

THE IMPACT OF INFORMATION AND COMMUNICATION TECHNOLOGY (ICT) IN THE TEACHING AND LEARNING OF HOME ECONOMICS IN JUNIOR SECONDARY SCHOOLS IN JOS SOUTH LOCAL GOVERNMENT AREA OF PLATEAU STATE NIGERIA

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ABSTRACT

This study investigated the impact of information and communication technology (ICT) on the teaching and learning of Home Economics in secondary schools in Jos South Local Government Area of Plateau State. The population for the study comprised all junior secondary two (JSS 2) students totaling 2,950. The sample was 40 JSS 2 Home Economics students drawn from one of the junior secondary schools within the study area. The study employed the quasi experimental design. The Home Economics achievement test scores of the students used in the study were collected from the pre-test and post-test of experimental and control groups. The study was guided by two research questions and two hypotheses. The research questions were answered using frequency counts mean and standard deviation. The hypotheses were tested at 0.05 alpha level of significance using the t-test statistics. Finding of the study showed that ICT instructional strategy of Home Economics in junior secondary schools has a significant difference from the conventional method in terms of improvement in student's achievement. Finding also showed that the use of ICT and other multimedia to teach Home Economics has positive effects on students' learning outcomes while the conventional strategy of teaching does not have an improvement on students learning outcomes. Many secondary schools do not apply ICT in their teaching and learning. This could be because of the high cost of acquiring ICT gadgets, setting up and maintaining computer labs, and lack of support from the government and other stakeholders. Also, many teachers are not computer literate which makes the implementation of ICT instructional strategy difficult. Since students exposed to ICT performed significantly higher than those not exposed to it, it is therefore recommended that Home Economics teachers should employ the use of ICT for the effective teaching and learning of Home Economics. Also, a functional computer laboratory should be put in place to enable staff and students get acquainted with ICT gadgets especially for surfing the internet and updating their knowledge.

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

INTRODUCTION

Information and communication Technology (ICT) has become a key tool in acquiring, processing and disseminating knowledge. It has become an imperative tool for investing in the development of a nation in the 21st century and the revolutionary impact of ICT on all sphere of the society has not spared the educational sector. Education is a pre-requisite of today knowledge-based economy, the production and use of new knowledge required a more educated population, ICT is playing a major role in the acquisition and diffusion of knowledge which are fundamental aspects of the education process. It is offering increasing possibilities in teaching and pedagogy through being able to deliver learning cognitive activities anywhere at any time (Stavert 2013).

The availability of the internet has given rise to an electronic approach to the educational system called e-learning. e-learning is being delivered on the platforms of ICT infrastructure to

widen access to education and at reduced cost. Apart from electronics learning, ICT infrastructure are being widely used to support teaching, learning, administration and research activities. Such infrastructure includes personal computers, specialized software, handheld devices, interactive whiteboard and Internet. (Anderson, 2012).

Jibrin (2012), states that teaching and learning of Home Economics can be more interesting if facilities and laboratory are well equipped. However, these facilities are often not found in most secondary schools, and schools that have laboratories that are equipped with facilities for learning, students are denied access to many apparatus. Research findings has also shown that learning resources such as one book shared amongst seven to ten students, don't help students to understand rather it distracts them. more so, due to misuse of library books, most books in library shelves have been mutilated, stolen or missing. (Aloraini, 2012).

Teaching and learning of Home Economics is confronted with a lot of problems. For effective teaching and learning to take place, the teacher must stimulate, encourage and maintain active participation of students and use appropriate teaching methods. (Layne, 2012). The use of Information and Communication Technology (ICT) has been widely accepted and recommended by some educators as a good method of teaching. The use of ICT for teaching and learning enable students and teachers to participate in the teaching-learning process. It also enables teachers and learners to contribute to knowledge and formulate hypotheses that would enable them find solution to problems. It is against this background that the researcher seeks to find out if students' academic achievement can be enhanced through the use of ICT in the teaching and learning of Home Economics.

