

# **INFORMATION AND COMMUNICATION TECHNOLOGY (ICT): A NECESSARY TOOL FOR FOOD AND NUTRITION EDUCATION ISSUES AND CHALLENGES**

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## **Abstract**

The paper focuses on ICT as a necessary tool for food and Nutrition education. The concepts of ICT and food and Nutrition were clarified. The various areas of ICT impactation was looked at. The use of ICT in achieving food and Nutrition education, importance of ICT and the challenges were extensively discussed. Recommendations were proffered to cushion the challenges.

## **Introduction**

Education is facing a great challenge in this era of Information and Communication Technology (ICT), Handling of information has grown rapidly and has become alarming. Agbanu (2003) asserted that the world is witnessing an expansion in the way people communicate, do business and perform other office duties. ICT is quite a new concept and is still confusing to many people as Ekpenyong and Nwabuisi (2002) pointed out that transactions are likely to get more complex than they are and only those who keep pace with technology would survive and cope in the world of work.

Nowadays, Information and Communication Technology has reduced the workload of the teacher drastically. The use of the chalkboard is gradually giving way to technological devices through the computer e-learning, Internet etc.

The methods used in the teaching and learning of food and Nutrition in our schools include demonstration method, role-playing problem solving, field trip, social drama brainstorming, questioning etc. Some of these methods can be used in a classroom situation but with the introduction of ICT, learning through some of them cannot be used. To be vast in any field of education in this ICT era, one has to face the challenges and use the latest knowledge to solve current problem thereby addressing contemporary issues positively in an acceptable and current manner (Olurankinse 2007)

ICT has become a sine-quo-non in the realm of affairs in this dispensation. The major characteristics of the introduction of ICT is the increasing understanding of the possibilities it has for more effective communication of information and the scope it allows for greater variety and flexibility of teaching and learning. It then means that ICT has tremendous potential to enhance knowledge (Essen 2001). ICT is simply defined to include all information-handling tools of a varied set of goods, applications and services that are used to produce, store process distribute and exchange information. (Bonn 1999). He continued that ICT would also include the use of communication satellites, e-mail, radio, television, digital/analog, telephone, and personal computer. ICT includes Internet and the information super highway. All these are globalization agents, which are transferring our world into a global village where boundaries have collapsed. ICT is becoming more pronounced worldwide such that nothing is mentioned in any area of human endeavour without reference made to technology. This paper therefore tends to examine ICT as a necessary tool for the effective teaching and learning of Food and Nutrition in our Educational system.

## **Information and Communication Technology**

This is an umbrella term that includes any communication device encompassing radio, television, cellular phones computers and network, hardware and software satellite system etc. as well as the various services associated with them, which include video conferencing and distance learning

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(Echezona 2008). ICT according to Olurankinse (2007) is the means of learning through electrical and electronic hardware as well as electronic computing software. She also maintained that ICT includes learning through the Internet, web and global systems of mobile communication. (GSM) Information literacy is very important for every one as it equips people with skill to access, decode and use information. Akintude (2001) emphasized the use of ICT such as telephone, internet, teleconference, audio visual materials to process, transport, disseminate and transfer voice and other data singularly or mixed with least interference or distribution of content.

ICT has been the greatest agent of dynamic change in our society in this century. It is imparting and changing aspect of human endeavours and specialization communication, commerce, manufacturing, services culture, entertainment, education etc.

ICT tools are very useful, versatile and indispensable. Mukoro and Okurumeh (2007) listed out some ICT tools to include

- Printed media (Newspaper, books, journal magazines)
- Computers
- Telephones
- Communication Network
- E-mail
- Electronic media (Radio, television, videos films)
- Telex
- Satellite
- Internet

### **Food and Nutrition**

Nutrition is the study of food. It includes everything that happens to food from the time it is eaten to when it performs its functions in the body. Anyakoha & Eluwa (1991) sees food as any substance which when taken into the digestive tract, provides nourishment of the body. Food is seen as any substance solid or liquids when eaten and digested is able to perform its functions properly. Food and Nutrition refers to the act of utilization and absorption of food materials essentially protein, carbohydrate, fat and oil vitamins, mineral salt and water used in the body of an organism to sustain growth repair of vital tissues and furnish energy. Food and Nutrition as a subject deals with all aspects of food such as purchasing preparation, serving, preservation, chemical composition of food, functions of different food nutrients in the body, dieting, types and quantities of food nutrients required by all ages of people in their varying state of health conditions and level of activities.

