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BARRIERS TO UTILIZATION OF ICT IN TEACHING AND LEARNING OF HEALTH EDUCATIONAS PERCEIVED BY STUDENTS IN SECONDARY SCHOOLS IN ENUGU NORTH L.G.A OFENUGU STATE, NIGERIA

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Abstract

The researchers examined barriers to utilization of ICT in teaching and learning of Health Education as perceived by students in secondary schools in Enugu North L.G.A, Enugu State. The research was guided by two research questions and two corresponding hypotheses. The research design that was adopted for this study was descriptive survey design. The study was carried out in Enugu North Local Government Area of Enugu State. The population for the study consisted of all the Secondary Schools students in Enugu North local government area. The population for the study was 13,462 students in the 9 Secondary schools in Enugu North local government area. A sample size of 395 was determined by the use of formula of Taro Yamen formular. The simple random sampling procedure was adopted for the study to sample 395 (female 200, male 195) in the sampled five secondary schools for the study. 79 students each were selected from each of the sampled schools. It was obtained by simple random sampling technique (balloting without replacement). The researcher made use of questionnaire titled barriers to "utilization of ICT in teaching and learning of Health Education as perceived by students Questionnaire". Mean statistics was used for data analysis. Findings of the study showed that teachers incompetencies stands as a barrier to the utilization of ICT in teaching and learning of Health Education, the respondents agreed majorly that teachers and students lack proper orientation on how to use ICT facilities. From the findings of the study, it was recommended among others that Health Education teachers and students should have access to ICT facilities and that regular training and seminars should be organized for Health Education teachers in secondary schools on the application of ICT to enhance the teaching of Health Education.

Keywords: Barriers, Utilization, ICT, Teaching, Learning, Health Education.

Introduction

Throughout the world, many countries have introduced Information and Communication Technologies (ICT) into schools to promote teaching and learning in different courses. The training of teachers in different subject areas as a discipline involves various methods of approach, operations and ICT integration in schools is needed in order to accomplish many objectives and improve the quality of lessons in all subject areas as well as Health Education. ICT increasingly pervades various aspects of our daily lives like work, business, teaching, learning, leisure and health (Olaojo, 2018). ICT has changed the quality of education and the teachers are expected to use ICT as part of teaching and learning in health education. ICT as

new concepts of learning have evolved, teachers are expected to facilitate learning and make it meaningful to individual learners rather than just to provide knowledge and skills (Peter &Rexwhite, 2019). School management should help the students to acquire a philosophy of life, attitude, skills, concepts, understandings and knowledge that will prove useful to them for the next sixty or seventy years of their lives. These represent the broader goals of our education and Health Education as an independent field of study, has assumed a special responsibility, towards the attainment of these goals (Olaojo, 2018). This can only be achieved when modern facilities like AI and ICT are been inculcated in the process.

Information and communication technology (ICT) is the creative application of scientific and systematic knowledge, tools and techniques to the solution of problems of human communication and information system. Such problems may be found in industry, commerce, education or even health care. Information Communication Technology is "a generic term to cover acquisition, processing, storage and dissemination of information- textual numerical, pictorial and vocal. The concept is restricted to systems dependent on microelectronics- based on combination of computing and telecommunications technology since the early 20th century. The problems that generally stare in the face of effective organization of physical activities in the schools are of inadequate qualified health education personnel, lack of facilities for medical examination, an academically loaded curriculum, lack of time; lack of funds, lack of provision of mid-day meals and the practice of double shifts (Offorma, 2019). According to Iwu (2019), information and communication technology is the study or use of electronic equipment especially computer for sorting analyzing and sending out information. According to United Nations Educational, Scientific and Cultural Organization (UNESCO, 2017), ICT is a scientific, technological and engineering discipline and management technique used in handling information, its application and association with social economics, cultural matter and health issues concerning the society.

The aim and objective of health education is to develop human personality in its totality (Singh, 2018). This involves the development of the mental, social, emotional and moral aspects so as to make the individual to live healthy in the society. Such a person should be able to make contribution in the process of nation building in his or her own way. Oak (2018) noted that health education helps to instill in the students the value and skills of maintaining a healthy life style through mental practices. The person will learn skills necessary to perform variety of physical activities, is usually physically fit and participates regularly in physical activities as well as its contribution to healthy life style.

