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THE USE OF TECHNOLOGY IN THE TEACHING OF ECONOMICS: PERSPECTIVES OF ECONOMICS STUDENTS

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KeyWords

Economics, Economics Students, Economics Teachers, Perspective, Senior High School, Technology, Teaching

ABSTRACT

The aim of the study was to ascertain Economics students' perceptions about the state of the use technology in the teaching of Economics in selected Senior High Schools in the Central Region of Ghana. The study was a descriptive type which employed the survey design. Respondents of this study comprised 150 Senior High School form 2 Economics students drawn from the Cape Coast Metropolis in the Central Region of Ghana. A 33-item questionnaire was used to elicit response from students. A reliability index of .904 was obtained. The data were analyzed using frequency and percentages, mean and standard deviation, and independent sample t-test statistical techniques. The findings of the study revealed that technological tools such as computers, presentation software and projectors, can be employed in the teaching of Economics. Again, it was found that Economics teachers rarely make use of available technologies in the teaching of the subject. Further, students were also found to exhibit positive attitude when technology is used in teaching. Finally, the study revealed that there was no significant difference in the SHS Economics students' perspectives when technology is used in Economics lessons based on gender. It was recommended that Ghana Education Service (GES) should organize seminars and in-service training for Economics teachers as way of exposing them to the types of technology and how to use them in teaching. Also, the Ministry of Education and GES should provide technological resources needed by schools.

Introduction

The use of technology in education has rapidly expanded in many countries and is now seen worldwide as both a necessity and an opportunity for improving and enhancing the education offered to citizens across the globe (UNESCO, 2002). Technology has been regarded as one of the building blocks of modern society (Anderson, 2002), and has been considered as one of the indices that was used to assess a society's development. This is evident by the various technologies, being used by developed countries like United States of America and United Kingdom in communication that has transformed their economies.

The application of ICT in education has become an indispensable tool in global economic transformation and integration. The global knowledge now comprises diverse technologies featuring computer networks (Nwachuchukwu, 2010). These revolutions, according to Ogwo (2005) have automatically changed the image and the direction of teaching and learning in this contemporary world especially in the developed countries of world. ICT has touched every profession, vocation or occupation and has impacted positively in ways of doing things in organizations and society at large. Of immense importance is the aspect of the use of certain applications like film strips, computers, internet, presentation software (PowerPoint) which has brought about speedy, timely, and efficient information processing which is very significant for day-to-day study of Economics as well as decision making.

The role ICT plays in widening access to education to a wider section of the population at all levels of education has been recognized as a key priority area under the Education Reforms carried out in 2007 by the Ghana Education Service. ICT in Ghana's Education Policy is therefore seen as an epitomized version of the ultimate goal of transforming the educational system by the Ministry of Education and its sector stakeholders. It is intended to be a guide by which ICTs can be exploited in an efficient and coordinated effort to support the education sector's own goals and operations, as well as within the framework of the national development initiatives, including the National ICT for Accelerated Development (ICT4AD) Policy.

In the beginning of the implementation of ICT in the country, there were optimistic beliefs about profound changes in teaching and learning practices among both educational researchers and policy-makers (Ghana ICT4AD Policy, 2003). Because of the increasing amount of technology integration in the teaching and learning process, more and more studies focus on examining 'how people learn with technology' (Isik & Yilmaz, 2012).

Shawn (2014) asserted that the 21st century goal of education is the mastery of information, embedded knowledge

and understanding and advancement of the use of technology in society. Economics as a subject and course aligns itself with the use of technology in the teaching and learning process. On this note, Jean (2017) opined that effective use of ICT can support and alter teaching and learning process in many subject areas. There is no doubt that technology can be employed in teaching Economics.

Review of Related Literature

Due to the rapid changes and advancement in technology, there are a host of technological tools available for teaching. There are different kinds of technological tools that are useful for teaching (Sofowora & Egbedokun, 2010). Internet, interactive digital television, video, web-based instruction, computers, video conferencing, word processors, spread sheets, statistical packages, databases, projectors, audio resources and presentation software can be used in teaching (Fisher, 2000; Amengor, 2011).

In Turkey, Ocak and Akdemir (2008) conducted a study on science teachers' use of computer applications. The findings of their study showed that an improvement in the computer literacy of science teachers tend to increase rate at which they use computer and consequently increase their integration of computer applications as an instructional tool. The most frequently used technologies in classrooms were Internet, email and educational software, Compact Discs (CDs).

