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# Factors Affecting Students' Accessibility and Utilization of ICT in Home Economics Education in University of Calabar

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**ABSTRACT:** ***This study empirically focused on factors affecting students' accessibility and utilization of ICT in Home Economics Education in University of Calabar. To achieve the aim of this study, two specific objectives, two research questions and two hypotheses were formulated. The paper adopted descriptive survey design. The population for the study was 223 Home Economics students from three academic session of which 143 was sampled using stratified sampling method. A structured 4-point rating scale questionnaire which was duly validated by two experts in the field was used to collect data from the study. Data generated were analyzed using simple percentage while the two hypotheses were tested using Spearman's Rank Correlation Coefficient analysis at .05 level of significance. Findings showed that all the eight items of the questionnaire were factors affecting students' accessibility and utilization of ICT in Home Economics Education in University of Calabar. Based on the findings, it was recommended among others that both lectures and students should provide a written report on how they have accessed and utilized computer and encouraging students to share their experiences in class as well as publishing the benefits of computer.***

***Keywords*****:** *Factors, Students' Accessibility, Utilization, ICT, Home Economics Education*

## 1. Introduction

The prominence of Information and Communication Technology (ICT) in teaching and learning is rapidly becoming one of the most important and widely discussed issues in contemporary Home Economics Education. Most experts in the field of Home Economics agreed that, when properly used, ICT hold great promise to improve learning in addition to shaping workforce opportunities and students' performance. ICT occupy a central position in today's global environment. This is evidenced from the fact that in an information age, the competitiveness of an individual, organization, manipulation, accessibility and utilization of accurate information to increase the cost effectiveness of many activities (Okute, Olom, & Ewuru, 2016).

Poole in Aduwa-Ogiegbaen and Iyamu (2005) has indicated that computer illiteracy is now regarded as the new illiteracy. This has actually gingered a new and strong desire to equip schools with computer facilities and qualified personal necessary to produce technologically proficient and efficient students in developed countries of the world. There is no doubt that computer can aid the instructional process and facilitate students' learning. Many studies have found positive effect associated with technology aided instruction (Adesote & Fatoki, 2013).

ICT improves the quality of education of a nation and educational development depends on the extent to which an institution of learning utilizes ICT facilities (Adesote & Fatoki, 2013). The accessibility and utilization of ICT is quite alluring not only in Home Economics programme because of its cost advantage over the traditional or conventional classroom instruction method but also for its convenience, standardized and self-placed learning (Idam & Raphael, 2017). Therefore, it is important to understand what ICT is, its various facilities to be accessed and utilized in education, and how it enhances Home Economics Education. There is universal recognition of the need to use Information and Communication Technology (ICT) in education as we enter the era of globalization where the free flow of information via satellite and the internet holds way in global information dissemination of knowledge. Already, Nigeria is on the wrong side of the international digital gab, as it has not made significant effort to integrate ICT into Home Economics Curriculum (Chiaha, Eze & Ezeudu, 2013). A great deal of instructional and administrative work in Home Economics Education in University of Calabar is still carried out manually.

Information and Communication Technology (ICT) deals with the handling and processing of information using all kind of electronic devices, ICT is a revolution that involves the use of computers, internet and other telecommunication technology in every aspect of human endeavours. It is also the handling and processing of information for use by means of electronics and communication devise such as computers, cameras, telephone, and others (Gamawa, 2015).

In today's world, not only are we surrounded by technology, but our primary means of reaching others in far and near places are mediated by technology. According to Mohamad, Irfanillah, Saraj, Hafiz, Rafid and Rahimullah (2015), ICT is an interactive material that can be used for a wide range of teaching and learning as well as personal use. There is no doubt that one of today's realities is an extremely fast development of high-technology. This has resulted in a huge change of the individual's life in learning (Adesote & Fatoki, 2013).

There is strong need to know and use modern technology in our social life, the economy, the business and education. New and sophisticated breakthrough in high technology encourages institutions of learning to introduce technological innovations rapidly into their academic system. If Home Economics Education must be part of developed professions in the world in the near future, it must embrace ICT and discard some of the old ways of doing things and perspectives as well as retool completely. Consequent upon the above, there is need for the profession to re-strategize and expand its vision so as to cope with the challenges of a technological/ICT society.

