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TEACHERS COMPETENCY AND AVAILABILITY OF FACILITIES AS CORRELATES OF EFFECTIVE COMPUTER EDUCATION IN SELECTED SECONDARY SCHOOLS IN BORNO STATE, NIGERIA

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Introduction

This age is popularly known as technological age in which computer is most widely used. Computer has been found useful in many areas of knowledge like communication, banking, engineering, commerce, space exploration and even education is not left out of the revolution. Through computer assisted instruction, problem situations can be presented to students to guide their thinking, respond to their questions and also manage their performances i.e. computer in essence is used to instruct so as to achieve the desired level of proficiency (Jenkins & Springer, 2002). In teaching, computer has radically changed teachers' professional development through constant update of their knowledge on the last technologies and in content areas.

Abstract

This paper investigated the correlate of teachers' competency and teaching facilities available to computer education in Borno State secondary schools. Aspects investigated included personnel involved in the teaching of computer. Subjects were 50 teachers randomly selected from 10 secondary schools. Subjects responded to a validated questionnaire with 0.76 reliability co-efficient obtained through Pearson Product-moment reliability formula. Instrument was administered personally by the investigator. Data collected were treated by the use of frequency counts, percentages and Pearson product moment statistics. Findings revealed that trained teachers' in computer education were inadequate and the infrastructural facilities (hardware and software) were equally inadequate. Insufficient

Facilities and low teachers competency on computer has negatively affected computer education in Borno State. It was therefore recommended that personnel recruited to teach computer education be trained and that appropriate software and hardware be provided to ease the teaching and learning of computer in Borno State secondary schools.

Keywords: *Facilities, Teaching, Competency, Computer, Effective, Correlated, Secondary School Students*

Computer has also had tremendous impact on the school social system. It has improved the motivational level of students to learn, to stay and behave better in school and has been a tool in ensuring a safe school environment as improved communication is facilitated among parents, teachers, students and administrators.

Computer education was introduced into Nigerian education system in the late 1980s based on the recommendation of the 32nd Ministerial Council meeting of the National Council on Education in 1987. The pilot scheme for the program was started with the Federal Government College (FGC) or Unity Schools and the Armed Forces Secondary Schools in 1988. The computer systems were introduced into the Federal Unity Schools throughout the Federation in 1989. The National Policy on Education (2004) gave prominence to Computer Education. It was made a pre-vocational and vocational elective at both the junior and senior secondary levels. This was clearly stated under section 5(30) of the FRN 2004 that "Government shall provide necessary infrastructure and training for the integration of ICT in the school system in recognition of the role of ICT in advancing knowledge and skills in the modern world".

The general objectives of the National Computer Policy (1988) include:

1. bringing about a computer literate society in Nigeria by the mid-1990s.
2. enabling present school children to appreciate and use the computer in various aspects of life and in future employment.

The modalities and strategies for achieving the stated objectives include:

- Training teachers and associated personnel.
- Hard ware facilities. Curriculum development.
- Software developments and evaluation.

- Maintenance of hardware and peripherals.

In this era of globalization, Nigeria has no option than to join the other parts of the world in the race for information and technological improvements. Introduction and use of computers in Nigerian educational system and introduction into the curriculum are not devoid of problems. The policy, like any others is characterized by implementation problems. The problems succinctly stated by Okorie (2006) as lack of strong leadership, inadequate support, scanty provision of in-service training of teachers, inadequate funding and facilities and increasing students population resulting into overcrowded schools. In the implementation of computer policy in Nigerian schools, teachers must be competent in the use of computers. Teacher's beliefs and self-efficacy on the use of computers are the necessary ingredients to effective use of computers in schools. Self-efficacy here is the teachers' belief in their competence to make use of computer hardware and software. One of the greatest barriers to proper computer education is the shortage of trained teachers. Many teachers do not know how to use computers and other modern information media. In fact more students are better exposed to the use of computers through their social interactions with friends and cyber cafes.

Apart from teachers' competency which happens to be a major setback to the implementation of the computer policy, the adequate supply or provision of computer facilities is a necessity to make the policy successful. Facilities like rooms or laboratories to accommodate both the hardware and software. The alternate sources of power supply are all very important. Many a times, a few computers provided to some schools are kept in a room and are allowed to gather dust. Adequate infrastructure facilities become a problem in many secondary schools in Kwara State. Introduction of computer education into Nigerian secondary schools would be a fad if adequate materials and facilities are not supplied.