Despite introducing the use of ICT in schools, secondary schools are still struggling to find their feet's when it comes to ICTs implementation and integrations at their respective schools. Most of secondary schools are faced with a number of challenges, which includes; limited ICT tools/facilities (like computer labs), lack of skills/experts (lack of trained teachers of ICT), geographical disadvantages, digital divide and financial constraints. (Carl, 2012) Maulas. (2013) mentioned that, the presence of ICT in the interactive educational environment can help to develop thinking skills and make classrooms an environment for educational growth. The researcher also observed that Home Economics laboratory are not well equipped with ICT gadgets which makes practical classes boredom this also affected their exam performances. (Lubucay & Iremae, 2011). Different factors have been said to cause the failure in Home Economics. Lack of practical facilities, lack of well-trained teachers, negative attitude of students, unavailability of ICT labs and equipment, time allocated to technical subject in schools are some few factors amongst others. For instance, Adeniji & Adeogun (2011) found out that most secondary schools in Nigeria had no definite ICT labs for effective teaching and learning. This has also led to the negative attitude of students towards Home Economics especially the practical aspects also leading to the poor performance in practical JSC examination for years in Jos South LGA. Thus, this study envisaged to investigate the impact of ICT in the effective teaching and learning through ICT at junior secondary schools in Jos South.

Objectives of the Study

The study is aimed at examining the impact of information and communication technology (ICT) on the teaching and learning of Home Economics in some selected junior secondary schools in Jos South Local Government Area of Plateau State. The specific objectives of the study are:

1. To investigate the pre-test Home Economics achievement mean score of students taught using ICT instructional strategy and those taught without it
2. To compare the post-test Home Economics achievement mean scores of students taught using ICT instructional strategy and those taught without it.

Research Question

The following are the research questions for this study.

1. What are the pre-test Home Economics achievement mean scores of students taught using ICT packages (gadgets) and those taught without it?
2. What are the post-test Home Economics achievement mean scores of students taught using ICT instructional strategy and those taught without it?

Method

Research design

The researcher employed quasi-experimental design; this is because the study utilized a pretest/posttest non-equivalent comparison group design. (Lambert, 2019). Quasi-experimental design is a design in which participants are not randomly assigned to the groups.

The pre-test and post-test control group design was used; this type of design can be illustrated as;

O1 & O2 represents pre-test for experimental and control group

X1 & X2 represents the two treatments for experimental and control group

O3 & O4 represents the post-test for experimental and control group

Population

The population for the study comprises of all junior secondary two students in Jos South Local Government area and from this population a sample would be retrieve. There are 76 secondary schools in Jos South Local Government Area both public and private. 74 are coeducational and 2 are single sex. 1,300 of the students are males and 1,650 are females bringing a total number of students to 2,950 (Ministry of Education 2019/2020 Annual School Census (ASC) Monitoring Template).

Sample

The sample of the study constitutes four secondary schools randomly selected from the population. Two schools were assigned to each group (experimental and control). The sample constituted 40 Home Economics students drawn from junior secondary school within the study area. 20 students in two schools were assigned to the experimental group while 20 students in the other two schools were assigned to control group. The schools were both public and private schools.

Instrument for the study

The instrument used for data collection was Home Economics Achievement Test (HEAT). The HEAT was developed by the researcher in relation to the content objectives of housing and interior decorations syllabus aspect of the Home Economics curriculum. The instrument had two sections A and B sections. A contains 30 multiple choice items on housing and interior decoration. The content validity of the HEAT was established by subjecting it to experts scrutiny; two from Home Economics Education and one from Measurement and Evaluation in University is Jos. The suggestion and corrections guided the production of the final copy of the instrument. The reliability coefficient of the instrument was estimated using Cronbach Alpha method and the coefficient stood at 0.89. The test was administered to both experimental and control groups, each six-teaching lesson period were carried in the selected schools for both experimental and control groups. The treatment lasted for four weeks during regular school lessons for both the experimental and control classes were taught housing and interior decoration by the researcher assisted by the schools Home Economics teachers as research assistants.

A pre-test was administered to both experimental and control groups before the treatment while the post-test was administered after the treatment. The data obtained from the administration of the test were analyzed using mean, and t-test. ICT was used for teaching the

students in the experimental group of housing and interior decoration while demonstration and discussion methods were used in the teaching the control group students the same topic.

Results

Research Questions

Two research questions were answered as follows;

Research question one; What are the pre-test Home Economics achievement mean scores of students taught using ICT packages (gadgets) and those taught without it?

Table 1: Pre-test Home Economics achievement mean scores of experimental and control group

Groups	N	X	S. D
Experimental	20	29.1	4.28
Control	20	27.9	3.76

Table 1 shows that the experimental group has ($x=29.1$, S. D=4.28) while the control group had ($x=27.9$, S. D=3.76).

Research question two; What are the post-test Home Economics achievements mean scores students taught using ICT packages (gadgets) and those taught without it?

