dominates in the Nigerian educational system. The Nigerian government needs to step out to ensure that ICT gains its application in the educational system to enhance modern teaching and learning.

**Challenges of ICT in Teaching and Learning of Home Economics Education in Nigeria**

Teaching of Home Economics Education, especially in Nigeria, is a demanding task. However, the challenges confronting the teaching and learning of the subject across the globe appear to be the same. A number of challenges have been highlighted by scholars that constitute a hindrance to integrating ICT in teaching and learning of the subject; these include lack of time and tight timetable and curriculum; lack of accessibility of its facilities; paucity of teachers’ knowledge of the subject, lack of skills and positive attitude; poor role of leadership; lack of software; lack of hardware, Low level of ICT skills, among others (Pelgrum, 2001; Pelgrum & Law, 2003; Amedu, 2013; Amedu, 2014; Dauvarte, 2015; Limon, 2015). This implies that the Nigerian educational
sector does not have nearly enough hardware, peripherals, network technologies, and simultaneous internet access to technology use that will have an impact on the quality of instruction that would facilitate teaching and learning of Home Economics Education through ICT.

Ozoji (2003) argues that the attitude of school management and authorities towards procuring and installation of ICT devices has constituted a challenge to Nigerian schools especially at the secondary school level. Infrastructural deficiency, high cost of ICT equipment or inadequate telecommunication facilities were identified as additional formidable challenges that hinder the effective teaching and learning of Home Economics Education through ICT (Anao, 2003; Onyeadike, 2009; Amedu, 2013). To carry out an effective teaching and learning through ICT, regular and stable electricity supply is needed. Lack of these basic infrastructures to power and run ICT equipment hamper the role ICT plays in transforming modern teaching of Home Economics Education. Most schools lack the necessary capacity or capital to put a standby power generating plant to tackle the challenge of lack of public power supply. Amedu (2014) observes that most educational instructors lack the knowledge and skills to fully utilize ICT in curriculum implementation; hence the traditional chalk-and-duster approach still dominates the Nigerian educational sector.

**Linking the Role of ICT to Home Economics Education in Nigeria**

The high level of utilization of technological information in recent times has influenced the context of Information Society; this has become imperative for educationalists to adopt a new environment of teaching and learning process. The integration of ICT in teaching and learning process in Home Economics Education serves as a mediator tool of learning as a component of the learning environment that would lead to high academic performance in Nigerian contemporary society. Nwigbo and Madhu (2016) view ICT as an indispensable tool for achieving academic performance and, therefore, emphasized the inclusion of intra-school networks, inter-school networks and external networks (internet) in schools.

ICT plays a role of offering possibilities of transforming the teaching and learning paradigm and bringing about desired knowledge to teachers and students. In this perspective, ICT serves as a great potential to support lifelong teaching and learning for all groups of students. The role of ICT in an academic
environment or beyond can contribute to enhancing independence, integration, and equal opportunities to students in the advanced countries. Murchu and Freeman (2003) argue that ICT challenges teachers to embrace change, stressing that computer literacy has become an essential skill requirement for students in the modern world and, as such, teachers must accept and welcome this development.

It can be argued here that ICT will challenge teachers of Home Economics Education to develop more child-centred, participatory, and active teaching approaches that are relevant to teaching and learning process that will benefit the students. Creating this educational learning setting within the classroom is pivotal to teachers as a necessary tool to apply new approaches and methods, and to acquire specific technological skills in imparting Home Economics knowledge and skills to the learner. Mugliett (2009) believes that ICT has a role to play in the practice of active methodologies which would enhance the teaching of Home Economics Education. Relatively, Lewis and Ogilvie (2002) maintain that the use of ICT enhances professional development and the effectiveness of teaching students in all ramifications.

Adopting e-learning strategy will contribute to the provision knowledge and skills in Home Economics Education to all categories of learners who have special interest in the discipline. Driscoll (2002) maintains that e-learning is viewed as an umbrella term for a range of technologies involved in the process of design, delivery and management of instruction or training using computers. E-learning can be defined as delivery of learning, training or education programme by electronic means. This includes using electronic applications and processes to learn. It is a form of education where the medium of instruction is computer technology that supports resources that are available through a computer (Moursund, 2005).

European Commission (2001) argues that e-learning improves the quality of learning through access to resources and services as well as remote exchanges and collaboration. This is relevant in this discourse. It is important to note that e-learning provides means to educational methods that incorporate a structured educational experience, involving both teaching and learning (Schkudlara, 2008). Garrison and Anderson (2003) argue that e-learning provides access to online network technologies to build on the potential for communication and interaction. In this respect e-learning serves as educational driver in Home Economics Education to enable independent learning process. The learner is
given access to courses with activities and resources personalised according to the learner. E-learning has the capacity to generate new knowledge as well as to find innovative ways to utilize the knowledge generated to advance development in all aspects of Home Economics Education. One of the aims of formal educational system is to help “student develop an increasing level of expertise as independent, self-responsible, self-sufficient, intrinsically motivated learner” (Moursund, 2005). This is easily achieved through the e-learning process by the use of processes and technologies to create, distribute, manage and enable learning via electronic network.

