



STRATEGIES TO ENHANCE TEACHING AND LEARNING OF COMPUTER SCIENCE IN JUNIOR SECONDARY SCHOOLS

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ABSTRACT

This study researched the strategies for effective teaching and learning of computer studies in the junior secondary school. Survey design was used for the study. Five schools were drawn for the study through simple random sampling technique. The researchers made questionnaire as the instruments used to collect data. Three research questions guided the study. The data for the research questions were answered using mean and standard deviation. The findings of the study revealed that the strategies to enhance teaching and learning of computer studies in the junior secondary schools lies within the ambits of adequate teaching and learning facilities; competent teachers and appropriate teaching methods. Based on the findings the researchers made some recommendations.

Keywords: Computer Studies, Competent Teachers, Teaching Methods, Junior Secondary School.

INTRODUCTION

The importance of computer cannot be over-emphasized considering its assistance to mankind in terms of business, industry, bank, Government & law enforcement, in biological, physical and social sciences, chemistry and physics, fine art, education, in home, etc. For instance, the computer is playing an increasingly important role in society, particularly in industrially developed countries. The application of computers to education cannot be over emphasized.

It has been observed that the introduction of computers and computer teaching in secondary schools and its implementation in many countries across the world came about as a result of policy pronouncement and the need to cope with the trend of science and technology (Crawford 2000 & Kirkman 2000). Generally, computers do not only play a significant role in the society, but also in schools which are drastically acquiring computers as an aid to facilitate learning (Guile, 1998). In a similar way, in order for learning to be effective within schools, computer literacy has to be integrated into the school curriculum (Richards & Nason, 1999). Notwithstanding the importance of computer literacy in every society, there is little evidence supporting the notion that computer science courses, is uncommon in Nigerian primary or secondary schools. Such courses and degrees are offered at the higher education level, but to reach that point of computer literacy takes extra self-motivation and that ICT is still not fully implemented in Nigerian school system as it should.

The teaching and learning of Computer Studies as it was stipulated by the National Policy on Education (2004) in Nigeria is one of pre-vocational subjects in the junior secondary schools. The aim and objectives of the federal government in these pre-vocational subjects is that at the end of nine years of passing through it, a student should

posses an appropriate level of literacy, numeracy, communication, manipulative and problems solving skills in order to be employable and useful to oneself and the society at large. The use of computer Assisted Instruction (CAI) in Education also requires in-depth knowledge of computer. Since our schools are sweeping along on the incoming tide of new teaching techniques. The old methods used in teaching and learning of Computer Studies are becoming increasingly inadequate.

According to Microsoft Encarta Dictionary (2009), a *strategy* is a carefully devised plan of action to achieve a goal, or the art of developing or carrying out such a plan. Oxford Advanced Dictionary also sees strategy as a plan that is intended to achieve a particular purpose or process of learning into something.

National policy on education of Nigeria (2004) regarded teaching and learning as a process by which information and knowledge is transferred. It is also seen as a process by which worthwhile knowledge and idea are been transferred in form of a given instruction between people.

Junior secondary school as it was stipulated by National policy on education (2004) in Nigeria is an educational institution for the children between the ages of 14-17 years. No wonder the world educational encyclopedia volume 3 says that government regards junior secondary school as an educational institution where the necessary infrastructure and training for the integration of information, communication and technology (ICT) in the schools. At this level of education, it is believed that the necessary skills and ideas have been acquired, but the standard of education is fast declining hence the need to investigate the strategies for effective teaching and learning of Computer Studies in junior secondary schools. The world is fast becoming a global village. For that, the use of computer in educational system is now a growing

phenomenon.

PURPOSE OF THE STUDY

The aim of this study is to determine the strategies to enhance the teaching and learning of Computer Studies in junior secondary schools.

The specific objectives of the study are to find out whether:

- i. Adequate teaching and learning facilities enhances the teaching and learning of Computer Studies in junior secondary schools
- ii. Appropriate teaching methods enhances the teaching and learning of Computer Studies in junior secondary schools
- iii. Competent teachers enhance the teaching and learning of Computer Studies in junior secondary schools

SCOPE OF THE STUDY

This study is focused on the students and teachers of the public and private junior secondary schools within the Abakaliki Education Zone of Ebonyi State.

The scope was also delimited to the strategies to enhance the teaching and learning of Computer Studies in junior secondary schools in Abakaliki Education Zone of Ebonyi State.

RESEARCH QUESTIONS

The following questions guided the researchers

- 1. Do adequate teaching and learning facilities enhance the teaching and learning of Computer Studies in junior secondary schools?
- 2. Do appropriate teaching methods enhance the teaching and learning of Computer Studies in junior secondary schools?
- 3. Do competent teachers enhance the teaching and learning of Computer Studies in junior secondary schools?