Again, a study conducted by Yusuf, Bashir and Dare (2013) on assessment of the availability, utilization and management of ICT facilities in teaching English language in secondary schools in Kaduna State, Nigeria. The results of the study indicated that there is a scarcity of ICT facilities in secondary schools in Kaduna as there are only very few of such facilities available in most of the schools visited. This implied that ICT facilities were not readily available in schools. Also, teachers did not have enough computers, no interactive boards educational softwares or multimedia facilities. In some schools, only projectors and e-libraries were available.

Also, assessing the ICT situation in Senior High Schools in the Lower Manya Krobo District, Adebisi-Caesar (2012) asserted that the majority of the schools had insufficient computers and also teachers rarely make use of computers in the teaching process. Ayebi-Arthur, Aidoo and Wilson (2009) conducted a study on utilization of the Internet in senior high schools in the Cape Coast Metropolis in the Central Region of Ghana. The findings of the study revealed that majority of the teachers had access to the internet but hardly used it.

Rampersad (2011) conducted a study on how students' interest, motivation and engagement in Modern Studies were affected by the integration of technology. The results of the study showed that the use of technology helped students

to recall lessons, it created a conducive environment for learning and it also captured the attention of students. Again, students developed interest in the lesson and actively involved themselves in the teaching process. However, the absence of technology would have a negative impact on students' attentiveness and their desire to participate in a lesson (Lavin, Korte & Davies, 2011). Turan (2010) opined that students showed positive attitude toward the use of technology in teaching. The use of technology in teaching and learning stimulates the interest of students (Gragert, 2000; Haddad & Drexler, 2002).

Rafaei (2015) asserted that the use of ICT in the teaching and learning of Economics in secondary schools enhances collaborative and establishes rich network between students. Additionally, the use of ICT in teaching and learning can help improve memory, retention and increase motivation among students.

The reviewed literature clearly shows studies on the types of technology that can be used in teaching, the extent to which technologies are used in the teaching and learning process, and also the perceptions of students when technology is used in teaching.

Statement of the Problem

The use of technology in teaching and learning has rapidly become one of the most important and widely discussed issues in contemporary education policy (Thierer, 2000). A lot of efforts and numerous resolutions have been made by policy makers concerning ICT to make teaching and learning easier. For instance, in Ghana, the Anamuah-Mensah Committee's Report (Government of Ghana, 2004) stipulated that, it is important for students in the senior high schools to be exposed to ICT through the use of computers and that ICT should be introduced into the country's education system starting from the junior high school and upward. It was recommended that ICT should be integrated into the curriculum and should be used in the teaching and learning process.

Despite the several attempts to shift from the conservative method of teaching and learning and the introduction of various policies to be used in the teaching and learning process, it seems that, studies on the use of ICT in teaching and learning process appears to have concentrated on other subject areas with little attention in Economics as a subject at the senior high school level.

Nji and Idika (2018) conducted a study on the utilization of ICT in teaching and learning of Economics in secondary schools in Nsukka education Zone in Nigeria. The results of the study showed that teachers and students had low utilization of ICT in teaching and learning. However, in their study they failed to look at the perceptions of students on the use

of ICT in teaching and learning.

In the Ghanaian context, Boadu, Awuah, Ababio and Eduaquah (2014) conducted a study on the use of technology in the teaching of History. The findings of their study revealed that technological tools can be employed in teaching History. History students portray positive attitudes in class when technology is used in teaching.

It appears the various studies were conducted in different subject areas and also the one in Economics failed to look at the perceptions of Economics students on the use of technology in teaching Economics. The question is what is the state of the use of technology in the teaching of Economics? There is the need to find out the state of technology use in the teaching of Economics. This study therefore adds to the existing body of knowledge already amassed in this area of research conducted in other teaching and learning contexts.

Purpose of the Study

The purpose of the study was to examine the perspectives of SHS Economics students about the use of technology in the teaching of Economics. Specifically, the study is intended to:

1. find out the types of technology that can be used to teach Economics at the SHS level?
2. ascertain the extent to which SHS Economics teachers use technology in teaching Economics?
3. determine SHS Economics students' perspectives when technology is used in Economics lessons?
4. ascertain whether there is difference in the SHS Economics students' perspectives when technology is used in Economics lessons based on gender.