Nutrition Education discourages the use of destructive food processing techniques and encourages the use of conservation methods of processing, cooking and serving meals. Nutrition education eradicates ignorance that increases malnutrition level in the developing countries.

### **Various Areas of ICT Impacts**

It is an established fact that ICT has great impact on the overall development and in many areas of human endeavour Ossai and Oladokun (2009) specified some of these areas to include.

#### **- Education.**

Education is no longer confined to instruction within the four walls of the classroom. A Nigerian student can in addition to his Nigerian curriculum be operating another curriculum outside the country. This is possible because he has access to the other countries course out line. The recommended books for the course can be downloaded.

### **Health**

This new communication Technology has shortened distances and eroded borders in tapping a global store of knowledge. Awareness of different ill health are available on the internet, consultation diagnosis and prescription can be done on line.

#### **- Communication links**

There are many aspects of the computerization in every day routine of individuals and families, which has made the use of computer very important in the lives of people. Within the past decade, the increased awareness in the use of computer for information and communication have attracted much attention. Globalization has accelerated; advancement in communication and technologies in areas such as computer, internet, mobile phones, television and the satellite dish has also accelerated. These modern technologies have the abilities of connecting people culturally, economically and socially strengthening the relationship that exist amongst them.

#### **- Money Transfers**

Money is easily transferred through this modern technology especially in the area of commerce and trading by reducing the time spent, face-to-face interaction, long distant travel and the risk of carrying money across towns and borders for national and international trade. Today money is paid for goods and services through electronic money transfer making transactions faster, easier and safer.

#### **- Internet Access**

All forms of technology are easily accessible from the Internet. Students can get whatever materials they want from the Internet. Information about food and Nutrition, Home Economics and other related areas can be retrieved from the Internet.

### **The use of Information and Communication Technology in food & Nutrition Education**

In order to make dissemination of information easier for the teacher of food and Nutrition, information and communication technology gadgets are used to record, direct, lead and teach students in learning specific concepts. Information and communication devices make learning in food and Nutrition interesting, fascinating, effective, efficient exciting and explorative.

### **ICT are Used for the Following**

- Used to perform nutritional analysis
- Imaging – using a digital camera to record the states in the production of bread making, cake making and decorations
- Performing researches e.g questionnaires design, analysis of data
- Writing a recipe etc.

Information and communication technology devices include

### **Radio**

The Radio is an audio aid, which could be electronically operated and can also be operated with battery. It is an instructional material used to convey information and learning experiences by sound to the students. Information on radio cannot be seen but can be heard. The radio could present concepts such as food, preservation methods, shopping tips, good food habits, healthy living etc. The presentation is recorded and played at the station for public enlightenment. A nutritionist may serve as

a resource person. This is not for students in the school alone, but for every body listening to the programme. Questions were not being entertained in the past but with the advent of Global system of mobile communication (GSM), listeners can ask questions and they get their answers. The Radio can be used to present nutritional problems such as food taboos, food fads, food fallacies, protein calorie malnutrition such as kwashiorkor, and marasmus. The Radio can also be used to give information on research findings e.g plant protein (soya beans), which is as good as Animal protein (meat, fish, chicken, crayfish etc).

### **Television.**

The television is an electronic audio – visual and for teaching and learning. The information being carried is seen visually and also heard which makes learning very interesting. Practical lessons in food and Nutrition can be taught over the television with the expertise of the teacher as the director such practical lessons include cookery, meal service styles, family Reciepes, Bread making, Cake making. The instructions are taken step by step while the viewers watch. Olaitan and Agusuobo (1991) viewed the television as a means used to generate information about learning experience at every stage of the lesson and to produce a co-ordinated, integrated whole.

### **Computer System**

Information about Nutrition can be gotten from computer. The information on the software can be followed to design local presentations for use in the classroom. One can download nutrition information from web sites on the Internet. Whitney, Cataldo and Rolfes (1991) revealed that Nutrition Researchers have developed ‘Thinking’ a computer programme that provides a nutrition care plan based on the client’s history, life style habits, laboratory test result and family history. According to Nwosu (2006), the computer system has proved to be a vital electronic resources for intellectual enhancement. Snyder and Tadesse (1995) assented that Internet service have made communication easier. With this, the food Nutritionist can share knowledge across boarders and obtain needed information of other parts of the world to enhance learning and teaching of the course.