However, it has been observed that despite the role of ICT for students in improving their knowledge in learning, students are still ineffective acquiring knowledge, they lack ICT skills needed. Majority of students in Home Economics do not have fundamental knowledge of ICT skills, thus cannot harness the numerous benefits ICT offers. This is invariably jeopardizing the fundamental objectives of Home Economics Education, vision, mission and policy as stated in National Policy of Education (FRN, 2004).

There are many factors affecting classroom use of ICT in Home Economics Education. These factors ranging from high cost of computer, weak infrastructure, lack of skills, lack of relevant computer hardware and software, ICT phobia, inability to purchase internet subscriptions, to absence of ICT facilities in the classroom on the operation of ICT accessibility of students, another factor is inability of students to learn on the operation of the ICT facilities (Gamawa, 2015).

Aduwa-Ogiebaen and Iyam (2005) also identified the major obstacles militating against the use of ICT in Home Economics Education in University of Calabar to include high cost of computer hardware and software; weak infrastructure, lack of human skills and knowledge in ICT, lack of relevant software appropriate and culturally suitable to University of Calabar as the major stumbling block or the adoption of ICT in Home Economics Education in University of Calabar. Aduwa-Ogiegbaen and Iyam (2005) findings noted that schools in Nigeria are not given adequate funds to provide furniture, relevant textbooks and adequate classrooms. The cost of subscribing to the internet is too high for many of the impoverished schools in Nigeria. In modern society, Nigeria needs ICT to aid teaching, learning and educational management. ICT is an instrument for the economic and technological development in the 21st century; therefore, Nigeria cannot afford to be the wrong side of ICT adoption.

However, the factors that affect the use of ICT also includes: sex, family wealth index, access to ICT and ignorance. Gamawa (2015) noted that males are more likely to confront ICT challenges than their female counterparts. Family wealth index in terms of availability of money determines the possession of ICT, students being allowed to use ICT if available and inability to know the relevance of ICT militates against its utilization. ICT is increasingly playing an important role in educational sectors and in society's ability to produce, access, adopt and apply information. ICT application will prove beneficial in improving educational system and giving students a better education.

The utilization of ICT by students in University of Calabar has been more of a departmental affairs rather than just institutional affairs. According to Ugwu and Ohimekpan (2015), these departments are in Sciences, Medical and Computer Sciences where the synergy between research and teaching is strongest and the essential infrastructure for course development and delivery are most accessible in Agricultural Education, there is also an inclusion of Home Economics because it looks at food and plant as well crops (Iyam, Ogar & Eteng, 2016). All of these need the utilization of ICT. The collective and rigid nature of learning and the passive nature of the learning associated with the use of radio, television and film do not contribute any innovative changes to traditional methods in education system.

Information and Communication Technologies are being used in the developed world for instructional functions. Today, computers perform a host of functions in teaching and learning as many nations are adding computer literacy, reading and writing literacy as skills students will need for succeeding in a technologically developed world (Azubuike & Ozioma, 2012). At the instructional level, computers are used by Agricultural and Home Economics students to learn, Mathematics, Social studies, Art, Music, simulation and health practices. ICT is

also directed to knowledge acquisition skills development in the Language, Arts, History, Physics, Literature, Biology and so on.

Teaching and learning has gone beyond the teacher standing in front of a group of students and disseminating information to them without the students' adequate participation (Ugwu & Ohimekpan, 2015). There has been a steady decline in government's budgetary allocation to education over the past. The greatest challenge to the State and Federal government is to ensure that budgets cuts resulting from dwindling revenue and the need to satisfy other sectors of the economy which adversely affect education. For this study, factors affecting students' accessibility is measured based on high cost of computer; weak infrastructure, lack of skills, lack of relevant software/hardware, and limited access to internet. High cost of computer: The price of computer hardware and software continues to drop in most developed countries, but in developing countries, such as Nigeria, the cost of computers is several times more expensive. While a personal computer may cost less than a month's wages in the Unite State, the average Nigeria worker may require more than two years' income to buy one. Majority of Nigerian schools are short of books, papers, pens and pencils. Many of the schools lack adequate infrastructure such as classrooms and only few are equipped with television or radio (Gamawa, 2015). Apart from the basic computers themselves, other high costs associated with peripherals such as printers, monitors, paper modem, extra disk drives are beyond the reach of most schools in Nigeria. The schools cannot also afford the exorbitant internet connection fees. Ibet and Udida (2017) noted that, the high cost of computers and learning aids ownership as a major constraint to acquisition of the items. Access to affordable and reliable internet connectivity is only available in few institutions.

