

Influence of Information and Communication Technology Resource Availability and Utilisation on Teachers' Job Performance in Secondary Schools in Port Harcourt Metropolis

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Abstract

The study was conducted to find out the influence of information and communication technology resource availability and utilization on teachers' job performance in secondary schools in Port Harcourt metropolis. The study was guided by three specific objectives, three research questions and one hypothesis. The hypothesis was tested at 0.05 alpha level. A descriptive survey design was adopted for the study and a sample of 340 teachers comprising 200 from Obio/Akpor Local Government Area and 140 from Port Harcourt City Local Government Area was selected through simple random sampling technique. Data collection was achieved with the aid of a structured questionnaire developed by the researchers with items derived from literature review. The questionnaire was validated by three experts drawn from the area of the study. The reliability was conferred on the instrument using test-retest method. The reliability coefficient of 0.78 was computed using Parson's Product Moment Correlation statistics. Data gathered were analysed using mean and standard deviation to answer the research questions while Z-test statistics was used to test the none hypothesis at 0.05 alpha level. The result of the study showed that information and communication technology tools were not adequately available. The available tools were utilized by teachers for the improvement on the Teachers' job performance. Based on the result, it was recommended that provision for information and communication technology tools should be improved by government.

Keywords: Teachers' Job Performance, Information and communication Technology, resources availability, resources utilization

Introduction

Information and Communication Technology (ICT) can be regarded in a variety of ways, such as the Internet, computers, websites, telephones, mobile phones, wireless devices, networks, hardware, software, and other kinds of technologies are all examples of ICT / Telecommunications gear (Latu and Koh, 2007). Information and Communication Technology is described by the American Library Association (1983) as the use of computers and other technologies to acquire, organize, store, retrieve, and disseminate information. According to Adeyemo (2010), ICT in education is the use of digital equipment in all aspects of teaching and

learning; the use of ICT in education is divided into four (4) major categories: 1) knowledge construction and problem solving (via the internet, e-mail, CD-ROM, databases, and video conferencing); 2) process skills; 3) assisting with concept explanation; and 4) communication of ideas (via power points, desktop publishing, and other means). The American Library Association (1983) divided ICT use in education into three (3) categories: 1) data processing using computer hardware and software; 2) information storage using ancillary media such as memory cards, flash drives, CD-ROM, cassette (audio and video, and the like) in addition to the computer central processing unit; and 3) telecommunication using electronic-based equipment, tools, and services that facilitate the transfer of information.

Teachers play an important role in changing society's socioeconomic conditions by teaching children and providing them with the skills, information, and habits they need to survive in an ever-changing world (Amuche & Kukwi, 2013). Teachers are essential for the process of creating children's learning outcomes because their role in production is similar to that of machinery and other forces of production. Teachers have an impact on students' social and emotional growth, behavior, knowledge, and critical thinking, in addition to their exam scores (Blazar & Kraft, 2017; Ginsburg, 2017). As a result, excellent teacher performance is critical for every society. Many practitioners and policy makers around the world see the introduction of information technology communication (ICT) as critical to increasing teacher effectiveness (Olokoba, Abdullahi, & Omosidi).

The use of ICT in teaching is a relevant and functional way of providing education to learners in order to assist them in imbibing the required capacity for the world of work (Kosoko-Oyedeko & Tella, 2010). Davies (2009) posited that teachers use ICT to prepare for lessons and to deliver lesson in class. For lesson preparation, the following are the common patterns of ICT use. Teachers search the internet: download relevant materials; design practice activities with word processing, prepare presentations with Microsoft Powerpoint. Teachers also use the internet to supplement teaching points. Word processing is also used especially for written lessons, while voice recording is sometimes used for recording students' presentation or for pronunciation practice. Oyier, Odundo, Ganira and Wangui (2015) said that the uses of ICT enable schools to achieve improvement. In addition to that, Hare (2007) argues that the use of ICT for effective management of secondary schools has led to increase in efficiency and optimal resource utilization. Selwood (2005) argues that the use of ICT in the management of educational institutions is very helpful to ensure management duties are well performed to the maximum. JISC report (2012) listed nine main uses of ICT in education system; one of them is financial management. This suggests that ICT use is essential for effective implementation of school goals and objectives.

