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COMPUTER LITERACY AND SECONDARY SCHOOL TEACHERS' JOB EFFECTIVENESS IN KWARA STATE, NIGERIA

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Abstract

This study investigated the relationship between computer literacy and teacher's job effectiveness of secondary schools in Kwara State, Nigeria. The study was a correlation survey. Stratified random sampling technique was used to select 1800 respondents. The respondents were comprised of 40 principals, 80 vice principals, 120 heads of departments, 120 teachers, and 200 prefects totaling 600 respondents from each of the three senatorial districts in Kwara State. Five research hypotheses were generated for the study. Computer Literacy Questionnaire (CLQ) and Teacher's Job Effectiveness Questionnaire (TJEQ) were used to collect relevant data. The instruments were validated and the reliability index of .63 and .69 was obtained for the (CLQ) and (TJEQ) respectively. The data obtained were analyzed using Pearson Product Moment Correlation statistic and t-test statistics and tested at .05 significance level. The findings revealed that computer literacy encourages appreciation and utilization of computers during teaching learning processes which invariably aid teachers' job effectiveness, such as job performance, record keeping, school discipline, and supports students' academic performance. It also revealed that computer literate teachers perform better in the schools than non-computer literate teachers in the schools by making use of computers during their teaching, the use of computers arouse students' interest in the teachings which supports effective student academic performance. Those schools with non-computer literate teachers were never exposed to computers' usage which detracted from effective teaching and learning in the schools. It was recommended that computer systems be supplied to every school for the teachers and students use by the government, nongovernmental agencies, and philanthropists. Also all teachers should be encouraged by the government through provision of in service computer training opportunities. In doing so, teachers' job effectiveness in Kwara State secondary schools will improve.

Keywords: Teacher Computer Literacy, Teacher Effectiveness, Computer Literacy

Introduction

Of recent, electronic information systems have shown that they offer great opportunities for teachers and students in various disciplines. The use of electronic information systems enables teachers to access the necessary information on learning instruction materials through the internet. Electronic information systems can be defined as the combination of hardware and software used to store the needed information from external and internal sources for more accessible data bases towards the accomplishment of organizational goals. Through the use of electronic information systems (EIS) necessary information is transmitted widely within the shortest possible time. Thus enabling researchers, scholars, and professionals to meet, interact and exchange ideas in the field of education.

Lawal (2012) noted that, the assumption of the public that students that study computer education, computer science, and computer technology in Nigeria Tertiary Institutions are usually adjusted or well acquainted to the use of electronic information system is not true. This is because there are various electronic information system resources that come on the market as new systems in acquiring knowledge and information with ease. EIS in education is generally used to introduce students and teachers to the use and working principles of computer systems that enhance teachers' job effectiveness in their records keeping and teaching learning processes in the schools. EIS in education aids the following: introduction of simulations and games pedagogical strategies, computer based instructions, administrative effectiveness, school discipline, research publications facilities, and effective teaching-learning processes. Also, of recent, teachers log into internet websites to access necessary information for research and assignments. Computers can be described as scientific machines that are used to perform tasks or calculating according to set instructions or programs.

Etejere and Ogundele (2008) observed that electronic information system enables the teachers, researchers, school administrators, and students to acquire, process, store and disseminate vocal, pictorial, textual and numerical information by electronic based systems. However, adequate use of electronic information systems in the schools demands effective computer literacy skills and acquisition.

Computers also work through the interaction of hardware and software. The hardware is part of computer that one can see and touch. The part of computer that helps to translate instructions and performs calculations is called the central processing unit. While software refers to the instructions and programs that tell the computer hardware what to do through the operating system. Examples of hardware are monitor, keyboard, mouse, and printer etc. Computers in education are used in the classroom teaching learning processes through computer aided instruction (cai), computer assisted learning (cal), and e-learning. The uses of computers by the teachers however assist in the curriculum contact delivery. Computers in the school system assist in the academic environment to store, display, transmit, and analyze data by the educational researchers.