Research Question

1. What are the types of technology that can be used to teach Economics at the SHS level?
2. To what extent do SHS Economics teachers use technology in teaching Economics?
3. What are SHS Economics students' perspectives when technology is used in Economics lessons?

Research Hypothesis

The following hypothesis guided the study.

H_0 : There is no significant difference in the SHS Economics students' perspectives when technology is used in Economics lessons based on gender.

H_1 : There is a significant difference in the SHS Economics students' perspectives when technology is used in Economics lessons based on gender.

Methodology

Research Design

The research design adopted for this study was the descriptive survey design. Descriptive survey research design enables a researcher to obtain the necessary data on the variables from a representative sample of the population in order to describe the situation as it exists. The choice of this design was further informed by the assertions of Best (1981) and Akinkuolie (1989) that it typically utilizes a questionnaire to determine the opinions, perspectives, conceptions, beliefs, facts, attitudes, preferences, and perceptions of persons of interest to the researcher. The descriptive survey design was therefore considered appropriate for this study since it is relevant in examining the perspectives of Economics students about the use of technology in the teaching of Economics.

Population

The population of the study comprised all SHS Economics students in the Central Region of Ghana. The target population of the study was Economics students in Senior High Schools in the Cape Coast Metropolis. However, the accessible population was SHS 2 Economics students from three selected Senior High Schools in the Cape Coast Metropolis. The Economics students were all SHS 2 Economics students selected irrespective of their programme of study and gender.

Sample and Sampling Procedure

The sample size was made up of 150 SHS 2 Economics students in the Cape Coast Metropolis. The simple random technique was used to select 150 students for the study. This technique was to enable the researchers collate views from the students without bias in the selection process.

Research Instrument

The main instrument used for the study was the questionnaire. A 33-item questionnaire developed by the researchers was used for this study. The four-point Likert scaled questionnaire was used for sections B, C and D had various score values and others for respondents to specify. Statements on Section D were scored as Strongly Agree (SA) = 4, Agree (A) = 3, Disagree (D) = 2 and Strongly Disagree (SD) = 1. The instrument was pilot tested in two senior high schools in the Kumasi Metropolis and a reliability test was carried out to measure its internal consistency. Cronbach's Alpha is a commonly used test of internal reliability and it essentially calculates the average of all possible split-half reliability coefficients (Bryman, 2008). A Cronbach alpha of .904 for the instrument reliability indicates that the degree of inter-

nal consistency of the instrument is high.

Procedure for Data Collection

An approval letter from the heads of the selected schools was used as evidence of permission to administer the research instruments in their schools. The questionnaire was administered to Economics students of the selected SHS in the Cape Coast Metropolis. The questionnaire was administered by two research assistants. The research assistants assured the respondents of complete confidentiality, distributed the questionnaire to the respondents, guided them through how to respond to the items and collected them within 10 to 15 minutes.

Data Analysis Procedure

Data collected were coded and refined with the help of SPSS (version 23). Research question one was analyzed using frequency and percentages. Also, research question two and three were analyzed using means and standard deviations. The research hypothesis was analysed using independent sample t-test.

Presentation of Results

Research Question 1: What are the types of technology that can be used to teach Economics at the SHS level?

This research question was aimed at finding out the various types of technology tools or devices that could be used to promote the teaching of Economics.

Table 1 describes the responses from students based on the types of technology that can be used to teach Economics.

Table 1: Economics Students' Perspectives on the Types of technologies for Teaching Economics

Technology tool	Strongly Disagree	Disagree	Agree	Strongly Agree
	Freq (%)	Freq (%)	Freq (%)	Freq (%)
Computer	51 (34.0)	20 (13.3)	30 (20.0)	49 (32.7)
Presentation Software	47 (31.3)	27 (18.0)	32 (21.3)	44 (29.3)
Projectors	52 (34.7)	19 (12.7)	37 (24.7)	42 (28.0)
Television/Video	54 (36.0)	34 (22.7)	28 (18.7)	34 (22.7)
Internet Electronic	49 (32.7)	33 (22.0)	26 (17.3)	42 (28.0)
Radio	66 (44.0)	36 (24.0)	34 (22.7)	14 (9.3)
Tape Recorder	61 (40.7)	40 (26.7)	27 (18.0)	22 (14.7)
Film Strips	59 (39.3)	36 (24.0)	29 (19.3)	26 (17.3)

Source: Field Survey, 2020.

