

ADOPTION OF INFORMATION COMMUNICATION AND TECHNOLOGY ON HISTORICAL RESEARCH AT UNIVERSITY OF NAIROBI KENYA: IMPLICATION ON TEACHING AND LEARNING PROCESS

Joseph Ogutu, Paul A. Odundo & Samuel Mwanda

Department of Education Communication and Technology, School of Education
University of Nairobi, **KENYA**

ABSTRACT

The University of Nairobi is one the public universities in Kenya that have adopted ICT services in research, teaching and learning activities. Recognizing the critical contribution ICT to academic programmes in tertiary institutions in Kenya, this study investigated the impact of ICT adoption on historical research at the University of Nairobi. The study was based on descriptive design. The study used both primary and secondary data. Primary data were collected from lecturers and students through questionnaires. Secondary data were gleaned from books and journal articles on the use of ICT in academic research. Constructivist theory guided the study. The study found that ICT services have improved historical research by facilitating access to information, analysis of data and dissemination of research findings. The study recommends the need for proper training of students and lecturers on the use of ICT in research activities.

Keywords: Influence, ICT, Adoption, Historical research, Teaching and Learning process.

INTRODUCTION

The 21st century has witnessed an upsurge of technological innovations, which have transformed the education sector. Information Communication and Technology (ICT) has revolutionized academic research, teaching and learning of various subjects (Lee, 2012). ICT encompasses tools and mechanisms used to process, store and disseminate information. ICT tools include, but are not limited to the internet, computer gadgets, mobile phones, projectors, radio and television. This study examines the impact of ICT's adoption in historical research.

According to Carr (1954), History is an incessant relationship between a historian and his evidence. He further observes that history is unremitting conversation between the contemporary and past human actions. Collingwood (1973) defined History as scientific discipline that involves rigorous analysis of past occurrences. In this study, History is defined as the systematic study of man's past activities. The study of History enables students to learn social, economic and political developments in their society.

Historical research aims at reconstructing the past through systematic collection, analysis and presentation of historical data. Historical research has the following importance. First, it enables historians to make more discoveries about past human activities and experiences (Mcdowell, 2002). Therefore, historical research enriches historical knowledge. Second, historical research helps in correcting biases inherent in existing historical sources. For instance, during the colonial period in Africa, most European writers gave a biased account of African history by suggesting that there was no civilization in Africa before colonialism. In the postcolonial period, African historians have corrected biases in African history by conducting intensive historical research in African pre-colonial and colonial histories.

Literature Review

Impact of ICT adoption in accessing information

According to Haddad and Jurich (2002), ICT has transformed education sector by enhancing efficiency in teaching and learning. They noted that internet and other ICT tools have improved effectiveness in research activities by facilitating access to information, data analysis and dissemination of research findings. For instance, electronic books and journal articles are more convenient than the printed ones because they can be used in various formats.

ICT tools facilitate academic research activities by enabling researchers to access information through the internet. Historical researchers can find research topics and solutions to research questions from the internet and computers. Furthermore, electronic publishing of books and journals has improved availability and affordability of information. Researchers, therefore, can limit the cost of accessing information by using free access journals and books from the internet.

According to Munro (2000), hypertext documents available online have links which direct a researcher to other documents with interrelated information. Through hypertexts, historical researchers can obtain and weave together information from a variety of sources, and make their own examinations and interpretation of historical phenomena. In similar vein, Nichol (2003) observed that the application of hypertexts facilitate collection of historical data since they allow researchers to shift from one source to another quickly.

Impact of ICT adoption in presentation of data

According to Whelan (2008), the word processor is a useful tool in processing and presentation of data. It helps researchers to systematise their historical thoughts, analyse sources, and compose their essays. It also enables learners to interact with historical content and develop various writing techniques.

Impact of ICT adoption in storage and dissemination of information

As observed by Sharma (2012), automation of libraries improves organization, storage and dissemination of information. Digitized libraries are more suitable for research activities than the conventional ones because they are better organized and contain information in various formats, such as audio, visual, and softcopy. Furthermore, information sharing has become easy with the digitization of libraries since researchers can access copies of a given document online at the same time (Weert and Tatnall, 2005).

Soloway and Pryor (1996) pointed out that electronic databases allow researchers to store large quantities of information and facilitate regular updating and augmenting of information. For example, electronic journal databases are updated routinely as new articles are published and indexed. ICT tools, such as internet, computer hard drives, flash disks and compact disks provide flexible data storage options. ICT has the potential to create collaborative environments in which researchers can share their research experiences, challenges and findings (Mcmahon, 2009). Therefore, application of ICT in research has enhanced the way we disseminate knowledge.