Brief Literature Review

Literature reveals a number of empirical studies conducted on the subject of information and communication technology in teaching. For example, Mugizi and Amwine (2020) conducted a study to find out the influence of information and communication technology (ICT) use on job performance of teachers at a private International School in Kampala, Uganda. A self-administered questionnaire was used to obtain data from teachers using the correlational study technique. Teachers' performance was good, and use of ICT enabled school administration,

electronic information resource access, and collaborative teaching and learning were high, according to the descriptive study results. While access to electronic information resources had a good and significant impact on teacher job performance, ICT enabled school administration and ICT enabled collaborative teaching and learning had a favorable but small impact on teacher performance, according to the regression analysis.

In another study, Ayeni and Ogunbameru (2013) investigated the level of availability and utilization of information and communication technologies in secondary schools in Ondo State, Nigeria. The data was collected and analyzed using a survey research design and a quantitative technique. In seven randomly selected public secondary schools, a total of 404 participants, including 60 teachers and 344 pupils, completed the "ICT Facilities Utilization and Maintenance Survey Questionnaire (ICTFUMSQ)." Using Cronbach alpha, a reliability coefficient of 0.72 was achieved. There were four research questions and one hypothesis proposed. To answer the research questions, basic percentages were used, and Pearson correlation statistics were used to test the hypothesis at 0.05 alpha level. The most regularly used ICT facilities were computer, printer, and bulletin board, according to the statistics.

Nwuke and Ucheju (2021) conducted a study to ascertain the availability and use of ICT in secondary schools in Rivers State. The research was conducted using a descriptive research approach. The population of the study included all 455 secondary schools in Rivers State, including public and private. The study had a total of 136 participants. The Cronbach Alpha technique was used to determine the instrument's reliability. The overall reliability index was 0.73. For data collection, the availability and use of the Information and Communication Technology Questionnaire was employed. The research questions were answered using means, standard deviation, and rank order, while the hypotheses were tested using the Z-test at the 0.05 level of significance. The study found that the extents of ICT accessibility was not adequate.

Statement of the Problem

In recent time, there has been an awakening of the use of information and communication technology tools for enhancing instructional delivery. This awakening has been partly influenced by the advent of COVID-19 which forced schools at almost all levels to incorporate information and communication technology tools in teaching and learning process. Apart from the novel COVID-19 pandemic, information and communication technology for teaching and learning purpose has been in existence and a number of schools and individual teachers have embraced utilizing them for instructional delivery.

Utilisation of information and communication technology has quite a number of benefits for teachers, students and the school in general. To achieve the benefits which ICTs utilization offers, there must be adequate provision and utilization of these tools for instructional delivery. How much these ICT tools are available and utilized is a question that needs answer. Furthermore, how much this utilization enhances teachers job performance needs to be assessed. It was in the bid to provide answer to these questions that the present study was intended.

Purpose of the Study

The purpose of the study was to find out the influence of availability and utilization of information and communication technology on teachers' job performance in secondary schools in Port Harcourt metropolis. Specifically, the study intended to:

1. find out the availability of information and communication technology tools in secondary schools in Port Harcourt metropolis.
2. ascertain the level of utilization of information and communication technology tools in secondary schools in Port Harcourt metropolis.
3. determine how utilization of information and communication technology tools contribute to effective instructional delivery by teachers in secondary schools in Port Harcourt metropolis.

Research Questions

The study was guided by the following research questions.

1. What is the level of availability of information and communication technology tools in secondary schools in Port Harcourt metropolis?
2. What is the level of utilization of information and communication technology tools in secondary schools in Port Harcourt metropolis?
3. How does utilization of information and communication technology tools contribute to effective instructional delivery by teachers in secondary schools in Port Harcourt metropolis?

Hypothesis

There is no significant difference between the mean responses of teachers from Port Harcourt City and those from Obio/Akpor regarding the extent of utilization of information and communication technology tools contribute to effective instructional delivery by teachers in secondary schools in Port Harcourt metropolis.

Methodology

This study adopted descriptive survey design. The population of the study consisted of 569 teachers. This number comprised 342 teachers from 20 schools in Obio/Akpor and 227 teachers from 20 schools in Port Harcourt City Local Government Area. (Source: Zonal Office of the Local Government Council Education Board). The sample for the study was 340 teachers comprising 200 teachers from Obio/Akpor and 140 teachers from Port Harcourt City. This was obtained through random sampling technique to select 10 teachers from each of the 34 schools in the study area. The instrument for data collection was a structured questionnaire designed by the researcher titled "Utilisation of ICT Tools and Teachers' Job Performance Questionnaire". The questionnaire contains three sections covering data for availability, utilization and influence of ICT. The questionnaire was structured on the four point rating scale format of Strongly Agree (SA), Agree (A), Disagree (D) and Strongly Disagree (SD). The questionnaire was validated by three experts drawn from the areas of the study. The reliability was conferred on the instrument using test-retest method. The reliability coefficient of 0.78 was calculated using Pearson's Product Moment Correlation statistics. The research questions were answered using mean and standard deviation, while Z-test was used to test the hypothesis at 0.05 alpha level.