Note: Agreed and Strongly Agreed were merged to get Agreed, Disagreed and Strongly Disagreed were merged to get Disagreed.

From Table 1, the majority 102 (68%) of students disagreed that radio can be used in teaching Economics; 101 (67.4%) disagreed on tape recorder; 95 (63.3%) of the students disagreed on film strips; 88 (58.7%) disagreed on television/video and 82 (54.7%) disagreed on internet. However, 79 (52.7%) of the students agreed that computers and projectors can be used in teaching Economics; 76 (50.6%) agreed on presentation software. These results show that in the view of students, computers, presentation software and projectors are the major types of technologies that can be used in teaching Economics. Again, the fact that students disagreed that radio, tape recorder, film strips and television/video and internet can be used to teach Economics indicate that students are probably not aware of these technologies as having the potential of enhancing the teaching of Economics.

Research Question 2: To what extent do SHS Economics teachers use technology in teaching Economics?

Table 2 describes the responses from students based on how frequently Economics teachers used technology in the teaching of Economics.

Table 2: Economics Students' Perspectives on Teachers' Frequency of Technology Use

Technology tool	Never	Occasionally	Often	Very Often
	Freq (%)	Freq (%)	Freq (%)	Freq (%)
Computer	115 (76.7)	27 (18.0)	5 (3.3)	3 (2.0)
Presentation Software	119 (79.3)	17 (11.3)	6 (4.0)	8 (5.3)
Projectors	119 (79.3)	13 (8.7)	13 (8.7)	5 (3.3)
Television/Video	132 (88.0)	12 (8.0)	2 (1.3)	4 (2.7)
Internet Electronic	121 (80.7)	14 (9.3)	8 (5.3)	7 (4.7)
Radio	130 (86.7)	14 (9.3)	3 (2.0)	3 (2.0)
Tape Recorder	125 (83.3)	17 (11.3)	7 (4.7)	1 (0.7)
Film Strips	127 (84.7)	10 (6.7)	5 (3.3)	1 (0.7)

Source: Field Survey, 2020.

It could be observed from Table 2 that most Economics teachers do not frequently make use of the various types

of technologies in the teaching of Economics. From Table 2, majority 132 (88%) of the respondents were of the view that Economics teachers never used television/video for teaching, with only 12 (8%) indicating occasional use. Again, 130 (86.7%) of respondents indicated that Economics teachers never used radio. This was followed by 127 (84.7%), 125 (83.3%), 121 (80.7), 119 (79.3%), 119 (79.3%) and 115 (76.7%) respondents who agreed that teachers never used film strips, tape recorder, presentation software, projectors and computers respectively in teaching Economics. The figures point to the fact that in view of students, Economics teachers rarely make use of available technologies in the teaching of the subject.

Research Question 3: What are Economics students' perspectives when technology is used in Economics lessons?

Table 3 describes the responses from students based on their perspectives when technology is used in Economics lessons

Table 3: Economics Students' Perspectives when Technology is used in Economics lessons

S/N	Statement	Mean	SD
1	Technology use makes Economics lessons exciting	3.25	1.02
2	Students participate meaningfully in class when technology is used	3.20	.96
3	Students become attentive in class and focus on the lesson	3.29	.84
4	Students think critically about Economic problems when technology is used	3.28	1.22
5	Students show greater involvement and engagement in lessons	3.31	.80
6	Students ask questions that bother their mind when technology is used	3.19	.85
7	Students demonstrate understanding	3.30	.86
8	Students learn Economics better through the use of videos	3.31	.86
9	Students show interest in Economics lessons when technology is used	3.30	.87
10	Economics lessons can be improved with the introduction of technology	3.47	.86
11	Students accept that the Economics teacher should use technology in class	3.47	.86
Mean of Means/Average Standard Deviation		3.31	.91

Source: Field Survey, 2020.

As clearly shown in Table 3, the highest mean value recorded was ($M = 3.47$, $SD = .86$), and is in relation to the perspective that Economics lessons can be improved with the introduction of technology and Economics teachers should use technology in class. This implies that a majority of the respondents agreed that technology can improve Economics

lessons and it should be used by teachers in class.