DESIGN OF THE STUDY

The design of this study was survey research. It is meant to study the perception of staff and students on the strategies to enhance the teaching and learning of Computer Studies in junior secondary school. Nworgu (2006) defined survey research “as one in which a group of people or items is studied by collecting and analyzing data from only a few people or items considered to be representative of the entire group”.

AREA OF THE STUDY

The study was conducted within the Abakaliki Education Zone of Ebonyi State. Ebonyi State is divided into three education zones, namely: Abakaliki, Onueke and Afikpo.

POPULATION OF THE STUDY

The population of the study comprised 60,145 students and teachers in all Junior Secondary Schools in Abakaliki

Education Zone.

SAMPLE AND SAMPLING TECHNIQUE

The sample for the study comprised of 80 teachers and 120 students drawn from sixty Junior Secondary Schools in Abakaliki Education Zone of Ebonyi State. Simple random sampling was used in the selection of the two hundred respondents.

INSTRUMENT FOR DATA COLLECTION

The instrument used for data collection is the structural questionnaire. The questionnaire contained 21 item questions. The respondents were to respond to each of the item of four (4) point option, they are: Strongly agreed = SA, Agreed = A, Disagreed = D strongly disagreed = SD.

RELIABILITY OF THE INSTRUMENT

The reliability of an instrument is the consistency of the instrument in measuring whatever it is assigned to measure. The reliability of the instrument was determined using Pearson Correlation. A reliability co-efficient of 0.87 was obtained.

METHOD OF DATA COLLECTION

The researchers employed direct delivery method in the administration of the instrument. Questionnaires were personally distributed to both the teachers and students. Teachers’ questionnaire was administered in their respective staff offices and collected back while those of the students were administered in their respective classes and collected immediately. This was to ensure timeliness and high rate of return.

METHOD OF DATA ANALYSIS

The data collected for this study was analyzed using the Mean and Standard Deviation.

RESULT

Research Question 1

Do adequate teaching and learning facilities enhance the teaching and learning of Computer Studies in junior secondary schools?

Table 1: Mean and standard deviation of responses of students and teachers opinions to support or disapprove the fact that adequate teaching and learning facilities enhance the teaching and learning of Computer Studies in junior secondary schools

S/ N	ITEM STATEMENT	NO. OF RESP.	SA	A	D	S D	\bar{X}	STD	DEC.
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1	Conducive school environment enhances teaching and learning	200	112	73	8	7	3.45	0.73	Accepted	7	Availability of functional computer system enhances students attitude to learning	200	181	19	0	0	3.91	0.29	Accepted
2	The availability of good Computer Studies textbooks enhances learning	200	67	130	3	0	3.32	0.50	Accepted	GRAND MEAN							3.50	Accepted	
3	Availability of functional computer system enhances the learning of Computer Studies.	200	189	11	0	0	3.95	0.23	Accepted										
4	Maintenance of the computer system is essential for effective teaching.	200	114	83	3	0	3.56	0.53	Accepted										
5	Provision of computer system and their accessories promotes learning	200	45	150	2	3	3.19	0.51	Accepted										
6	Conducive learning environment enhances students' attentiveness	200	29	168	3	0	3.13	0.38	Accepted										

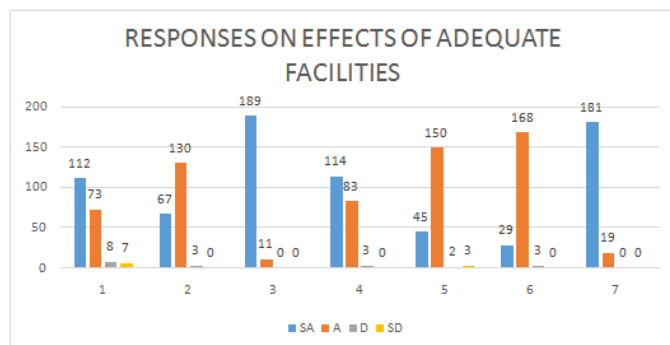


Fig. 1: Bar chart showing the distribution of students and teachers opinions support or disapprove the fact that adequate teaching and learning facilities enhance the teaching and learning of Computer Studies in junior secondary schools.

From the table 1 above respondents positively agreed on 7 items. The grand mean score in table 1 above is 3.50 and therefore, accepted. What this means is that adequate teaching and learning facilities enhance the teaching and learning of Computer Studies in junior secondary schools.