Table 2: Post-test Home Economics achievement mean scores of experimental and control groups

Groups	N	X	S. D
Experimental	20	25.15	5.82
Control	20	20.1	3.34

Table 2 shows that the experimental group had ($x=25.15$, S. D=5.82) while the control group had ($x=20.1$, S. D=3.34).

Table 3: Summary of t-test pre-test Home Economics achievement mean scores of experimental and control groups

Groups	N	X	S ²	T-cal	T-crit	Alpha	Df	Decision
Experimental	20	29.1	18.31	0.940	2.042	0.05	38	Accepted
Control	20	27.9	14.16					

The data in Table 3, indicates that T-calculated was 0.940 which was less than T-critical of 2.042 at 0.05 alpha level. Hence, the hypothesis was accepted.

Table 4: Summary of t-test post-test Home Economics achievement mean scores of experimental and control groups

Groups	N	X	S ²	T-cal	T-crit	Alpha	Df	Decision
Experimental	20	25.15	33.82	3.37	2.042	0.05	38	Rejected
Control	20	20.1	11.14					

The data in Table 4, indicates that the T- calculated was 3.37 which was greater than the T-critical of 2.042 at 0.05 alpha level. Hence, the hypothesis was rejected.

Table 5; Summary of t-test for both experimental and control group

Groups	N	X	S ²	T-cal	T-crit	Alpha	Df	Decision
Experimental	20	27.3	26.07	2.37	2.042	0.05	38	Rejected
Control	20	24.0	12.65					

Table 5, presents the independent sample T-test for experimental and control groups. From the table, T- calculated was 2.37, which was greater than the T-critical of 2.042 at df = 38 and significant level of 0.05. Since, T-cal (2.37) is greater than T-crit (2.042) we reject the null hypotheses and accept the alternate hypotheses and therefore conclude that there is a significant difference in the Home Economics scores of those taught with ICT (experimental group) and those taught without ICT (control group).

DISCUSSION

In this study, the mean scores for post test experimental and control group was found to be 25.15 and 20.1. The result of the study revealed an existing difference in the learning outcomes of students before and after exposure to treatment. There was students' improvement in the performance score in Home Economics. This shows that the use of ICT in the teaching of Home Economics made the difference. The uses of ICT in the teaching of Home Economics are accountable for the improved differences in the performance scores as agreed by (Carl, 2010). The control group did not show any improvement in the students' performance scores. The ICT used for teaching in the experimental group must have catch students' attention and interest, thereby improving the performance scores. This is in support of Aloraini (2012) submission that the uses of ICT and other multimedia to teach has positive effects on students' learning outcomes while the conventional strategy of teaching does not have an improvement on students' learning outcomes. Similarly, Becta (2004) research which examines the impact of ICT on United Kingdom's schools concluded that since students' performance is mostly characterized by teachers' characteristics, educational environment and students' characteristics, therefore, ICT may have an impact on these determinants and consequently an outcome in education. The low scores of students in the control group who were taught with demonstration method could be attributed to lack of ICT in the teaching of Home Economics. Many secondary schools do not apply ICT in their teaching and learning. This could be because of the high cost of acquiring ICT gadgets, setting up and maintaining computers labs and lack of support from the government and others stakeholders. Also, many teachers are computer literate which makes the implementation of ICT instructional strategy difficult.

CONCLUSION

From the above findings, it was concluded that; The use of information and communication technology (ICT) has positive impact on the academic performance of Home Economics students, because this study revealed that those taught with ICT performed significantly better than those taught without ICT. The findings are in line with that of Unwin (2005), who asserted that instructional material especially those of computer aided materials assist a teacher to transmit to a learner the fact, skills, attitude and knowledge that aid the understanding and appreciation of concept. Thus, audio-visual material (ICT) can foster effective learning not only for the child who reads and write easily but also for the pupil who is not verbally gifted.

Recommendations

In view of the findings, the study makes the following recommendations;

1. Home Economics teachers should employ the use of information and communication technology (ICT) for effective teaching and learning of Home Economics.

2. Secondary schools and the government should provide ICT gadgets /tools to improve the teaching and learning of Home Economics. These gadgets should be well maintained and used properly.
3. Teachers should be well trained in the appropriate use of these ICT gadgets to enable effective use and maintenance of these gadgets.
4. A functional computer laboratory or cyber cafe should be developed in secondary schools to enable staff and students get acquainted with ICT especially surfing the Internet and updating their knowledge.
5. Home Economics teachers should imbibe the culture of organizing computer assisted instructions; this will improve students interests in the learning of Home Economics.

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