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(RESEARCH ARTICLE)

Teachers' perception towards importance and acceptability of computer science education in secondary school curriculum in Ijero Local Government, Ekiti-State, Nigeria.

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Abstract

This study was essentially carried out to generate opinions and perceptions of teachers in rural settlements of Ijero local government area of Ekiti State Nigeria towards importance of Computer Science Education in Secondary School curriculum. This study adopted the descriptive survey method using self- structured questionnaire to collect data from teachers randomly selected in Seven Secondary Schools owned by Government, Private and Christian mission in Ijero Local Government area of Ekiti State. The population of the study include all secondary school teachers in Ijero-local government area of Ekiti State, Nigeria. A sample population of 140 teachers was used for the study. The research instrument used was a questionnaire entitled "Teachers' perception towards importance of Computer Science education in secondary schools curriculum in Ijero local government, Ekiti -State". A descriptive statistics of frequency count and percentage was used to generate opinions and level of acceptability of teachers in the study area towards teaching computer science education in secondary schools. Findings revealed that higher percentages of the teachers agreed that computer science education should be introduced in secondary school they are of the opinion that it will improve the level of proficiency and adaptability of both students and teachers to computer knowledge and information technology especially in the rural settlements where facilities are observed to be inadequate.

Keywords: Education; Computer science; Curriculum; Perception; Secondary school; Ekiti-State

1. Introduction

The fast growing rate of Information and Communication Technology (ICT) in contemporary time has considerably revolutionized the educational sector into making teaching and learning more accessible and flexible. In spite of the challenges associated with computer application in education, it has provided flexibilities in teaching and learning. For instance, introduction of computer science to facilitate learning among students in rural settlements is highly purposeful to achieving good academic performance. With this relevance, the emergence of educational technology research has considerably delved into evaluating the influence of using computer in teaching and learning through research. Research in this regard is mostly concerned with the impact of ICT on students' academic engagement and performance [1].

Computer is a tool invented through modern technology in order to perform certain tasks which can otherwise perform manually though with longer time and greater effort. At the most elementary level, computer may be described as automatic, electronic data-processing machine. [2]

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The existence of computer has been year's back as equally described by Kremer (2005) [2]. It is an electronic device that operates with remarkable speed and reliability. Computer was not initially perceived as a scientific field of study until around fifties when it becomes popular among academic scholars. Computer science is now regarded as science that deals with theory and method of processing information in digits.

It is important to know that early scientists created computer to solve mathematical problems. [3]. However, in these contemporary times, computer has been useful in all areas of life as the knowledge of computer is now required to access and apply information. It is quite worrisome that the pace of computer application in Nigeria is still low as particularly observed in semi –urban and rural settlements.

Emergence of technology has brought vital changes in many aspect of societal and individual life. In this wise, technology significantly influenced the way education at all levels was done. Being an innovative tool, it is required in improving teaching and learning in light of educational reforms around the globe.

It is therefore the opinion of researchers that integrating technology and education can enhance effective teaching and learning activities in ways that can support student-centered teaching with more active student involvement in the learning process [4] [5].

Since objectives of promoting technology is to enhance education, It is therefore of primary importance to look into what teachers perceive of technology and how it was adapted to education, the knowledge and skills they need to further develop. In his study in Egypt, Sadık (2006) [6] reported that the more positive teachers' attitudes were toward technology the more likely they were to integrate it in the classroom.

Computer literate teacher must therefore demonstrate the following qualities:

- They must know the use and limitation of computer in the classroom.
- The teacher should know the basic operational scheme of a computer.
- The teacher should be able to read and write simple programme.
- The teacher must be able to operate at least a micro-computer.
- The teacher should be able to discuss the importance of computer, citing its use(s) in the homes in business and in Education.

In the light of this, Edelson [7] opined that secondary school or secondary education is essential for the creation of effective human capital in any country. However, he stressed the need to include computer science in the education curriculum of Nigeria secondary schools. Students in secondary school needs to acquire necessary skills in computer knowledge in order to compute adequately in this Information and Technology –driven age.

2. Research purpose and questions

The purpose of this present study was to add a perspective to the international literature on integrating technology in education through exploring secondary school teachers' perceptions on the importance of computer science education as related to their demographic characteristics. This research was intended to explain what affected teacher use of technology and computers in secondary school context particularly in rural and semi-urban settlements.

For the purpose of this study, teacher perceptions were meant to include computer attitudes as well as technological dexterity, confidence and acceptability at all levels in using computing technology for education.

The specific research questions that guided this work were the following:

- What is the teachers' perception towards importance of Computer Science Education for students in Secondary Schools?
- What is the teachers' perception towards acceptance of Computer Science Education among Secondary School teachers?
- What are the benefits of Computer Science Education among Secondary School teachers in Ijero Local Government, Ekiti State.?

3. Methodology

3.1. Research design

A descriptive survey research was used in this research work and this would be helpful to investigate and collect data to obtain relevant information from teachers in secondary schools in Ijero Local Government, Ekiti State on their perceptions towards Computer Science Education.