Akpinar (2010) in his study found that 50 percent of teachers do not use the computer to support teaching in educational process. Akpinar (2010) noted that majority of teachers in Home Economics use traditional methods to cope with the learning problems of students rather than the computer-based teaching methods. Ibet and Udida (2017) pointed out that teachers have positive attitude towards the use of computer, they cannot use computer at the desired level consequent upon the above, and the utilization of computer is very high in American school. Thus, it is expected that all teachers including Home Economics teachers might be able to integrate computer-based instructional studies into their teaching. Even then, power fluctuations have considerably reduced the reliability of the access and inadequate bandwidth also makes access difficult.

It is quite disheartening that despite the efforts of government in ensuring the provision of ICT tools in Home Economics to enhance learning, these facilities are allowing to get damage due to inadequate accessibility and utilization persist. No wonder Iyam, Obiyai and Ogeibiri (2016) pointed out that, computer acquisition and use is an important aspect of learning process. If a student is to learn effectively, and meet the challenges of the 21st century, the student learning process must make adequate provision output. For Home Economics students to meet up with the demands of the global world, they must be dynamic to innovations in the educational system. This will enable Home Economics subjects to achieve the objective for which it was established.

Weak infrastructure: In University of Calabar, a formidable obstacle to the use of information and communication technology is infrastructure deficiencies. Computer equipment was made to function with other infrastructure such as electricity under controlled conditions. For the past fifteen years University of Calabar has been having difficulty providing stable and reliable electricity supply to every nook and cranny of the campus without success. Currently, there is no part of the campus, which can boast of electricity supply for 24 hours a day except probably facilities where generators are used. There have been cases whereby expensive household appliances such as refrigerators, deep freezers and cookers have been damaged by upsurge in electricity supply after a period of power outage. Electronics equipment such as radios, televisions, video recorders and even computers has been damaged due to irregular power supply. When electricity supply is not stable and constant, it is difficult to keep high-tech equipment such as computers functioning, especially under extreme weather conditions as obtained in Nigeria. The High levels of dust during the dry season in Nigeria also make electronic equipment to have short live span.

Lack of skills: Students does not only lack information infrastructure, they also lacked the human skills and knowledge to fully integrate ICT into Home Economics education. To use Information and Communication Technology (ICT) in schools, the need for locally trained workers to install, maintain and support these systems cannot be over emphasized. There is cute shortage of trained personnel in application software, operating systems, network administration and local technicians to services and repair computer facilities. Those who are designated to use computers in Nigeria do not receive adequate training, at worst; do not receive any training at all. In Nigeria also, most school teachers lack the skills to fully accessed and utilize technology in curriculum implementation. Hence, the traditional chalk and duster approach still dominates in school pedagogy. Information transfer using ICT is minimal or non-existence in schools in Nigeria. Consequent upon the above,

Home Economics teachers in Nigeria need to be trained on educational technologies and the integration of computers into classroom teaching. Teachers need effective tools, techniques, and assistance that can help them develop computer-based projects and activities especially designed to raise the level of teaching in required subjects and improve student learning (Obiyai & Ogeibiri, 2016).

Lack of relevant software: There is no doubt that the ultimate power of technology is the content and the communication. Though, software developers and publishers in the developed Countries have been trying for long to develop software and multimedia that have universal application, due to the differences in education standards and requirements, these products do not integrate into curriculum across countries. Software that is appropriate and culturally suitable to the Nigerian education system is in short supply. There is a great discrepancy between relevant software supply and demand in developing countries like Nigeria (Ehiametalor, 2008).