In schools, educational resources are instructional and curriculum materials employed in health education instructional classes or teaching learning experiences. The availability and utilization of resources are predictors to the successful implementation of any academic programme. According to Offorma (2016) teaching is usually facilitated and is more effective through the active participation of the learners and utilization of appropriate resources. Active participation of the learner in health education is facilitated by the availability and effective utilization of adequate instructional resources personnel, facilities, equipment and supplies. Several studies have divided the barriers into two categories: extrinsic and intrinsic barriers. However, what they meant by extrinsic and intrinsic differed. In one study, Ertmer (2019) referred to extrinsic barriers as first-order and cited access, time, support, resources and training and intrinsic barriers as second-order and cited attitudes, beliefs, practices and

resistance; whereas, Hendren (2000, as cited in Al-Alwani, 2015) saw extrinsic barriers as pertaining to organisations rather than individuals and intrinsic barriers as pertaining to teachers, administrators, and individuals. Another classification found in the literature is teacher-level barriers versus school-level barriers. Becta (2019) grouped the barriers according to whether they relate to the individual (teacher-level barriers), such as lack of time, lack of confidence, and resistance to change, or to the institution (school-level barriers), such as lack of effective training in solving technical problems and lack of access to resources.

Similarly, Balanskat (2016) divided them into micro level barriers, including those related to teachers' attitudes and approach to ICT, and more so level barriers, including those related to the institutional context. The latter added a third category called macro level (system-level barriers), including those related to the wider educational framework. Another perspective presents the obstacles as pertaining to two kinds of conditions: material and non- material (Pelgrum, 2019). The material conditions may be the insufficient number of computers or copies of software. The non-material obstacles include teachers' insufficient ICT knowledge and skills, the difficulty of integrating ICT in instruction, and insufficient teacher time.

The barriers described include not possessing confidence or interest in teaching health education, being unable to provide safely planned and structured lessons, having had personal negative experiences in health education and lacking training, knowledge, expertise and qualifications to provide health education (De Corby, Halas, Dixon, Wintrup& Janzen, 2017; Morgan & Bourke, 2017; Xiang, Lowy & McBride, 2020). The comprehensive secondary school-based findings reflect not only the lack of research across the secondary levels in schools, but could possibly be attributed to both secondary and specialist Secondary school teachers having dedicated physical education units as part of their training.

Teachers are the fundamental instrument for every teaching and learning Omorruan (2016) pointed out that health education teachers are not being adequately prepared for the well-prepared health education curriculum in our schools. Many teachers that teach the subject in secondary schools are not specialists of health education. Some that are specialists in the subject area are not fit enough to take students to the practical aspect of the subject since health education is highly practical intensive. This could be better and easier achieved if there is availability of adequate facilities and equipment for teaching the subject right from the secondary school level, more so in health education where some of the skills are practical oriented. Akin-Taylor and Abayomi (2018) asserted that the health education teacher needs to be professionally trained to enable him possess the necessary skills required for effective management of available school facilities as to promote effective teaching and learning of health education. Meanwhile, it was identified that many secondary schools in Nigeria lack adequate teaching facilities that can help improve teachers' effective participation in classroom activities.

Health education requires a variety of health education facilities, equipment, supplies as well as fund. Supplies and equipment need to vary according to a wide range of factors, including the level of programme or participants, age of the user group, type of activities being offered, number of participants and available finance in the school this can be attributed to government inability to fund and equip schools (Arnhein& Prentice, 2018). Due to the

trending opening of schools and zeal to make money, schools are been located every place these days and this discourages making use of good sites for school environment. Good sites in terms of space that will accommodate both classroom and teaching facilities for both sports and recreational activities (Adeyanju, 2018). Therefore, the study tends to identify the barriers to utilization of ICT in teaching and learning of health education as perceived by students in secondary schools in Enugu North L.G.A, Enugu State.

Statement of the Problem

Traditionally, teachers have been visualized as repositories of knowledge which they transmitted to the students. Today, technology has changed this completely. Yet most secondary school teachers are not euphoric about the technology revolution. They doubt the potential of technology in meeting instructional goals and they continue to be tied to the old methods. The use and emergence of Information and Communication Technology came along with some hindering vices to academic pursuit, many students or youth prefer spending much of time on, Yahoo, Facebook, WhatsApp and social media generally, watching films which are not edutainment through the internet. This has been modus operandi on how some student utilize ICT facilities which is affecting the academic performance of learners in Health Education and Education generally.