Statement of the Problem

In essence, the competence of computer teachers could be measured, apart from their knowledge of the subject, in terms of the care and maintenance of computers in their care. Since no empirical evidence has been provided to support these areas among teachers of computer in Borno State secondary

schools. It is against this background that this study was designed to investigate the competence of the teachers teaching computer education and other teachers' knowledge of computer in Borno State secondary schools. In addition, the study investigated the facilities possessed by the secondary schools in the teaching of computer education. Towards this end, the following research questions were addressed to direct the study.

Research Questions

1. How competent are the Borno State teachers?
 - in their knowledge of computers.
 - Training received in computer education.
 - Certification in computer education.
 - Their use of computer.
2. Do Borno State secondary schools have facilities for the teaching of computer education to the students?
 - Are the facilities adequate for teaching of computer?
 - How are facilities (hardware and software) procured?
 - How are they maintained?

Hypotheses

- H₀₁: There is no significant relationship between teachers' competency on computer and their availability in Borno state secondary schools.
- H₀₂: There is no significant relationship between teachers' proficiency and computer education in Borno state secondary schools.

Research Method

The study investigated the competency of teachers and teaching facilities of computer education in Borno State. The design adopted for the study was a correlative one. This was considered appropriate by the researcher to give a description on the competency of teachers and facilities available for computer education. The study covered the Borno State secondary schools. A total of 10 secondary schools were randomly selected. The Principals/Vice Principals of selected schools responded to the principals' questionnaire while 50 teachers who were randomly selected from all the 750 teachers employed to teach in the 10 secondary schools responded to Competency and Knowledge of Teachers of Computer Questionnaire.

The instrument used were an adaptation of the research questions from internet, a study conducted on the Federal Government Colleges of Nigeria on computer education. The Principals/Vice Principals responded to the Facilities Questionnaire i.e. facilities available to the school on computer while the teachers responded to their knowledge and their competency on computer education. The questionnaire were face validated by experts and also pretested using split-half method of which the reliability co-efficient were 0.78 and 0.82 respectively using the Spearman Brown Prophecy formula.

The researcher administered the questionnaires in the sampled schools. All the instruments were returned and this facilitated the statistical analysis of the study. The data gathered were analysed using frequency counts, percentage and Pearson product moment correlation statistics. The results emanating from the data are presented below.

Results and Discussion

The results of the analysis emanating from the study are presented in four tables as follows:

Table I:

Qualifications of Respondents

Qualification	With Computer		Without Computer		Total	
	Frequency	%	Frequency	%	Frequency	%
SSCE/NECO	9	3.60	11	4.40	20	8.0
OND/HND/NCE	15	6.00	60	24.0	75	30.0
MA/B.Sc/E.ed	2	0.80	103	41.2	105	42.0
MA./M.Sc/M.Ed/ MBA/MPA	3	1.2 47	18.8	50	20.0	
PhD	-	-	-	-	-	-
Total	29	11.6	121	87.8	250	100

Result from table 1 showed that nine teachers representing 3.60% of the respondents were SSCE or NECO who had computer education that teach in some secondary schools in Borno State. This qualification is below the minimum teaching qualification in Nigeria as stipulated by the National Policy

on Education (2004). OND/HND though without teaching qualification are employed to teach in Borno State secondary schools were 15 in number constituting 6.0%. B.A. /B.Sc. /B.Ed, form the majority of teachers in Borno State schools. They form 42% of the total respondents but just 0.8% were computer literate. The higher qualifications of MA/M.Sc./M.Ed./MBA/MPA who were 20% of the respondents had only 1.2% computer literate. The total subjects who were literate were 29 representing 11.6% of the total respondents.

Table 2:
Availability of Computer Facilities

S/No.	Items	Frequency	Percentages
1.	Rooms/Computer laboratory	5	60.0
2.	Air Conditioners	8	32.0
3.	Functional Computers	15	60.0
4.	Generator	8	72.0
5	Laptops	0	0
6.	Desktops	15	60.0
a)	Monitors	15	60.0
b)	CPU	15	60.0
c)	Keyboards	17	68.0
7.	Printers	12	48.0
8.	UPS	12	48.0
9.	Diskette	15	60.0

From table 2, out of the 25 sampled schools, 15 schools representing 60% had rooms or laboratory where they put the computers. 32% of the schools had air conditioners to either their computer laboratory or offices. 72% had generating set to provide alternate source of power supply. No school had laptops which was 0%.