There are clear indications from many countries that the supply of relevant and appropriate software is a major bottleneck obstructing wider application of the computer. Even if Nigeria tries to approach this software that would suit its educational philosophies, there are two major problems to be encountered. First, the cost of producing relevant software for the country's educational system is enormous. Second, there is dearth of qualified computer software designers in the country. Consequent upon the above, people need to be trained in instructional design.

Limited access to the internet: In University of Calabar there are few internet providers that provide internet gateway services to students. Such internet providers are made up of students who are in partnership with foreign information and communication companies. Many of these companies provide poor services to customers who are often exploited and defrauded. The few reputable companies, which render reliable services, charged high fees thus limiting access to the use of the internet. The greatest technological challenge in University of Calabar is how to establish reliable cost effective internet connectivity.

Schools in Nigeria are not given adequate funds to provide furniture, requisite books, laboratories and adequate classrooms, let alone being given adequate funds for high-tech equipment (computers) and internet connectivity. Nigeria is lagging behind where other African Countries such as Uganda, Senegal and South Africa who are already helping students in those countries to become better information users (Adesote & Fatoki, 2013). All internet service providers in Nigeria are based in the urban areas.
ICT skills needed by the students of Home Economics Education:

The role of technology in teaching and learning is rapidly becoming one of the most important and widely discussed issues in contemporary education policy. The focal point of Home Economics Education is to equip young people and adults with sustainable skills, relevant knowledge and attitudes for work in chosen occupation and career opportunity. In 2004 the federal government of Nigeria in its national policy on education categorically spelt out the broad aims and objectives of Home Economics Education under vocational and technical education to include: to give training and impact the necessary skills, teaching to the production of craftsmen, fashion design, interior decoration, event planning and others skilled personnel who will be enterprising and self-reliant (Ugwu & Ohimekpan, 2015).

Home Economics Education can improve skills and competencies of families and individuals in a changing world, education and best practice in Home Economics includes gender quality, safe sanitation and water use, generation skills, sustainable household production and resources management as well as food production, nutrition skills and health (Iyam, Ogar & Eteng, 2016). However, the research intends to examine the factors affecting students' accessibility and utilization of ICT in Home Economics Education in University of Calabar.

## 2. Purpose of the Study

The major purpose of this study was to examine factors affecting students' accessibility and utilization of ICT in Home Economics Education in University of Calabar. The specific objectives were to examine

(a) the relationship between that exist between high cost of computer accessibility and utilization of ICT in Home Economics Education in University of Calabar,
(b) the relationship between weak infrastructure accessibility and utilization of ICT in Home Economics Education in University of Calabar.

The following research questions were raised and answered in the study:

(i) is there any significant relationship between computer accessibility and utilization of ICT in Home Economics Education in University of Calabar?
(ii) is there any significant relationship between weak infrastructure accessibility and utilization of ICT in Home Economics Education in University of Calabar?

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

$Ho^1$: High cost of computer accessibility has no significant relationship with utilization of ICT in Home Economics Education in University of Calabar.
$Ho^2$: Weak infrastructure accessibility has no significant relationship with utilization of ICT in Home Economics Education in University of Calabar.

## 3. Methodology

Descriptive survey design was adopted for the study. The study was conducted in University of Calabar and data were collected from students and lecturers in Home Economics Education. The population figure was obtained from the three (3) academic sessions. The population of the study however, was made up of 223 Home Economics students from the three (3) academic sessions (2017/2018, 2018/2019 and 2019/2020 session). A sample of 143 students were selected through randomization from each stratum was drawn from the three academic session as recorded by Oborah (2014). A structured questionnaire developed by the researcher titled "Factors Affecting Students' Accessibility and Utilization Questionnaire (FASAUQ) and containing eight questions items was designed from the relevant literature reviewed and used to collect data. The instrument was validated by two experts, one each from Business Education and Measurement and evaluation in the Department of educational Foundation. The reliability coefficient was established using Cronbach Alpha which gives coefficient result 0.84. Two research assistants were used to distribute copies of the questionnaire. A four-point Likert scale of Strongly agree (SA), Agreed (A), Undecided (U), Disagreed (D) and Strongly disagreed (SD) were written against each items with a corresponding value of 4, 3, 2 and 1, respectively. A null hypothesis was rejected if the calculated table is equal to or greater than the critical table value; otherwise, the null hypothesis was accepted. Simple percentage was used to analyze data generated while Spearman's Rank Correlation Coefficient Analysis was used to test hypotheses and analyze data generated.