The challenge decreasing the standard of ICT in teaching and learning of Health Education has been identified in the area of teacher qualification. Teachers experience, teachers' frequent transfer, poor condition of services, inadequate materials, services and textbooks. This study therefore pointed to investigate the impact of Information and Communication Technology of teaching Health Education in Secondary School in Enugu North L.G.A, Enugu State. This study therefore investigates barriers to utilization of ICT in teaching and learning of health education as perceived by students in secondary schools in Enugu North L.G.A, Enugu State.

Purpose of the Study

The purpose of the study was to investigate barriers to utilization of ICT in teaching and learning of Health Education as perceived by students in secondary schools in Enugu North L.G.A, Enugu State.

Specifically, the study seeks to assess:

1. School related barriers as a barrier to utilization of ICT in the teaching and learning of Health Education as perceived by students in Secondary Schools in Enugu North L.G.A, Enugu State.
2. teachers related as a barrier to the utilization of ICT in teaching and learning of Health Education as perceived by students in Secondary Schools in Enugu North L.G.A, Enugu State.

Research Questions

The following research questions guided the study:

1. what are the school related barriers as a barrier to utilization of ICT in the teaching and learning of Health Education as perceived by students in Secondary Schools in Enugu North L.G.A, Enugu State?

2. What are the teachers related as a barrier to the utilization of ICT in teaching and learning of Health Education as perceived by students in Secondary Schools in Enugu North L.G.A, Enugu State?

Hypotheses

The following hypotheses were developed at 0.05 alpha level to guide the study:

1. There is no relationship between male and Female teachers on school related barriers as a barrier to utilization of ICT in the teaching and learning of Health Education as perceived by students in Secondary Schools.
2. There is no relationship between male and Female teachers on teachers related as a barrier to the utilization of ICT in teaching and learning of Health Education as perceived by students in Secondary Schools.

Method

The research design that was adopted for this study is be survey design. Survey design according to Iketaku (2018) it is one in which a group of people or items are studied by collecting and analyzing data from only a few items considered to be representative of the entire group. The study was carried out in Enugu North Local Government Area of Enugu State. The population for the study was 13,462 Student s in the 9 Secondary schools in Enugu North local government area. A sample size of 395 was determined by the use of formula of Taro Yamen formular.The simple random sampling procedure was adopted for the study to sample 395 (female 200, male 195) government secondary School Students in Enugu North Local Government by simple random samply techniques, 395 Secondary School Students were selected from the selected five schools for the sampling, 79 Students each were selected from each of the 5 selected school. this was obtained by simple random sampling techniques (Balloting without replacement). The researcher made use of questionnaire titled barriers to "utilization of ICT in teaching and learning of Health Education as perceived by students Questionnaire". The instrument was divided into two parts. Part A is on respondent's personal data like school, age, sex and class. Part B comprised2 clusters. Cluster A is on school related barriers and clusters B is teachers related barriers, The questionnaire comprises items with a four-point rating scale thus, Strongly Agree, Agree, Disagree, Strongly Disagree, and also provided for the respondents to make their responses to the set questions. The instrument used was validated by three experts two of them in from the school of Human Kinetics education and one expert in the Department of Measurement and Evaluation in Enugu State University of Science and Technology, Enugu. Their corrections were on face and content validity of the instrument. The experts were giving a copy of each of the questionnaire are the necessary corrections made by the experts. The questionnaires were administered personally to (97) students from the five selected from 5 secondary schools in Enugu North Local Government Area, Enugu State by the researcher to the respondent in order to retrieve a maximum number of the questionnaire issued out.

Mean statistic was used for data analysis and t-test was used for the hypothesis at 0.05 alpha level; in order to determine the degree of respondent's agreement/ disagreement on each of the scaling statement in the questionnaire, nominal values were assigned to different scaling statement. A cut off was determined by finding the mean of the nominal values assigned to option of the rating seals, using the formula. The decision rule will be that any of the responses therefore that have mean score of 2.5 and above were regarded as agree while any value below 2.5 was regarded as disagree. For the research hypotheses; the decision rule is that if the

calculated t-value is greater than or equal to the table value (t-value), the null hypothesis was rejected. If on the other hand, the calculated t-value is less than the table t-value, the null hypothesis was not rejected.

Results

This data collection for the study was presented and analyzed in this chapter based on the research questions that guided the study.

Research Questions 1: what are the school related barriers as a barrier to utilization of ICT in the teaching and learning of Health Education as perceived by students in Secondary Schools in Enugu North L.G.A, Enugu State?