Statement of the Problem

According to Ward and Parr (2010), ICT adoption has a great impact on academic research, teaching and learning. They observed that proper integration of ICT in research, learning and teaching requires regular evaluation. A study in Turkey on the barriers of ICT integration in research, teaching and learning also pointed out the need for regular assessment of the impact of ICT adoption in academic research (Unal and Ozturk, 2012).

The University of Nairobi has adopted ICT in teaching, learning and research activities. However, no systematic study has been carried out on the impact of ICT adoption in its academic programmes. It is in view of this knowledge lacuna that this study examined the impact of ICT on historical research at the University of Nairobi. The findings of this study can be used to improve the application of ICT in historical research.

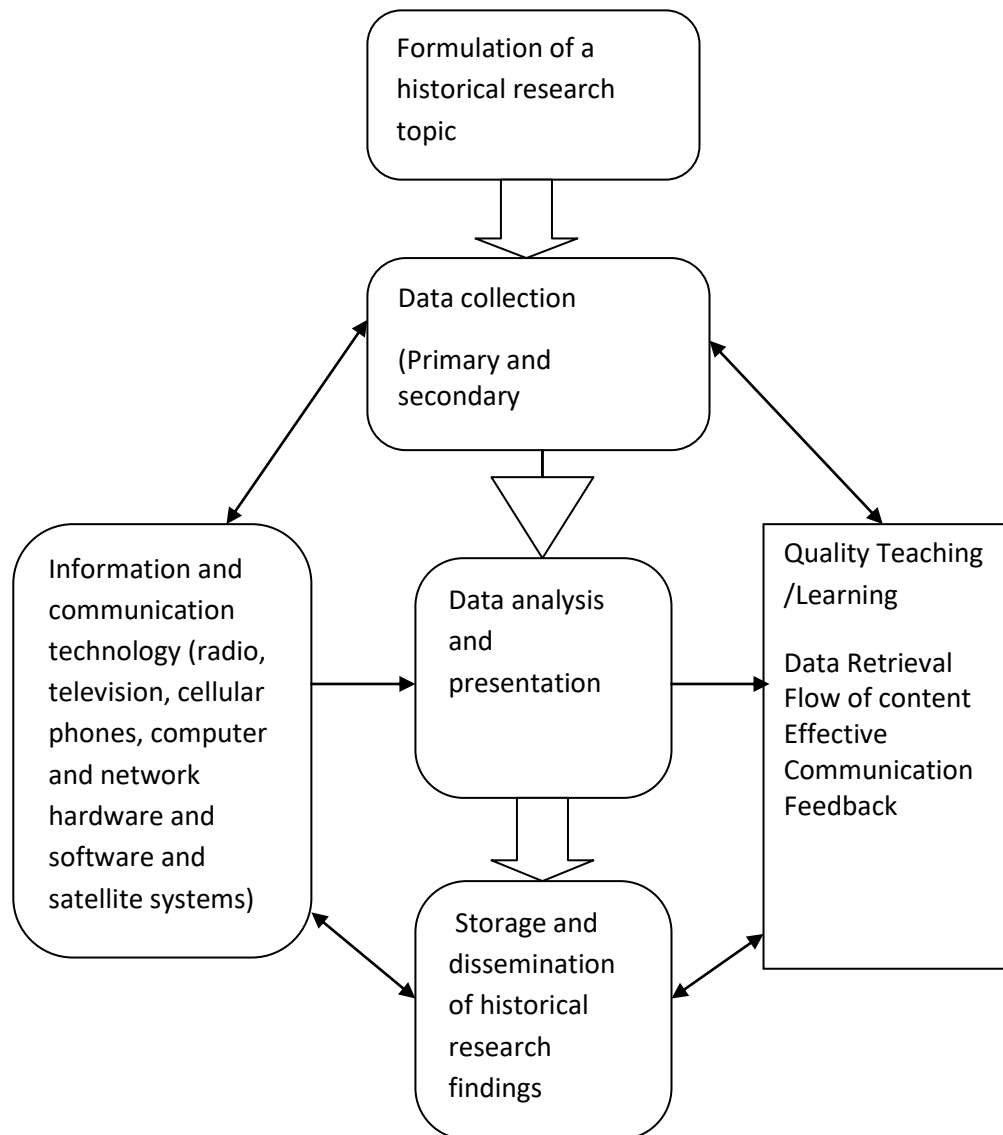
Objectives

The broad objective of the study was to examine the impact of ICT on historical research at the University of Nairobi. Precisely, the study sought to:

- I. Assess the impact of ICT adoption to access historical data.
- II. Examine the impact of ICT adoption in data analysis and presentation.
- III. Analyse the impact of ICT adoption in storage and dissemination of historical research findings.