## 4. Results

The results of the analysis are presented to the order of the research questions and hypotheses

### 4.1. Research question one

Is there any significant relationship between high cost of computer accessibility and utilization of ICT in Home Economics education in University of Calabar?

In response to research question one, Table 1 revealed the overall responses on high cost of computer accessibility and utilization of ICT in Home Economics education in University of Calabar. The table also revealed that, 88 (62 percent), 85 (59 percent) and 91 (64 percent) agreed and strongly agreed that high cost of computer accessibility relates with utilization of ICT in Home Economics education in University of Calabar. While 142 respondents representing 24.8 percent in aggregate responses were undecided. 81 respondents representing 14.2 percent in aggregate responses disagreed and strongly disagreed. This is presented in the table below.

**Table 1: Simple percentage on high cost of computer accessibility and utilization of Home Economics Education**

| S/N | Questionnaire items | Strongly agree/ Agree | | Undecided | | Disagree/ strongly disagree | | Total freq. |
|---|---|---|---|---|---|---|---|---|
| | | Freq. | % | Freq. | % | Freq. | % | |
| 1. | High cost of computer affects utilization of Home Economics students. | 88 | 62 | 37 | 26 | 18 | 12 | 143 |
| 2. | Students are not allowed to access and utilized computer. | 85 | 59 | 35 | 25 | 23 | 16 | 143 |
| 3. | Students often send and receive e-mails through the internet. | 85 | 59 | 41 | 29 | 17 | 12 | 143 |
| 4. | The utilization and accessibility of computer by students have been more of departmental affairs rather than just institutional affairs. | 91 | 64 | 29 | 20 | 23 | 16 | 143 |
| | Total | 349 | | 142 | | 81 | | 572 |

## 4.2 Research question two

Is there any significant relationship between weak infrastructure accessibility and utilization of ICT in Home Economics Education in University of Calabar?

**Table 2: Simple percentage on weak infrastructure accessibility and utilization of Home Economics Education**

| S/N | Questionnaire items | Strongly agreed/ Agreed | | Undecided | | Disagree/ strongly disagree | | Total freq. |
|---|---|---|---|---|---|---|---|---|
| | | Freq. | % | Freq. | % | Freq. | % | |
| 1. | Internet usage may cause students performance to dwindle. | 104 | 70 | 21 | 16 | 18 | 14 | 143 |
| 2. | The use and accessibility of software may affect students negatively. | 106 | 74 | 21 | 16 | 16 | 10 | 143 |
| 3. | The classroom atmosphere affects hardware usage and accessibility. | 100 | 66 | 25 | 20 | 18 | 14 | 143 |
| 4. | The type of CD-ROMs affects accessibility and utilization of home economics students. | 100 | 66 | 25 | 20 | 18 | 14 | 143 |
| | Total | 410 | | 93 | | 70 | | 572 |

In response to research question two, Table 2 shows that 70, 74, 66 and 66 percent of the respondents agreed and strongly agreed that weak infrastructure accessibility has significant relationship with utilization of ICT in Home Economics Education in University of Calabar. While 21, 25 and 25 respectively agreed and strongly agreed that weak infrastructure accessibility relationship with utilization of ICT in Home Economics Education in University of Calabar.

**Table 3: Correlation analysis showing the measure of relationship between high cost of computer accessibility and utilization of ICT in Home Economics Education**

| Variables | | Statistics | High cost of computer accessibility | Utilization of ICT |
|---|---|---|---|---|
| Spearman's rho | High cost of computer accessibility | Correlation coefficient | 1.000 | .643** |
| | | Sig. (2-tailed) | | .000 |
| | | N | 143 | 143 |
| | Utilization of ICT | Correlation coefficient | .643** | 1.000 |
| | | Sig. (2-tailed) | .000 | |
| | | N | 143 | 143 |

**. Correlation is significant at the 0.01 level (2-tailed).

Table 3 on the relationship between high cost of computer accessibility and Utilization of ICT showed that, the Spearman's Rank Correlation Coefficient (r) is 0.643**. This value is positive and relatively high implying that a strong direct relationship exists between high cost of computer accessibility and utilization of ICT. That is to say that the significant value/probability value (PV) is 0.0000 and is less than .05 significance level. Therefore, the researcher rejects the null hypothesis and concludes that high cost of computer accessibility has significant relationship with utilization of ICT in Home Economics.