Table 1: School related barriers as a barrier to utilization of ICT in the teaching and learning of Health Education as perceived by teachers

S/No	Statement	SA	A	D	SD	$\bar{x}$	Decision
1	Our school do not have ICT facilities	24	31	29	16	2.63	Agree
2	ICT facilities in our school are not functional	8	27	52	14	2.30	Disagree
3	ICT facilities in our school are outdated for teaching health education	31	47	13	9	3.00	Agree
4	ICT facilities available is inadequate	7	13	66	14	2.13	Disagree
5	ICT facilities for health education only are not functional	21	16	16	25	2.60	Agree
	Overall Mean					**2.53**	**Agree**

Source: Field Survey 2026

The result on table 1 expressed that the mean score of items 1, 3 and 5 were respectively greater than 2.5. This applied that the respondents admitted that many schools don't have ICT facilities for health education, ICT facilities in some schools were outdated and that ICT facilities for health education is not available. While the means of item 1 and 5 were respectively less than 2.5. This implies that respondents did not admit that ICT facility in some schools were not functional and that ICT facilities available are not adequate but less than the criterion. The overall mean score of 2.53 signifies the overall acceptance that level of inadequacy of information and communication technology materials as a barrier to the teaching and learning of Health Education as perceived by students in Secondary Schools in Nkanu West L.G.A, Enugu State.

Ho1:There is no relationship between male and Female students on school related barriers as a barrier to utilization of ICT in the teaching and learning of Health Education as perceived by students in Secondary Schools.

Table 2: **t-test analysis of the mean score of male and Female teachers' on school related barriers as a barrier to utilization of ICT in the teaching and learning of Health Education as perceived by students in Secondary Schools.**

	N	Mean	Standard Deviation	Degree of freedom	t-cal	t-crit	Decision
Male	195	2.73	0.87	393	8.57	1.68	S
Female	200	2.63	0.97				Reject Ho2

From the table above, mean score of male students' response was 2.73, while SD was 0.87. The total number of male students is 195. Female students' have a mean score of 2.63 and SD = 0.97. Total number of female students was 200. From the analysis, t-calculated is 8.57 and t-critical is 1.68. From this result, the null hypothesis that there is no significant difference between male and Female students on school related barriers as a barrier to utilization of ICT in the teaching and learning of Health Education as perceived by students in Secondary Schools. is rejected. This is because calculated value 8.57 is outside the acceptable region 1.68 for a normal distribution of a one tailed test. Thus, there is a significant difference between mean score of male and Female students on influence of school related barriers as a barrier to utilization of ICT in the teaching and learning of Health Education as perceived by students in Secondary Schools.

Research Questions 2: What are the teachers related as a barrier to the utilization of ICT in teaching and learning of Health Education as perceived by students in Secondary Schools in Enugu North L.G.A, Enugu State?

Table: Teachers related as a barrier to the utilization of ICT in teaching and learning of Health Education as perceived by teachers

S/No	Statement	SA	A	D	SD	$\bar{x}$	Decision
6	Many teachers don't have knowledge of ICT	8	72	7	13	2.80	Agree
7	Some teachers don't have ICT facility	33	35	24	8	2.93	Agree
8.	Some teachers have little knowledge of ICT facility	22	25	27	26	2.43	Disagree
9.	Teachers lack proper orientation on how to use ICT facilities properly in teaching and learning of Health Education	41	29	17	13	2.98	Agree

10.	So many ICT facilities for teaching of health education is too sophisticated to be handled by teachers	71	16	8	5	2.53	Agree
	Overall Mean					**2.93**	**Agree**

Source: Field Survey 2026

The result on table 2 expressed that the mean score of item 6, 7, 8 and 10 were respectively greater than 2.5. This applied that the respondents admitted that many teachers don't have knowledge of ICT, some teachers don't have ICT facility lack of skilled teachers to use ICT facilities, teachers lack proper orientation on how to use ICT facilities properly in teaching and learning of Health Education and that So many ICT facilities for teaching of health education is too sophisticated to be handled by teachers in teaching and learning of Health Education, teachers and Students lack proper orientation when ICT facilities are not properly used in teaching and learning of Health Education and that Improper maintenance and service culture of ICT facilities in the school setting are the challenges of ICT in teaching of Health Education . While the mean of item 8 is respectively less than 2.5. This implies that the respondent did not admit that Some teachers have little knowledge of ICT facility. The overall mean score of 2.93 signifies the overall acceptance that teachers' incompetences stand as barriers to the utilization of ICT in teaching and learning of Health Education as perceived by students in Secondary Schools.