A couple of examples of these uses are helpful. For instance, Kpolovie (2006) observed that the use of statistical package for social sciences (SPSS) software for advanced statistics aids academicians, teachers, administrators, and researchers by overcoming the rigor of manual analysis of primary data. He explained further that the use of computers enables researchers to share and chat among each other through use of internet. Also, Opue (2003) described the internet as an electronic library (e-library) where vast amounts of information are provided through different sources and displayed. The use of the internet through the computer enables researcher and teachers to access the relevant information needed for

research and teaching they conduct. Both these authors strongly stated that meaningful and quality research work proceeds with great difficulty without computer usage.

Computer literacy is therefore, inevitable for both the teachers and principals, if schools are to be effective and if their academic goals are to be achieved. The Nigeria *National Policy on Education* (2004) cited the importance of computer literacy in teacher education programs, exposure to changes in the methodologies, curriculum reform, and that innovation in the professions is very important. In addition, it is noted that computer literacy skills enable teachers to implement effective record keeping strategies, and computer assisted instruction and communication. The rationale for this study therefore is to investigate the influence of computer literacy skills as it impacts teachers' effectiveness in secondary schools, especially in Kwara State, Nigeria.

Statement of Problem

Even though computer science and technology is a relatively new phenomenon in Nigeria, the use of computers is reflected in many areas of human activities, such as medicine, domestic activities, engineering, architecture, and education. It is imperative to note that the use of computers is reflected in the secondary school programs. However computer science and technology in the educational sector calls for all the stakeholders in education to be computer literate, if the schools are to cope with the challenges in the society. For the schools to be effective, computer literacy should be demonstrated through computer availability, computer utilization, and content competencies in the schools, as well as through teachers' effectiveness in the areas of record keeping, supporting student academic performance, teachers job performance, school discipline, and community services. This article attempts to assess secondary school teachers' computer literacy and its relationship to these areas in Kwara State.

Purpose of Study

The study aimed at examining the influence of computer literacy on teacher's effectiveness in Kwara State. Specifically the study in Kwara State focused on:

- Investigating the level of computer literacy skills among secondary schools teachers examining the influence of computer literacy on teachers' effectiveness.
- Identifying the specific problems militating against computer literacy skills in secondary schools.
- Proffering useful suggestions for the amelioration of those problems identified in the interest of enhancing teachers' computer literacy and effectiveness in the classroom.

Research Hypotheses.

The following null hypotheses were formulated to guide the study:

Ho1: There is no significant relationship between computer literacy and teacher's effectiveness in Kwara State secondary schools.

Ho2: There is no significant relationship between computer appreciation and secondary teacher's effectiveness in Kwara State secondary schools.

Ho3: There is no significant relationship between computer aided instruction and teachers' job performance in secondary schools.

Ho4: There is no significant difference in the job performance of computer literate and non-computer literate teachers in secondary schools of Kwara State.

Ho5: There is no significant relationship between computer literacy skills and teachers' record keeping strategies in secondary school.

Research Method

The study is a descriptive survey of correlation types. It made an attempt to investigate the relationship that exists between computer literacy and school effectiveness in Kwara State secondary schools. The study also made a comparative study of the school effectiveness variables between computer literate and non-computer literate teachers. A stratified random sampling technique was used to select 20 secondary schools from each of the three senatorial districts in the state. A total number of 60 sampled schools participated in the study. A total of 1800 respondents participated in the study; comprised of principals, vice principals, head of departments, prefects, and core subjects teachers in the senior secondary schools in Kwara State. Core subject teachers included those in English Language, mathematics, biology, economic, and Yoruba.