3.2. Population

The population used comprises of all the teachers of Public, Private and Mission Secondary schools in Ijero Local Government, Ekiti State.

3.3. Research instrument

The research instrument used for this study was a questionnaire. The questionnaire for this study has two sections. Section A focused on the demographic characteristics of the respondents. Section B is a closed type of questionnaire i.e they are the type of questions which the respondent will tick (agree) or (disagree). Since the study was designed to generate opinions on teachers' perception towards importance and acceptability of Computer Science Education in Secondary School curriculum.

3.4. Sample and sampling procedure

One hundred and forty (140) teachers from seven (7) Secondary Schools in Ijero Local Government, Ekiti State were randomly selected out of the Secondary schools in Ijero Local Government, Ekiti State. Therefore thirty teachers were randomly chosen in each of the seven schools to comprise both male and female teachers

3.5. Administration of the Instrument

The administration of the instrument was carried out by the researcher on personal contact with the correspondent. Questionnaires were distributed to the teachers who are respondents in seven (7) selected secondary schools. Explanation and instruction on how to complete the questionnaire were clearly spelt out to the teachers through self-interview.

4. Results

Table 1 Demographical data of the respondents

Gender Distribution of Respondents	Frequency	Percentage
Male	90	64.3%
Female	50	35.7%
Total	140	100%
Distribution by Marital Status		
Single	17	12.1%
Married	123	87.9%
Total	140	100%
Age Distribution of the Respondents		
20-30	39	27.0%
31-40	59	43%
41-50	21	15.0%
51-60	21	15.0%
Total	140	100%
Distribution of Respondent by academic qualification		
NCE	22	16.9%
BSC (ED)	96	68.6%
MSC	20	14.3%
Total	140	100%

From the table above, 64.3% of the respondents were male while 35.7% were female, it shows that proportion of male teachers in the study area was higher significantly than females, this may also account for higher prevalence of favorable perception towards computer application among secondary schools teachers in the study area. Equally, 70% of the respondents were below 40 years of age. Majority of the teachers interviewed were in their active and productive ages. Also, about 82.9% of the respondents were holder of first degree and above which may serve as an advantage for adaptation to computer application among secondary school in the study area.

Table 2 Assessing teachers' perceptions towards the importance and acceptability of computer education among secondary schools in Ijero Local Government, Ekiti State.

S/N	Research Question	Agree	%	Disagree	%
QA	What is the teachers' perception towards of importance for Computer Science Education for students in Secondary Schools?				
1	Students' attitude to their studies will change as a result of using computer.	138	98.27	2	1.43
2	Computer education will enable students to operate computer now and after secondary school.	115	82.14	25	17.86
3	Computer is useful in information, calculation and secondary school record retrieval.	109	77.86	31	22.14
4	It can be used in Secondary Schools as a full interactive tutor.	65	46.44	75	53.56
	Total Average	107	76.25	33	23.75
QB	What is the teachers' perception towards acceptance of Computer Science Education among Secondary School teachers?				
5	It is good to be computer literate to enhance facilitation of learning	96	68.6	44	31.4
6	It is necessary to introduce computer science education in secondary schools in Ijero Local Government	134	95.7	6	4.3
7	Computer Education will improve the knowledge of students significantly in all aspects of education.	132	94.3	8	5.7
8	State Government/Proprietor of schoosl should equip secondary school with functional computer systems and updated soft wares.	128	91.4	12	8.6
	Total Average	122.5	87.5	17.5	12.5
QC	What are the benefits of Computer Science Education among Secondary School teachers in Ijero Local Government, Ekiti State?				
9	Introduction of computer science education in secondary schools will influence teachers to personally have computer.	132	94.3	8	5.7
10	Introduction of computer science education in secondary schools will motivate the students towards computer profession as their future career	138	98.6	2	1.4
11	Introduction of computer science education will lead to laziness in some teachers.	134	95.7	6	4.3
12	It will give opportunities to other teachers to be computer literate	128	91.4	12	8.6
13	It will improve the standards of education in secondary schools.	80	57.1	60	42.9
	Total Average	122.4	87.42	17.6	12.58

The data presented on table 2 assessing teachers' perception towards the importance and acceptability of Computer science education among secondary schools in Ijero Local Government, Ekiti State shows that 98.57% of the

respondents agreed that students' attitude to their studies will change as a result of using computer while 1.43% of the respondents disagreed. Also 82.14% of the respondents believed that computer science education will enable students to operate computer, 17.86% respondents disagreed. Similarly, 77.86% of the respondents agreed with the fact that computer is useful in information, calculation and secondary school record retrieval while 22.14% disagreed, and lastly 53.56% of the respondents disagreed that computer can be used in secondary schools administration as a full interactive tutor.