The computer can be used to carry out many mathematical calculations required in assessing the Nutritional status of people. Mkpughe (2009) listed the functions of the computers to include

- Diet Analysis programme that is designing diets and comparing them with the specification of the diet order
- Use in food service department to store reciepe, calculate the number of meals and amount of food to prepare print menus, maintain a current inventory and generate orders according to predicted needs.
- They can combine the menu file from food service department with specific diet orders to generate a list of food options for each diet.
- The computer provides shopping information on how to read food labels, determine unit price, plan meals and reduce wastage.
- It assists dieticians in their duties by selecting alternative feeding programmes for their client.

### **Internet**

No amount of investment can bring succour to Nutrition Education, unless through the ICT. Nowadays, a member of the family has mobile telephone service (MTS) and personal computers with full access to the Internet network. According to Njoku (2007) the information that brings about breakthrough in research comes from the web in the present world because any information that is valuable is uploaded in the Internet almost instantly. The web provides the teacher and student with an

***Information and Communication Technology (ICT): A Necessary Tool for Food and Nutrition Education  
Issues and Challenges***

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amazing source of world-class current data. The Internet enhances both the teacher and students to purchase relevant resource books and students will have access to unlimited literature and reference materials.

**The Internet Bought About**

- a. The online programming study
- b. The chats internet study
- c. The E-mail Internet study.

**Importance of ICT for Food & Nutrition Education**

1. ICT aid Food and Nutrition teacher to handle a high population of student and help them receive instructions whenever they are located.
2. It creates a flexible learning environment where students are free to learn what they want.
3. ICT would make institutions in our country Nigeria where food and Nutrition is offered meet up with world standard.
4. It allows data to be accessed by more than one person at a time
5. It enhances the employment of few staff.
6. It enables the teacher achieve his set objectives is the shortest possible time
7. It enhances a better quality experience for both the teacher and student.
8. It increases the rate of dissemination of information to the students.

**The Challenges**

1. **Inadequate power supply**  
One of the major challenge that Nigerians are faced with is inadequate power supply. The computer has to make use of electrical power to perform. Computers work effectively and efficiently on a very conducive atmosphere where there are air-conditioners. Since we do not have this electrical power always, using ICT without adequate arrangement for regular supply is a big mirage.
2. **Lack of adequate trained manpower.**  
Every ICT project has its own appropriate programme and language of documentation. The information stored in the system can be taken out when it is needed. This requires the knowledge of an expert without which storage or retrieval will be difficult.
3. **Capital Intensive**  
ICT installation of Internet and other accessories and their maintenance require huge amount of money. The purchase and installation of computers may not be possible where huge capital is not available.
4. **Lack of computers in our food laboratory**  
Mast food laboratories do not have computers where students and teachers can access. Most schools prefer to build labs and equip it with Gas and electric burns without seeing the need for computers.

**Recommendations**

1. ICT is the in thing now. The government should find lasting solution to the problem of power supply.
2. Food and Nutrition teachers should be vast in ICT so as to impact the knowledge of their students

3. ICT devices should be made available to schools by the Government and Non Governmental Organizations (NGO)
4. Food and Nutrition curriculum should be designed to include courses in computer and the use of computer programmes like power point to present topics during seminar presentation and microteachings.

### **Conclusion**

ICT has been discussed as a necessary tool for Food and Nutrition Education. For food and Nutrition teachers and students to move on with this they must keep abreast with information from all the devices of learning to make it interesting, fascinating, effective less tiring exciting and explorative.

ICT media instructions are delivered in a well-tested and reliable fashion that does not vary in quality from one student to another. Through the use of ICT the teaching of food and Nutrition would prove more cost effective and information made accessible to a large number of people who cannot be catered for within the conventional education system. ICT devices will help the Nutrition Educationist get things done easier and faster.

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***Information and Communication Technology (ICT): A Necessary Tool for Food and Nutrition Education  
Issues and Challenges***

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