A Computer Literacy Questionnaire (CLQ), a School Effectiveness Questionnaire (SEQ), and a Students Academic Performance Checklist (SAPC) were the instruments used to collect relevant data for the study. Content validity of the instruments was assured by the experts with a split-half reliability method used to determine the reliability of each instrument that gave reliability index of .63 and .69 for the CLQ and SEQ respectively. The data collected were analyzed using Pearson Product Moment Correlation statistics and t-test statistics. All the operational hypotheses were tested at .05 significance level. All analysis of data was subjected to a SPSS computer analysis.

Results

Ho1: There is no significant relationship between computer literacy and teachers' effectiveness of secondary schools in Kwara State, Nigeria.

Table 1: Computer Literacy and Teachers' Effectiveness in Secondary Schools in Kwara State, Nigeria.

Variable	no	\bar{x}	sd	df	calculated r-value	critical r-value	Decision
computer literacy	1800	78.31	28.64	1799	.66	.195	Ho1 Rejected
Teacher's Effectiveness	1800	66.53	43.6				

Above table 1 shows the analysis on the relationship between computer literacy and teachers' effectiveness of secondary schools in Kwara State, Nigeria. The result however, shows that the calculated r-value of .66 is greater than that critical r-value of .195 at the degree of freedom of 1799 and tested at .05 significance level. Hence the null hypothesis which stated that there is no significant relationship between computer literacy and teachers' effectiveness of secondary schools in Kwara State is rejected. It indicates a high positive significant relationship exists between computer literacy and teachers' effectiveness in secondary schools. The result is supported by Sofoluwe (2007) who pointed out that computer literacy

by teachers will enhance computer aided instruction. That knowledge of computers also aid effective data processing, storing, outputting, and retrieving of information in the schools system. Further that computer literacy relieves teachers of the stress of manual operations of data processing. In addition it indicates that computer literacy will aid the teachers during teaching-learning processes, and thus enhance teacher's effectiveness in the schools. Again the findings were supported by Fasiku (2007) who observed that knowledge of computers would aid effective management of information systems in the schools and it would aid effective decision-making processes which eventually make administration of schools effective.

Ho2: There is no significant relationship between computer appreciation and teachers' effectiveness in secondary schools of Kwara State, Nigeria.

Table2: Computer Appreciation and Teachers' Effectiveness in Secondary Schools of Kwara State, Nigeria.

Variable	no	\bar{x}	sd	df	calculated r-value	critical r-value	Decision
Computer appreciation	1800	62.4	58.3	1799	.63	.195	Ho2 rejected
Teacher's effectiveness	1800	66.53	43.6				

p>.05

Table 2 above shows the result of the relationship between computer appreciation and teachers' effectiveness in secondary schools in Kwara State, Nigeria. From the analysis made therefore, the table shows that the calculated r-value of .63 is greater than the critical r-value of .195 at the degree of freedom of 1799 and tested at .05 significance level. Hence the null hypothesis which stated that there is no significant relationship between computer appreciation and teachers' effectiveness in Kwara State secondary schools is however rejected. It indicates that computer appreciation by the teachers aids effectiveness in their jobs. The result is in line with the opinion of Lawal (2011) who stated the need for computer appreciation in the schools. According to Lawal, when teachers appreciate the use of computers in the schools, the work becomes easier for them. The records, various data and analysis of various issues through computer use become easily appreciated. It is therefore necessary for the teachers to appreciate computer use in their work in order to enhance teacher effectiveness in their jobs.

Ho3: There is no significant relationship between Computer Aided Instruction (CAI) and teachers' effectiveness of secondary schools in Kwara State, Nigeria

Table 3: Computer Aided Instruction and Teachers' Job Performance of Secondary Schools in Kwara State, Nigeria.