H0$_2$There is no relationship between male and Female students' on teachers related as a barrier to the utilization of ICT in teaching and learning of Health Education as perceived by students in Secondary Schools

Table 4: **t-test analysis of the mean score of male and Female teachers' on teachers related as a barrier to the utilization of ICT in teaching and learning of Health Education as perceived by students in Secondary Schools**

	N	Mean	Standard Deviation	Degree of freedom	t-cal	t-crit	Decision
Male	195	2.89	0.83	393	8.87	1.68	S
Female	200	2.85	0.80				Reject Ho$_1$

From the table above, mean score of male students' response was 2.89, SD was 0.83 and their total number is 195. Female students' have a mean score of 2.85 and SD = 0.80. Total number of female students was 200. From the analysis, t-calculated is 8.87 and t-critical is 8.87. From this result, the null hypothesis that there is no significant difference between male and female studentson teachers related as a barrier to the utilization of ICT in teaching and learning of Health Education as perceived by students in Secondary Schools is rejected. This is because calculated value 8.87 is outside the acceptable region 1.68 for a normal distribution of a one tailed test. Thus, there is a significant difference between mean score of male and Female students' on teachers related as a barrier to the utilization of ICT in teaching and learning of Health Education as perceived by students in Secondary Schools.

Summary of Findings

Findings of the study are presented according to the purpose of the study and research questions. From the results obtained, respondents agreed that;

1. Inadequacy of information and communication technology materials is a barrier to the teaching and learning of Health Education, the respondent agreed that ICT facility in some schools is not functional and that ICT facilities available are not adequate.
2. Teachers incompetence stands as a barrier to the utilization of ICT in teaching and learning of Health Education, the respondent agreed majorly that teachers and Students lack proper orientation when ICT facilities are not properly used in teaching and learning of Health Education.
   Teachers' incompetence stands as barriers to the utilization of ICT in teaching and learning of Health Education as perceived by students in Secondary Schools.
3. there is a significant difference between mean score of male and Female students on teachers related as a barrier to the utilization of ICT in teaching and learning of Health Education as perceived by students in Secondary Schools.

Discussion of Findings

Inadequacy of information and communication technology materials is a barrier to the teaching and learning of Health Education as perceived by students in Secondary Schools. The result of finding is in line with the work of Nwoji (2016) stressed that without adequate utilization of ICT facilities in classroom teaching and learning that students will find it difficult to cope with the use of ICT facilities in learning physical and health in secondary schools. She also advocated that the content of teachers' or students' education programmes should be technologically and ICT oriented. The response revealed that teachers incompetence stands as a barrier to the utilization of ICT in teaching and learning of Health Education, the respondent agreed majorly that teachers and students lack proper orientation when ICT facilities are not properly used in teaching and learning of Health Education.

The response revealed that student enjoy the use of projectors and other ICT facilities in learning of Health Education, ICT facilities bring about effective learning outcome, ICT has provided easy access internet facilities for the student, students perform better in examination as a result of the introduction of ICT facilities and that ICT provides easy access to information on social issues of the country. The response revealed that government should provide ICT facilities in secondary school for effective teaching and learning of Health Education and other subject, skilled personnel should be employed to manage ICT facilities in school, government should introduce ICT training and seminars for teachers to improve teaching skills, e-learning software should be introduces in teaching and learning of Health Education and that non-governmental organization, parents, PTA, and area councils should contributors in equipping the school, with ICT facilities.

Conclusion

After comprehensive review of various related literature on the subject matter, after series of data collections and interpretation, the researcher made the following conclusions; Application of ICT facilities can improve the quality of Health Education in Nigeria, and also makes the teaching and learning of other reacted subject interesting, improper use of ICT can change the student orientation, attitudes and behaviours towards teaching and learning of Health Education; as well affects their level of understanding and assimilation.

Recommendations

Based on the finding of this research, the following recommendations are hereby made;

i. Health Education teachers and students should have access to ICT facilities, regular training and seminars should be organized for Health Education teachers in junior secondary schools on the application of ICT to enhance the teaching of Health Education

ii. Government should provide adequate ICT facilities and internet service for easy access to ICT facilities and interest to Health Education teachers and students.

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