On the whole, the Economics students acknowledged the use of technology in the teaching of Economics. They had a positive perspective towards the use of technology in the teaching of Economics. This is shown in the result of an average mean of 3.31. However, an average standard deviation of .91 implies that responses are widely spread from the average mean.

Research Hypothesis

H₀: There is no significant difference in the SHS Economics students’ perspectives when technology is used in Economics lessons based on gender.

H₁: There is a significant difference in the SHS Economics students’ perspectives when technology is used in Economics lessons based on gender.

Table 4 presents a summary of the results in terms of the hypothesis that, there is no significant difference in the SHS Economics students’ perspectives when technology is used in Economics lessons based on gender.

Table 4: Difference in Economics students’ Perspectives on the use Technology Based on Gender

	Gender	N	M	SD	T	df	ρ
Perspectives on Technology	Male	120	3.27	.71	-1.511	148	.068
	Female	30	3.48	.51			

*Significance level .05

From Table 4, it seems that there is difference in terms of the mean values for the male and female students with the mean of the females exceeding that of the males by .21. However, to test whether the difference in the mean values was statistically significant, an independent t-test was used. First, the Levene’s Test for Equality of variances indicated that the variances for the two groups were equal ($F = 3.378, .068 > .05$), and therefore a test for equal variances was used. The mean value of female Economics students’ perspectives on the use of technology ($M = 3.48, SD = .51$) is not significantly higher ($t = -1.511, df = 148, .068 > .05$) than that of the male Economics students ($M = 3.27, SD = .71$). Therefore, the null hypothesis is sustained.

Discussion of Results

The first research question of this study was to find out the various types of technology tools or devices that could be used to promote the teaching of Economics. The respondents (Economics students) indicated that computers, presenta-

tion software and projectors are the major types of technologies that can be used in teaching Economics. However, students acknowledged that radio, tape recorder, film strips and television/video and internet can not be used to teach Economics. The implication is that Economics students are probably not aware of these technologies as having the potential of enhancing the teaching of Economics. The results of the study are in sync with that of Fisher (2000) and Amengor (2011) who stated that computers, projectors, and presentation software can be used in teaching.

Research question two sought to find out the extent to which SHS Economics teachers use technology in teaching Economics. Results of the study showed that Economics teachers rarely make use of available technologies in the teaching of Economics. This may be that these technological tools are available in the various schools. This finding corroborates with the findings of Adebi-Caesar (2012) who opined that teachers rarely make use of computers in the teaching process. Further, Ayebi-Arthur, et al., (2009) echoed that majority of the teachers had access to the internet but hardly used it.

Research question three was meant to ascertain the Economics students' perspectives when technology is used in Economics lessons. The findings of the study revealed that Economics students' have positive perception towards the use of technology in the teaching of Economics. This implies that Economics students' support the use of technology in teaching Economics and also, they have positive attitude towards it thus more technologies should be used in the teaching of Economics. This result is consistent with the findings of Turan (2010) who stated that students showed positive attitude toward the use of technology in teaching. Again, the findings are in harmony with the findings of Gragert, (2000), Haddad and Drexler (2002), and Rampersad (2011) who emphasized that the use of technology in teaching stimulates the interest of students.

The research hypothesis sought to find out whether there is difference in the SHS Economics students' perspectives when technology is used in Economics lessons based on gender. On the basis of gender, results of the study could not show any statistically significant difference in the SHS Economics students' perspectives when technology is used in Economics lessons. The null hypothesis was consequently upheld. The implication is that both male and female Economics students have positive attitude towards the use of technology in the teaching of Economics hence more technologies should be provided to the various senior high schools.

Conclusion and Recommendations

The study was intended to explore Economics students' perceptions about the state of the use technology in the

teaching of Economics in selected Senior High Schools in the Central Region of Ghana. The findings of the study revealed that technological tools such as computers, presentation software and projectors, can be employed in the teaching of Economics. Again, it was found that Economics teachers rarely make use of available technologies in the teaching of the subject. Further, students were also found to exhibit positive attitude when technology is used in teaching. Finally, the study revealed that there was no significant difference in the SHS Economics students' perspectives when technology is used in Economics lessons based on gender. It is recommended that Ghana Education Service (GES) should organize seminars and in-service training for Economics teachers as way of exposing them to the types of technology and how to use them in teaching. Also, the Ministry of Education and GES should provide technological resources needed by schools.

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