This finding is in agreement with Onyejemezi (1997) who opines that for an enhanced teaching and learning of Computer Studies, the method of teaching should not be by theoretical aspect alone rather it will be by practical demonstration; this is to mean that computer system is very much important since its subject learners is real presentation of theory. It is a known fact that computer cannot be taught effectively without the necessary equipment such as instructional aids. In this case instructional materials represent the real objects of abstract thereby motivate them Betiku (2002). Akililaya (2001) also noted that uncondusive environment for learning can lead to poor learning attitudes on the part of both the teacher and students. Adequate teaching and learning facilities must be provided in schools to enhance the teaching and learning of Computer Studies in junior secondary schools.

Research Question 2

Do competent teachers enhance the teaching and learning of Computer Studies in junior secondary schools?

Table 2: Mean and standard deviation of responses of how students and teachers opinions support or disapprove the fact that competent teachers enhance the teaching and learning of Computer Studies in junior secondary schools

S/N	ITEM STATEMENT	NO OF	S	A	D	S	X	STD	DEC.
			A			D			
1	The availability of qualified Computer Studies teachers enhances learning	2003	136	66	1	0	3.66	0.48	Accepted
2	The knowledge of the teacher of the subject affect learning outcome	2000	52	145	1	3	0.25	0.46	Accepted
3	Teachers' dedication to teaching affects the teaching and learning process	2002	18	57	8	0	3.96	0.20	Accepted
4	Inconsistent government polices is a reason for poor teaching habits of teachers	2000	57	19	1	1	2.61	0.96	Rejected
5	Conducive environment enhances teachers attitude to teaching and learning	2005	14	52	3	0	3.71	0.49	Accepted
6	Students' attitude to learning promote teacher attitude to teaching	2000	23	19	1	3	1.88	0.44	Rejected

7	Proper teacher remuneration promotes teacher attitude to teaching	2000	15	9	1	1	3.58	0.87	Accepted
GRAND MEAN							3.23	Accepted	

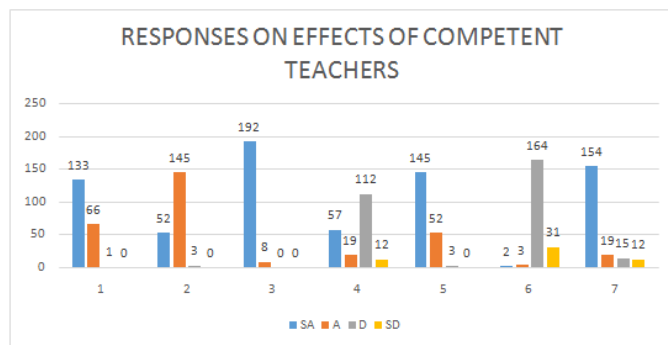


Fig. 2: Bar chart showing the distribution of responses of how students and teachers opinions support or disapprove the fact that competent teachers enhance the teaching and learning of Computer Studies in junior secondary schools.

From the table 2 above, 2 items were rejected while the remaining 5 items were accepted. The grand mean score is 3.23 is therefore accepted. The implication of this finding suggests that competent teachers enhance the teaching and learning of Computer Studies in junior secondary schools.

This finding is in correspondence with Alex (1998) who opines that although teachers are often not the official policy makers on curriculum content but they decide on how a lesson can be presented since they are the executors of the curriculum content. Failure or progress of students depends on them, in fact there is supposed to be a visible character in which the learner is to build upon. Maswem (1993) opines that teacher' attitude acts as a transitional nature of culture. Since no educational system can rise above the quality of its teachers. The high or low standards of education do not start and end with the learner but the teachers.

According to Anyanwu (1999) the success of educational organization must be measured finally in terms of influence of teachers as executors of laudable objectives which reflect to his competent. Badmus (1995) stated that the current trends of thinking in Computer Studies involves not only the use of textbooks but also the use variety of supporting material which requires a teacher who is highly knowledgeable, especially on those that can help to present vivid vicarious experiences. Considering the opinion that though teacher are not often the official policy on curriculum but responsible for curriculum implementation, they decide the way by which the content

of curriculum can be delivered in order to achieve the objective hence, the need to engage qualified and competent teachers in the junior secondary schools.

Research Question 3

Do appropriate teaching methods enhance the teaching and learning of Computer Studies in junior secondary schools?