Results

Research Question 1: What is the level of availability of information and communication technology tools in secondary schools in Port Harcourt metropolis?

Table 1: Mean Responses on Availability of ICTs Tools

S/N	Items	PHALGA (n=140)			OBIO (n=200)		
		M	SD	RMK	M	SD	RMK
1	Computers are available for instructional usage.	2.00	0.80	D	2.05	0.80	D
2	Internet facilities are available for instructional usage.	1.98	0.84	D	1.99	0.80	D
3	Smartboards are available for instructional usage.	1.94	0.81	D	1.94	0.79	D
4	Elibrary is accessible to teachers for instructional usage.	2.05	0.81	D	2.07	0.81	D
5	Elearning facilities are accessible to teachers for instructional usage.	1.99	0.80	D	2.07	0.81	D
	Grand Mean	1.99	0.81	D	2.02	0.81	D

Field Survey

Result in Table 1 shows that the teachers from PHALGA and Obio/Akpor disagreed that information and communication tools are not adequately available for instructional purpose in secondary schools. As shown, they disagreed that computers, internet facilities, smartboards, elibrary and elearning facilities are available for instructional purpose. This is evident by mean responses less than 2.50 for all the items for both teachers from PHALGA and Obio/Akpor. A grand mean of 1.99 for teachers from PHALGA and 2.02 for teachers from Obio/Akpor further confirms that they both disagreed that ICT tools are available.

Research Question 2: What is the level of utilization of information and communication technology tools in secondary schools in Port Harcourt metropolis?

Table 2: Mean Responses on Utilisation of available of ICTs Tools

S/N	Items	PHALGA (n=140)			OBIO (n=200)		
		M	SD	RMK	M	SD	RMK
1	The available ICTs are used by teachers and students in the classroom for teaching and learning	3.07	0.85	A	3.18	0.82	A
2	The available ICTs are locked up inside a room because of technical knowhow.	1.94	0.81	D	2.11	0.79	D
3	Available ICTs are kept in the principal's office	1.62	0.49	D	1.53	0.58	D
4	The available ICTs are kept by the teachers to be used for their personal purpose	1.56	0.50	D	1.65	0.58	D
5	Students are given access to the ICTs	2.87	0.77	A	3.27	0.85	A
	Grand Mean	2.21	0.68	D	2.34	0.73	D

Field Survey

Result from Table 2 shows that the teachers from PHALGA and Obio/Akpor agreed that available information and communication tools are utilized by teachers and students for

instructional purpose. They also agreed that students are given access to the ICTs tools. This is evident by mean responses greater than 2.50 for items 1 and 5. They however disagreed that available ICTs are locked up inside a room because of technical knowhow; kept in principal's office; kept by the teachers to be used for their personal purpose. This is evident by mean responses less than 2.50 for items 2, 3 and 4. This result shows that available ICT tools are used for instructional purpose by teachers in the study area.

Research Question 3: How does utilization of information and communication technology tools contribute to effective instructional delivery by teachers in secondary schools in Port Harcourt metropolis?

Table 3: Mean Responses on Influence of ICTs usage on Teachers' Job Performance

S/N	Items	PHALGA(n=140)			OBIO(n=200)		
		M	SD	RMK	M	SD	RMK
1	I discover additional teaching Techniques through my interaction with the internet.	3.50	0.50	A	3.31	0.77	A
2	My lesson content is enriched through additional information from the internet.	3.46	0.50	A	3.25	0.82	A
3	I have greatly improved my class Presentation ability with ICT.	3.55	0.50	A	3.37	0.66	A
4	I have acquire new techniques through the information and Communication technology.	3.46	0.50	A	3.35	0.73	A
5	I have acquire knowledge on modern instructional materials and how to use them for teaching.	3.46	0.50	A	3.29	0.73	A
6	Utilisation of ICT tools enables teachers to gain access to information resources for effective instructional delivery.	3.51	0.50	A	3.44	0.71	A
7	Utilisation of ICT tools (e.g. internet) provide teachers opportunity to participate in collaboration with fellow teachers for knowledge sharing towards eeffective instructional delivery.	3.49	0.50	A	3.37	0.79	A
8	Utilisation of online collaboration contributes to improvement in teachers' teaching effectiveness.	3.51	0.50	A	3.33	0.80	A
9	Utilisation of computer enhances effective assessment of students by teachers.	3.49	0.50	A	3.38	0.81	A
	Grand Mean	3.49	0.50	A	3.34	0.76	A