Variable	No	\bar{x}	sd	df	calculated r-value	critical r-value	Decision
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Computer Aided instruction	1800	62.44	58.32					Ho3
				1799	.68	.196		
Teacher's job performance	1800	55.32	38.61					rejected

Table 3 above shows the relationship between computer aided instruction and teachers' job performance in secondary schools in Kwara State, Nigeria. The result of the analysis indicates that the calculated r-value of .68 is greater than the critical r-value of .196 at the degree of freedom of 1799 and tested at .05 significance level. Hence the null hypothesis which stated that there is no significant relationship between computer aided instruction and teacher job performance is rejected. It indicates that computer aided instruction makes use of the computer as a medium of instruction for tutorial, drills and practices, simulation or games which aid effective teaching – learning processes. The result is in line with the findings of Alabi (2011) who pointed out that computer assisted instruction helps to open up a greater number of training topics that are required for job advancement. Computer assisted instruction also provides technological skills for effective teaching – learning processes. Based on these findings, therefore effective teacher job performance is enhanced by providing necessary computer assisted instructional programs in the secondary schools.

Ho4: There is no significant relationship between computer literacy skills and teachers' record keeping strategies of secondary schools in Kwara State, Nigeria.

Table 4: Computer Literacy Skills and Teachers' record keeping strategies in Secondary Schools Kwara State, Nigeria.

Variable	No	\bar{x}	sd	df	calculated r-value	critical r-value	Decision
computer literate	1800	72.53	28.64				Ho4
record keeping strategies	1800	56.36	40.22	1799	.62	.196	rejected

$p > .05$

Table 4 above shows the relationship that exists between computer literacy skills and teachers' records keeping strategies in secondary schools in Kwara State, Nigeria. The result of the analysis indicates that the calculated r-value of .62 is greater than the critical r-value of .196 at the degree of freedom of 1799 and tested at .05 significance level. Hence the null hypothesis which stated that there is no significant relationship between computer literacy skills and teachers' record keeping strategies in secondary schools of Kwara State, Nigeria is rejected. It also indicates that a high positive significant relationship exists between computer literacy skills and record keeping strategies in secondary schools. The result is in line with the opinion of Ameh (2002) who stated that the knowledge of computer operational and technical skills enables the teachers to have accurate student data on student enrolments, progression

and results, school events, and other statutory and non-statutory records that may be needed for quick decision making in the schools with easy availability.

Ho5: There is no significant difference between job effectiveness of computer literate and non-computer literate teachers in secondary schools of Kwara State, Nigeria.

Table 5: Job Effectiveness of Computer Literate and Non-Computer Literate Teachers in Secondary Schools of Kwara State, Nigeria.

Variable	No	\bar{x}	sd	df	calculated t-value	critical t-value	Decision
Computer literate	800	72.53	46.8	1798	.56	.349	Ho5 rejected
Non-computer literate	1000	66.51	40.3				

Table 5 above shows significant differences in the level of job effectiveness of computer literate teachers and non-computer literate teachers. The above indicates that the calculated t -value of .56 is greater than the critical t -value of .349 at the degree of freedom of 1798 and tested at .05 significance level. Hence, the null hypotheses which stated that there is no significant difference between job effectiveness of computer literacy and non-computer literacy teachers in secondary schools of Kwara State is rejected. The findings of this study indicate that a high significant difference exists between job performance of teachers that are computer literate and those that are non-computer literate. The study is supported by Alabi (2011) and Lawal (2012) who indicate that computer literacy aids computer appreciation, computer assisted instruction, data processing, and record keeping strategies in the schools. The authors also agreed that computer knowledge brings effective gathering, processing, storing and retrieval of necessary data in the schools. The use of computers relieves computer literate teachers of the stress of manual operations of data collection in the schools. The authors agreed that most of teachers that are not computer literate are found keeping large files, resorting to manual calculations and arrangement of data (e.g. students' academic scores, curriculum sets, school population), and maintain traditional communication methods (e.g. chalk board, talk or lecture methods). Most of the non-computer literate teachers could not complement the use of computer aided instruction, such as PowerPoint presentations, interconnectivity, drills games and simulations, and other computer aided teaching and learning processes. In view of the findings that computer aided teachers' job effectiveness makes work easier and educational goal achievement more attainable; Etejere and Ogundele (2008) also agreed that effective utilization of computers in the schools bring about school discipline, effective teacher job performance, curriculum delivery, and research and publication. Therefore teachers' jobs and principals' administration become easier.