**Table 4: Correlation analysis showing the relationship between weak infrastructure accessibility and utilization of ICT in Home Economics Education**

| Variables | | Statistics | Weak infrastructure accessibility | Utilization of ICT |
|---|---|---|---|---|
| Spearman's rho | weak infrastructure accessibility | Correlation coefficient | 1.000 | .577** |
| | | Sig. (2-tailed) | | .000 |
| | | N | 143 | 143 |
| | Utilization of ICT | Correlation coefficient | .577** | 1.000 |
| | | Sig. (2-tailed) | .000 | |
| | | N | 143 | 143 |

**. Correlation is significant at the 0.01 level (2-tailed).

Table 4 indicated on the measure of relationship between weak infrastructure accessibility and utilization of ICT shows that, the Spearman's Rank Correlation Coefficient (r) is 0.577**. This value is positive and moderate, implying that a moderate direct relationship exists between weak infrastructure accessibility and utilization of ICT. The significant value/probability value (PV) is 0.0000 and is less than 0.05 significance level. Therefore, the researcher rejects the null hypothesis and concludes that weak infrastructure accessibility has significant relationship with utilization of ICT in Home Economics in University of Calabar.

## 5. Findings

The findings of the study in relation to research question one and hypothesis one showed that high cost of computer accessibility has significant relationship with utilization of ICT in Home Economics in University of Calabar. The implication is that, the respondents used for this study are of the opinion that high cost of computer accessibility affect utilization of ICT in Home Economics education in University of Calabar.

The result of the finding is in line with the views of Ibet and Udida (2017) that high cost of computer accessibility has significant relationship with utilization of ICT in Home Economics. That high cost of computer associated with peripherals such as printers, monitors, paper modem, extra disk drives are beyond the reach of most schools in Nigeria. They also noted that high cost of computers and learning are reliable internet connectivity is only available in few institutions.

Research question two and hypothesis two showed that weak infrastructure accessibility has significant relationship with utilization of ICT in Home Economics in University of Calabar. This finding is in line with Gamawa (2015) that weak infrastructure has significant effect on utilization of ICT in Home Education. That Home Economics lack adequate infrastructure such as classrooms and only few are equipped with radio and television.

## 6. Conclusion

Accessibility and utilization of ICT in Home Economics Education shows that the profession is dominated by the female fold. Looking at this, women are more likely to shy away from ICT challenge s and as such the accessibility and utilization of ICT is limited. However, it can be deduced that high cost of computer, weak infrastructure, ICT phobia, gender, family wealth index of student among others can affect the accessibility and utilization of ICT for the teaching and learning of Home Economics Education.

### 7. Recommendations

There is no doubt that students in Home Economics Education in Nigeria will have incredible resources available if they have access to ICT. By integrating Information and Communication Technology into Home Economics curriculum, a fundamental shift in the way students learn will be evolved. However, to integrate ICT into learning in University of Calabar, there must be:

1) Both teachers and students should provide a written report on how well they have accessed and utilized computer and encourage students to share their experiences in class as well as publishing the benefits of computer.
2) Nigeria should join the World Links of development, a program initiated by the World Bank in 1997. The program has been establishing computer infrastructural laboratories and bringing internet connectivity (ICT) to schools in developing countries around the world. It is also training teachers and students in these countries to acquire skills necessary to integrate information and communication technology into their classroom practices. The World Links of development program links schools around the world in order to improve education, enhance cultural understanding, and develop requisite skills in youth which will prepare them for the job markets in the 21st century. African countries such as Uganda, Senegal and Zimbabwe are already benefiting from the World Links of development program and it has improved the accessibility and utilization basic education in those countries.

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