Field Survey

The result from Table 3 shows that both teachers from PHALGA and Obio/Akpor agreed that: interaction with the internet help them to discover additional teaching techniques; their lesson content is enriched through additional information from the internet; they improve in their class presentation ability with ICT; they acquire new techniques through the information and Communication technology; they acquire knowledge on modern instructional materials and how to use them for teaching through using ICT; Utilisation of ICT tools enables them to gain access to information resources for effective instructional delivery; Utilisation of ICT tools (e.g.

internet) provide them with opportunity to participate in collaboration with fellow teachers for knowledge sharing towards effective instructional delivery; Utilisation of online collaboration contributes helps in improvement of teachers' teaching effectiveness. This is evident by mean responses greater than 2.50 for all the items. Grand mean values of 3.49 for PHALGA and 3.34 for Obio/Akpor confirms that they both agreed that utilization of information and communication technologies contributes positively to teachers' job performance.

Hypothesis:

There is no significant difference between the mean responses of teachers from Port Harcourt City and those from Obio/Akpor regarding the extent of utilization of information and communication technology tools contribute to effective instructional delivery by teachers in secondary schools in Port Harcourt metropolis.

Table 4: Z-test for Influence of ICTs Usage on Teachers' Job Performance

Groups	N	M	S.D.	Z-cal	Z-crit	Decision
PHALGA	140	3.49	0.50	2.19	1.96	Rejected
OBIO/AKPOR	200	3.34	0.76			

Field Survey

Table 4 shows that calculated value of Z (Z-cal) is 2.19 while critical value of Z (Z-crit) is 1.96. Since the calculated value is more than the critical value, the hypothesis was rejected. This means that there was a significant difference between the mean responses of teachers from Port Harcourt City and those from Obio/Akpor regarding how utilization of information and communication technology tools contribute to effective instructional delivery by teachers in secondary schools in Port Harcourt metropolis. Although, the hypothesis was rejected, this does not mean that teachers from the two L.G.As had varying views as in one agree and the other disagree. The difference is only in the degree of agreement.

Discussion of Findings

Research Question one sought to find out the availability of information and communication technology tools for instructional purpose in secondary schools in PHALGA and Obio/Akpor, Rivers State. The result shows that: information and communication tools are not adequately available for instructional purpose in secondary schools. The respondents disagreed that computers, internet facilities, smartboards, e-library and e-learning facilities are available for instructional purpose. The result agrees with that of Ayeni and Ogunbameru (2013) who investigated the level of availability and utilization of information and communication technologies in secondary schools in Ondo State. Ayeni and Ogunbameru found that majority of the information and communication technology tools were not available for instruction except for computers, printers and bulletin boards.

Research Question two sought to find out the utilisation of available information and communication technology tools for instructional purpose in secondary schools in PHALGA and Obio/Akpor, Rivers State. The result shows that: available information and communication tools are utilized by teachers and students for instructional purpose. They also agreed that students are given access to the ICTs tools. They however disagreed that available ICTs are locked up inside a room because of technical knowhow; kept in principal's office; kept by the teachers to be used for their personal purpose. Ayeni and Ogunbameru (2013) who investigated the level of

availability and utilization of information and communication technologies in secondary schools in Ondo State. Ayeni and Ogunbameru found that available information and communication technology tools were utilized for instruction.

Research Question three sought to find out the utilisation of available information and communication technology tools for instructional purpose in secondary schools in PHALGA and Obio/Akpor, Rivers State. The result shows that both teachers from PHALGA and Obio/Akpor agreed that: interaction with the internet help them to discover additional teaching techniques; their lesson content is enriched through additional information from the internet; they improve in their class presentation ability with ICT; they acquire new techniques through the information and Communication technology; they acquire knowledge on modern instructional materials and how to use them for teaching through using ICT; Utilisation of ICT tools enables them to gain access to information resources for effective instructional delivery; Utilisation of ICT tools (e.g. internet) provide them with opportunity to participate in collaboration with fellow teachers for knowledge sharing towards eeffective instructional delivery; Utilisation of online collaboration contributes helps in improvement of teachers' teaching effectiveness. The result of the hypothesis shows that there was a significant difference between the mean responses of teachers from Port Harcourt City and those from Obio/Akpor regarding how utilization of information and communication technology tools contribute to effective instructional delivery by teachers in secondary schools in Port Harcourt metropolis. Although, the hypothesis was rejected, this does not mean that teachers from the two L.G.As had varying views as in one agree and the other disagree. The difference is only in the degree of agreement. The result agrees with the result of Mugizi and Amwine (2020) who investigated the influence of information communication technology (ICT) use on job performance of teachers at a private International School in Kampala, Uganda. Mugizi and Amwine found that access to electronic information resources had a good and significant impact on teacher job performance.