Conclusion

Based on the analysis of the data collected it may be concluded that there is a high positive significant relationship between computer literacy skills and teachers' job effectiveness in Kwara State secondary schools. The computer literacy skills, such as word processing, data processing, Excel, PowerPoint, and interconnectivity operations, have significant impact on

teacher job effectiveness, including areas such as, record keeping strategies, student academic performance, teachers' job performance, school discipline, and community services in secondary schools of Kwara State. It is also concluded that there is a significant difference in the job effectiveness of the teachers that are computer literate and those that are not computer literate in secondary schools in Kwara State, Nigeria.

Recommendations

Based on the findings of this study, the following recommendations are presented.

Recommended installation of computer facilities in the science laboratories of secondary schools.

The Nigerian government should install computer systems in the schools for both the teachers and the students use in the interest of enhancing teachers' effective in the classroom.

Compulsory computer education for the secondary school teachers in Kwara State.

Kwara State Government should mandate that secondary school teachers attend computer training. In service training opportunities should be given to the teachers in order to encourage teacher computer appreciation, effectiveness; and to enhance teacher job performance in secondary schools in Kwara State.

Supply different types of computer systems to secondary school teachers.

The secondary school teachers should be provided individual computers, like desktop, laptop, pagers, and palmtop and supplied with interconnectivity, so that they are used during teaching and learning processes in the schools to enhance teacher job performance and student academic performance. The principals should be provided different types of computer accessories for the schools for teacher and student use. These accessories, such as modems, pagers, fax, cd-rom, electronic media, and other accessories should be accessible to the teachers and the student to enhance teacher job effectiveness and student academic performance in the secondary schools.

Computer literacy skills should be encouraged through compensation.

Extrinsic motivation such as promotion, reward, award, praises, etc. to encourage non-computer literate teachers to become computer literate should be implemented to aid teacher development and job effectiveness in the schools.

Finally, *education resource centers should be established in every local government.*

These should be equipped with internet devices, e-library, and statistical package for social sciences (SPSS) where stakeholders in education can interact and acquire and improve computer knowledge on a regular basis.

REFERENCES

- Alabi, O. (2011). *Computer aided instruction and administrative effectiveness of secondary schools in Kwara State*. Unpublished paper. PGDE project National Teachers Institute at Kaduna.
- Ameh, S.A. (2002). Managing information and communication technology for Nigerian distance education. *International Journal of Education*, 5(10), 25-35.

Etejere, P.A.O. & Ogundele, M.O. (2008). Information and communication technology and administrative effectiveness of Nigerian distance education. *Journal of National Association of Educational Administration and Planning*, 8(2), 135-144.

Fashiku, C.O. (2007). *Management of information system, decision making process and academic goal achievement of Kwara State tertiary institutions*. Unpublished Ph.D. thesis, University of Ilorin.

Federal Republic of Nigeria (2004). *National policy on education*. Abuja: NERDC.

Kpolovie, S.A. (2006). Information communication technology and schools administrative Effectiveness. *Journal of Education and Sociology*, 10(3), 58-66.

Lawal M.K. (2012). *Electronic Information System and Administrative Effectiveness of Federal Polytechnics in the South-West, Nigeria*. Unpublished paper. PGDE Project, National Teachers Institute at Kaduna.

Opie, J.O. (2003). Computer aided instruction and teaching-learning processes in secondary schools. *Journal of Education and Sociology*, 10(3) 74-88.

Sofoluwe, S.A. (2007). Information and communication technology and administrative effectiveness of Nigeria universities. *International Journal of Educational Management*, 2(3), 43-56.