From the analysis, respondents have optimistic believe that there is need for computer education in Secondary schools. Also, the data above shows that 68.6% of the respondents agreed that being computer literate as teachers will facilitate learning while 31.4% of the respondent disagreed. Equally, the table shows that 95.7% respondents agreed that computer science education should be introduced into secondary schools while only 4.3% of the respondents disagree. It further shows that 94.3% of the respondents supported the fact that Computer Science Education will improve the knowledge of the students while 5.7% disagree. It also shows that 91.4% of the respondents agreed that the State Government should equip secondary schools with functional computer system. The data reflected that 94.3% of the respondents agreed with the statement that introduction of computer science education in secondary schools will influence teachers to personally have computer while 5.7% of the respondent disagree. Also 1.4% of the respondents disagreed with the fact that introduction of computer science education in secondary schools will motivate the students choosing computer profession as their future career while 98.6% agreed. It further shows that 95.5% of the respondents disagreed with the statement that introduction of computer will lead to laziness in some teachers while 4.3% of the respondents disagree. Also, 91.4% of the respondents agreed with the statement that introduction of computer science education will give opportunities for other teachers to be computer literate while 8.6% of the respondents disagree. Finally, 57.1% of the respondents agreed that introduction of computer science education will improve the standard of education in Secondary Schools.

It can be inferred that majority of the teachers in the study area agreed that computer science education should be introduced in secondary schools as it will reposition both students and teachers to be of advantage in solving contemporary challenges.

5. Discussion

From the result above, it is evident clear that majority of the respondents (teacher) in the study area agreed and hold positive opinions on the importance for Computer Science Education for students in Secondary Schools, higher percentage of the respondents agreed that introduction of computer science education will improve the altitudes of students towards education and enable them to be proficient in Information and Communication Technology as it can equally enhance teacher-students interaction among secondary schools. This agrees with the position of Apeanti (2014) [8] who described ICT as an important instrument in information and knowledge management. According to the researcher, ICT forms the core component of teaching and learning in this 21st Century. Equally, Claro (2012) [9] reported that the use of ICT in education helps to facilitate teaching and learning in the school settings. With the use of ICT in learning environments for example, students are able to take lessons remotely at anytime and anywhere provided there is active internet connectivity.

In the same vein, according to research question 2 most respondents agree on the acceptability of computer science education in secondary school teachers, and agree that it enhances learning and can significantly improves on knowledge in all aspects of education, most respondents however believe that government and private school owners should fund Information Communication and Technology (ICT) in secondary schools. This level of acceptability may not be unconnected to higher percentage of male respondents as earlier established in previous findings [6] that a gender relationship with positive attitudes toward computers in favor of males.

Equally, a study conducted in Australia indicated that full-time female teachers in 2005 were less confident than the male teachers when using ICT in teaching and learning environment. [10] Similarly, research [11] shows that the use of ICT tools by male teachers in classroom is higher compared to female teachers. Also, most respondents agree that is good to be computer literate which agree with Miller (1992) [12] that the goal of using computers in schools produce computer literate person rather than producing mere users of computers. Equally, positive attitude towards acceptance of computer science education in the curriculum agrees with the various studies conducted in different countries on teacher attitudes, including Turkey, which revealed positive attitudes toward technology and computer application. [13] [14] [15]

Finally, most of the respondents agree on the benefits of computer science education which include positive influence on teachers to personally have computer and improvement in general standard of Education. This however agrees with

Silviyanti and Yusuf [16] who noted that teachers with e-readiness can use and adopt technologies into their classrooms when perceive that technology can be a useful tool in delivering quality lessons in a learner centered learning environment. Angers and Machtmes [17] equally stated that technologies are the important tools which adds value to the lessons, and to the students learning and motivation and Ajda K, Neşe Ş, & Şebnem Genç (2011) [18] equally reported that computer application in high schools has influence on the number of teachers that have personal computer.

6. Recommendations

Following are the recommendations from the study:

- There should be professional development and training programs with a focus on educational computing as strongly needed for in-service teachers, this was in line with the existing literature. [19] [20]
- Training programs need to be designed in different levels covering basic computer literacy skills using computers in the classroom.
- Teachers are expected to be supported with incentives which include laptops, and Information Education Communication (IEC) materials to enhance their proficiency in computer application.
- Teachers over a certain age need to be encouraged in more distinctive ways to be involved in-service computer training. Similarly, female teachers may need more attention and opportunities for computer applications practice.

Government and Private school owners should equip schools with functional and updated Information Communication and Technology (ICT) particularly in semi-urban and rural settlements.

7. Conclusion

Researches focusing on teachers' perceptions on introduction of computer science education into the curriculum among secondary schools is rather important in the process of shifting to student centered activities in this contemporary times most especially as concern semi –urban and rural settlements in Africa. Although the findings of the current study are not statistically generalizable, a number of factors such as computer ownership, gender and attitude agree with patterns of the research findings of the existing literature. These factors were found to be also influential on teachers' computer perceptions. Results of this study may be used to inform policy makers, curriculum developers, teacher educators, and all stakeholders involved in education to update learning capacity as related to computer application among secondary schools in the study area.

Compliance with ethical standards

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Disclosure of conflict of interest

There is no conflict of interest declare for the study.

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