Conclusion

The study was conducted to find out the influence of information and communication usage on teachers' job performance in secondary schools in Port Harcourt metropolis. It was found from the study that information and communication technology tools were not adequately available for instructional purpose. The Study also found that available tools were utilized by teachers for instruction and that the usage of these tools enhanced teachers' job performance.

Recommendations

Based on the findings of the study, the following recommendations were made:

1. Information and Communication Technology tools should be provided by government for instructional purpose in secondary schools.
2. Teachers should improvise for information and communication technology tools for instructional purposes. This can be achieved by volunteering their smartphones for instructional purposes.
3. Workshops should be organised to equip teachers with knowledge of current information and communication technology tools used for instructional purpose. Such workshops should provide them with knowledge of how to access online resources for integration in instructional purpose.

References

- Adeyemo, A. A. (2010). The impact of information and communication technology on teaching and learning of physics. *International Journal of Educational Research and Technology*, 1 (2), 6-8
- America Library Association. (1983). The ALA glossary of library and science information. Chicago: ALA
- Amuche, C. I., & Kukwi, I. J. (2013). An Assessment of Stakeholders' Perception of the Implementation of Universal Basic Education in North-Central Geo-Political Zone of Nigeria. *Journal of Education and Practice*, 4, 158-167.
- Ayeni, A., & Ogunbameru, M. (2013). Effective utilization and maintenance of ICT facilities for quality teaching and learning outcome in secondary schools in Ondo State, Nigeria. *International Journal of Research Studies in Educational Technology*, 2 (2).
- Blazar, D., & Kraft, M. A. (2017). Teacher and Teaching Effects on Students' Attitudes and Behaviours. *Educational Evaluation and Policy Analysis*, 39, 146-170.
- Davies, S. H., 2009. Introduction to new technologies and how they can contribute to language learning and teaching. Module 1.1 in G. Davies (ed.) information and communications technology for language Teachers (ICT4LT), slough, thames Valley University (online).
- Ginsburg, M. (2017). Teachers as Human Capital or Human Beings? USAID's Perspective on Teachers. *Current Issues in Comparative Education*, 20, 6-30.
- JISC Report. (2012). ICT and General Administration in Educational Institutions. Policy Brief. Retrieved from <https://iite.unesco.org/files/pdf>.
- Kosoko-Oyedeko, G. A and Tella, A., 2010. Teachers' perception of the contribution of ICT to pupils performance in Christian Religious Education. *Journal of social Science*, 22 (1): 7-14.
- Latu S. and Koh D. (2007) ICT Adoption Models. 20th Annual Conference of the National Advisory Committee on Computing Qualifications (NACCQ), Nelson, New Zealand.
- Mugizi, W., & Amwine, C. M. (2020). Information Communication Technology Use and Job Performance of Teachers at a Private International School in Uganda. *Creative Education*, 11 (02), 166.
- Nwuke, T.J. & Ucheju, I.O. (2021). Availability and Utilization of ICT in Secondary Schools in Rivers State. *International Journal of Research and Innovation in Social Science (IJRISS)*, 5 (2), 243-250.

- Olokoba, A. A., Abdullahi, A. M., & Omosidi, S. A. (2014). Impact of Information Communication Technology (ICT) on the Management and Performance of Secondary School Teachers in Kwara State, Nigeria. *International Journal of Education Learning and Development*, 2, 60-67.
- Oyier, C.R., Odundo, P.A., Ganira, L., & Wangui, L. (2015). Effects of ICT integration in management of Private Secondary Schools in Nairobi Country, Kenya: Policy options and Practices. *World Journal of Education* 5 (6), 213-219.
- Selwood, I. (2005). Teacher workload: using ICT to release time to teach, *Educational Review*, 57 (2), 163- 174.