The accessories for the desktops were the Monitors, CPU, and keyboard. All the 60% school that owned computers had monitors, CPU and keyboards. The computers ranged from two in some schools to 20 in the two schools which the MTN provided to Borno State schools. The computer policy stated that there should be eight computers per school (National Computer Policy,

1988). From the data above, it was evident that the policy had not been realized. In present day schools, the population of the schools, especially the public schools in the urban areas that have 70 students in a class, the 8 computers per school is inadequate because this was based on 40 students in computer class number. The shortfall in the number of computer results into use of many hours to teach actual class population which is rather high. The life span of the available computers will also be decreased. Learning becomes more difficult, cumbersome and uninteresting when there are a few computers to many students. This produces more illiterates in computer appreciation than a well studied class that can make computers to be an advantage to broaden their knowledge, understanding and horizon.

Table 3

There is no significant relationship between teachers' competency on computer and their availability in Borno State secondary schools.

Relationship between teachers competency and computer availability of facilities in Borno State secondary schools

Variables	N	\bar{X}	SD	SD	F-value	Critical Value	Decision
Teachers CompetAvailability	250	2.0924	.2426	249	.927	.195	Significant

Table 3 shows that the calculated r-value of .927 is greater than the tabulated r-value of .195 at .05 level of significant for 249 degrees of freedom. The null hypothesis, which states that there is no significant relationship between teachers competency and computer availability is rejected. That is to say, there is a statistically significant relationship between teachers competency and computer availability.

Table 4

There is no significant relationship between teachers proficiency and computer education in Borno State secondary schools.

Correlational Analysis between teachers proficiency and computer education in Borno State secondary schools

Variables	N	\bar{X}	SD	SD	F-value	Critical Value	Decision
Teachers Competency	250	2.0924	.2395	249	.920	.195	Significant
Computer Availability	250	2.0881	.2467				

Table 4 shows that the calculated r-value of .920 is greater than the critical r-value of .195 at the .05 level of significant at 249 degrees of freedom. The null hypothesis, which states that there is no significant relationship between teachers competency and computer availability is rejected. That is to say, there is a statistically significant relationship between teachers proficiency and computer education.

Table 5:

Sources of Maintenance of Facilities

S/No.	Items	Frequency	%
1.	Borno State Ministry of Education	2	8.0
2.	Parents Teachers Association	16	64.0
3.	Principals	5	20.0
4.	Other organizations, e.g. MTN, etc.	2	8.0

Table 5 concerned with sources of maintenance of facilities from the table. The Borno State Ministry of Education and other organizations i.e. MTN had 8.0% maintenance score. On the other hand, PTA and principals had 64.0% and 20.0% respectively. There is no gain saying that having a good maintenance process prolongs the lifespan of a machine. Though the government involvement was low, it shows concern going by the result of the study.

However, PTA had much more input in facility maintenance. Should this be so? No. The government responsible for supply should maintain it. It is a common occurrence that when government supplies materials and facilities, they are not maintained. Fadipe (1998) said, it is imperative for a school head to find ways of taking care of physical facilities. While Olagboye (1998) also identified three types of maintenance as preventive, corrective and

breakdown maintenance. These three types of maintenance should be carried out on the computers and accessories.

Conclusion

Based on the results of the study, the following can be discerned:

- ⇒ Teachers in Borno State secondary schools did not have competent teachers to teach computer education.
- ⇒ The facilities to teach computer education are grossly inadequate.
- ⇒ The supplier of the facilities should be responsible for their maintenance.
- ⇒ There is no significant relationship between teachers proficiency and computer education in Borno State secondary schools.

Recommendations

In view of the results obtained, it is recommended that:

- ⇒ Teachers in secondary schools should be compelled to undergo courses in computer education. It can be in form of seminars, workshops and in-service training.
- ⇒ Proprietors of these secondary schools should ensure that they improve on the facilities to guarantee that teachers are efficient in teaching and pupils are enticed to learning of computer in secondary schools of Borno State.
- ⇒ Computer education should be incorporated into B.Ed./ B.Sc.Ed/ B.A.Ed degree programs so that before graduation, teachers would already be computer literate.

If necessary steps are taken to train teachers who would be able to use computer in everyday teaching and adequate facilities are provided and maintained, computer education may be a good innovation in the Nigerian educational system as in the case of other technologically advanced countries

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