ICT facilitates in-service training for teachers of Home Economics Education through e-learning known as distance learning via correspondence courses on internet services. This platform provides opportunity for teachers to enrol for refresher courses to equip them for effective teaching of the subject without necessarily taking study leave. This is done effectively through an interactive two-way audio and video being made available on the web, and being supplemented by email, chat rooms, web-based. It is important to note that ICT opportunities have stimulated the emergence of some new methods, new teaching materials and even new ways of learning, such as learning CDs and DVDs, electronic books, test developing programmes, e-learning and integrated collaboration environment in accomplishing effective teaching and learning of Home Economics Education.

The role of ICT in the learning process has to be achieved through teachers’ ICT knowledge and skills acquisition to achieve its functions as a tool and creator in the learning environment. Home Economics Education teachers have some roles to play by first having computer literacy knowledge; this will help them to use ICT in preparing their lessons, as well as integrating it in the classroom. The teacher’s pedagogical knowledge is of importance in this respect. The teacher needs to pay attention to these fundamental aspects for his/her competent to be enforced in ICT educational process.

Scholars like Alexander (1999), Jonassen, Peck, & Wilson (1999) and Jonassen (1999) argue that the role of ICT in an academic environment is to serve as a facilitator of active learning and higher-order thinking. By active learning, ICT provides access to an abundance of information using multiple information resources and viewing information from multiple perspectives that foster the authenticity of learning environments. By higher-order thinking, ICT fosters co-operative learning and reflection about the content of information. Mooij (1999)
and Smeets & Mooij (2001) stress the role of ICT as a tool to curriculum differentiation that provide opportunities for adapting the learning content and tasks to the needs and capabilities of each individual student and by providing tailored feedback. These roles of ICT highlighted above are relevant in teaching and learning of Home Economics Education. Taking decisive steps to implement this at personal level is cardinal for achieving academic performance and skill acquisition in Home Economics Education.

ICT plays the role of visual aids that facilitate better teaching and learning process in achieving academic success. For instance, an overhead projector is used to project and enlarge an image contained on a transparent sheet onto a remote screen for easy viewing. This tool helps educators to facilitate an easy low-cost interactive environment. The overhead projector is placed at a comfortable writing height for the teacher; with this, the teacher can face the class for a better communication between the learner and teacher as it enables the teachers to face the whole class and maintain eye contact at all times to the learners instead of having to turn around and write.

Dislere (2012) stresses the necessity of using ICT in teaching Home Economics Education, in order to modernize and expand learning opportunities through e-environment options. ICT competences are included in professional competences of the Home Economics Education teacher which include: use of pedagogical technical elements and competent in the use of ICT. The ICT offers fundamental clues to learners how to improve in cooking, sewed clothing manufacturing, material handling (including textile works), composition, woodworking and metalworking, electrical appliance and motor vehicle operation, technical graphics, consumer education such as housing, food, clothing, safety, family finance, advertising, shopping art. Specialized software called WinKnit or Aran Paint can be used for developing knitting schemes; the programme PrimaVision Knit can be useful in creating one’s virtual knitted handicraft visualization; the programme EBA, Pattren CAD or Grafis are also useful in construction of main patterns for women’s garment for upper or whole body. DB Weave, WeavePoint or BeadsWicker could be used for developing weaving products’ schemes while the programme Astron Design is used for furnishing virtual space; embroidery schemes can be made in the programme Stitch Art Easy or Adobe Photo Shop.

From the foregoing, it is obvious to point out that ICT enhances the quality of teaching and learning in Home Economics Education in several ways: by
increasing both the teachers’ and students’ motivation and engagement, facilitating the acquisition of basic skills, and by facilitating teacher’s training. As a transformational tool, ICT when used appropriately can promote a learner centred environment. ICT (computers and internet technologies) can enable new ways of teaching and learning rather than simply allow teachers and students to do what they have done before in a better way. ICT such as videos, television and multimedia computer software that combine text, sound, and colourful moving images can be used to provide challenging and authentic content that will engage the student in the learning process in Home Economics Education to watch and listen and therefore, become more involved in the lessons being delivered.

Conclusion
This study presents useful insights on how ICT can contribute to the effective teaching and learning of Home Economics Education in the modern and technological society to advance holistic development. The integration of ICT in teaching and learning of Home Economics Education helps both teachers and learners to acquire the knowledge and skills to meet up with the challenges of education in an information - based society. The study highlighted some of the challenges confronting the integration of ICT in teaching and learning of Home Economics Education in the country. The study established some of the fundamental roles ICT plays in enhancing academic performance and skill acquisition in Home Economics Education. Due to high value of ICT in the educational system, it is quite imperative for Nigerian government to replace the traditional pedagogical practices with ICT to underpin its educational system. In order for this goal the country needs ICT as vibrant tool of teaching and learning in Home Economics Education in the country.

Recommendations
Based on the above findings, following recommendations were made to actualize the integration of ICT in teaching and learning of Home Economics Education in Nigeria:

1. The Government should provide ICT equipment to all public schools from primary to tertiary levels of education in the country.
2. Non-Governmental Organization and the host communities should complement government efforts by building structures that will serve as
ICT centres in schools as well as purchase ICT software applications in Home Economics Education.

3. Home Economics Education teachers should be trained how to use ICT to deliver their lessons. ICT in-service training is imperative in this regards.

4. Parents should provide basic ICT tools to their children to enhance effective learning of Home Economics Education.

5. School managers should provide standby electricity plant in the school environment to facilitate application of ICT by both teachers and students.

References