Table 3: Mean and standard deviation of responses of how students and teachers opinions support or disapprove the fact that appropriate teaching methods enhance the teaching and learning of Computer Studies in junior secondary schools

S / N	ITEM STATEMENT	NO. OF	S	A	D	S	X	SD	DEC.
			A			D			
1	Teaching methods affects teaching and learning of Computer Studies	200	37	145	15	3	3.058	0.56	Accepted
2	Inadequate teaching strategies inhibit effective teaching of Computer Studies	200	96	97	6	1	3.44	0.58	Accepted
3	Provision of skilled computer teachers will enhance teaching and learning of computer	200	99	96	5	0	3.47	0.55	Accepted
4	Inadequate teaching materials affects teachers' teaching methods	200	100	93	3	1	3.49	0.56	Accepted
5	Conducive environment enhances teachers' teaching methods	200	22	87	61	30	2.51	0.88	Rejected

6	Students' attitude to learning affects teachers' methods of teaching	200	20	98	73	6	2.69	0.71	Rejected
7	Teaching methods of computer teachers stimulate students interest in computer	200	80	63	50	0	3.14	0.82	Accepted
GRAND MEAN							3.12		Accepted

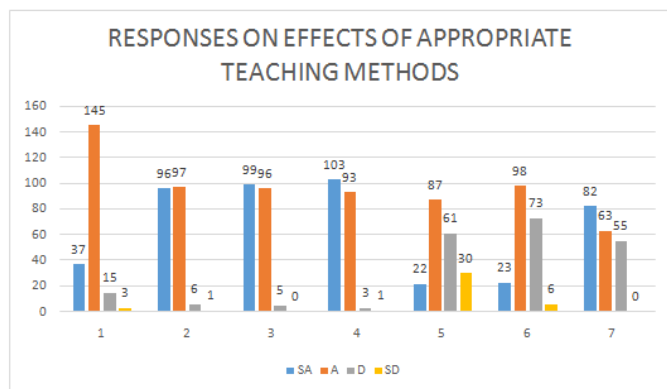


Fig. 3: Bar chart showing the distribution of how students and teachers opinions support or disapprove the fact that appropriate teaching methods enhance the teaching and learning of Computer Studies in junior secondary schools.

From the table 3, respondents positively agreed on 5 items and rejected 2. The grand mean score in table 3 above is 3.12 and therefore, accepted. The implication of this finding indicates that appropriate teaching methods enhance the teaching and learning of Computer Studies in junior secondary schools

This result agrees with the fact that teaching methods and techniques stands as a stimulation instrument in the area of teaching and learning as Fisman (1998) rightly opines that stimulation places an individual in a realistic setting where he is confronted by a problematic situation through the use of appropriate method in communicating with learners. Teaching methods requires active participation in initiating and carrying out sequence of inquiries. An appropriate teaching method has characters of stimulation of great educational value, which is why the learners exercise a large measure of control over the problem or situation. According to Gagne (1962) in Onyimadu (1999), learning is enhanced and errors minimized because distracting instructional goals are omitted but the used techniques help to overcome the stumbles. The potentials

of teaching methods as instructional tools have been inadequately explored in virtually all academic disciplines. There is evidently ample justification for the use of teaching techniques in teaching science in Nigerian schools. Dale (1990) states that learning theories agree on the efficacy of the use of appropriate techniques/methods with concrete referrals and real objects in bringing about meaningful learning. He continued to state that when we provide experience through stimulation we represent the original reality in a high modified fashion in order to make it more readily accessible to students understanding. It is noteworthy that even where real object is available, and there is a full functioning science laboratory, methods and techniques would still be relevant in science class situation in order to fully expose the learners to relevant learning experience mostly in all the pre-vocational subjects like computer.

SUMMARY OF FINDINGS

The following are the major findings of the research work:

- i. Adequate teaching and learning facilities enhance the teaching and learning of Computer Studies in junior secondary schools
- ii. Competent computer teachers enhance the teaching and learning of Computer Studies in junior secondary schools
- iii. Appropriate teaching methods enhance the teaching and learning of Computer Studies in junior secondary schools.

CONCLUSION

This work was based on the strategies to enhance the teaching and learning of Computer Studies in junior secondary schools. The researchers were able to find out with the help of the questionnaires given to respondents that the strategies stated were agreed to be true as the scores were calculated with the use of mean. It was discovered that most of the respondents agreed to the items given to them. It was also discovered that the strategies to enhance teaching and learning of Computer Studies in the junior secondary schools lies within the ambits of adequate teaching and learning facilities; competent teachers and appropriate teaching methods.

RECOMMENDATIONS

Based on the findings, the researchers recommend as follows

1. Government should provide qualified teachers to teach Computer Studies.
2. The government should train and retrain more teachers who will have better attitudes, competences and methods to teaching and learning.
3. More computer systems should be provided alongside with their accessories.

4. Appropriate teaching methods and techniques should be used to teach Computer Studies in the junior secondary schools as will be enforced and monitored by the education inspectorate.
5. The learning environment should be made conducive by providing some infrastructural facilities.

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