Theoretical Context

This study is based on constructivist theory. Piaget is one of key proponents of the constructivist theory (Lebow, 1993). Constructivist theory is based on observations on how people learn and is in favour of letting students construct their point of view of the world, philosophy of living, technical expertise and knowledge structures (Lim,2002). Constructivism refers to the philosophical belief that people construct their own understanding of reality. The core of this theory is discovery learning. Students learn by doing. John Dewey believed that practicing is a foundation of learning, and without learning practice, students would get lost (Lee, 2012). He stressed that students construct their knowledge in practice, and instructional design should respect students' psychological development needs. According to Odundo and Gunga (2015), learner-centred approaches enhance critical thinking in learners and encourage democratic teaching and learning. In this study, constructivist theory was used to assess the extent to which ICT has facilitated learner-centred research at the University of Nairobi. In addition, it was used to assess how ICT has enabled novice historical researchers to learn and practice research skills on their own. The findings of the study indicate that ICT services have enabled historical researchers to be more efficient in research and dissemination historical knowledge.

Figure 1: A conceptual framework of the process of historical research

The conceptual framework indicates the relationship between information and communication technology and historical research. In this regard, the independent variable is information and communication technology. The dependent variable is historical research, which is broken down into formulation of a historical research topic, data collection, analysis and presentation, and storage and dissemination of research findings. Therefore, ICT has an impact on all aspects of the historical research as illustrated in the conceptual framework.

METHODOLOGY

This study is based on descriptive research design. A descriptive research provides an accurate account of individuals and phenomena. The design facilitated description of the views of lecturers and students on the impact of ICT adoption on historical research. Questionnaires were used to collect quantitative data from students and lecturers. Statistical Package for Social Sciences (SPSS) was used to analyze quantitative data and the findings were presented in tables. Secondary data were collected from journals and books on the use of ICT in education. Purposive sampling technique was used to select 15 lecturers who participated in the research based on their knowledge and experience with historical research and teaching. Simple random sampling technique was used to select 16 students who participated in the study. University of

Nairobi was sampled purposively because it is a leading public university in Kenya in the use of ICT services in education.

Table 1: Sample size of the study

S a m p l e	N u m b e r
L e c t u r e r s	5
S t u d e n t s	6
T o t a l	11

Findings of the Study

This section presents and analyses data gathered on the impact of ICT adoption on historical research at University of Nairobi.

Table 2: Views of lecturers and students on the impact of ICT in formulation of a history research topic

	Number	%	Number	%
Has the adoption of ICT facilitated formulation of research topics?	13	86.7	2	13.3
Students' responses				
Has the adoption ICT facilitated formulation of research topics?	12	75	4	25

The study sought to find out the views of lecturers and students on the impact of ICT adoption in the formulation of a historical research topic. The findings in table 2 indicate that out of the 15 lecturers, 13 (86.7%) reported that ICT had an impact in formulation of research topics, 2(13.3%) had a contrary opinion. Furthermore, 12 (75%) of students indicated that ICT had an impact in the formulation of research topics. Nonetheless, 4(25%) of students reported that ICT did not have an impact in the formulation of historical research topics.

The findings of this study correspond with that of Haddad and Jurich (2002), which revealed that ICT enables researchers to access and review several sources. Review of many sources enables a researcher to identify research gaps and formulate a research question. Moreover, wide reading, facilitated by ICT, exposes historical researchers to many theories and approaches of addressing a given research question. Therefore, ICT tools, such as the internet and computers facilitate formulation of research topics.

Collection of Historical Data

Data collection is a significant aspect of historical research because without precise information historians cannot give an accurate account of past human actions and occurrences. In historical research, data collection involves identification and examination of various sources about past events. Historians collect information from secondary and primary sources. A source refers to any individual, group of people, document, book and any other material from which information or evidence can be acquired. Secondary and primary sources are the two broad categories of historical information. A source is deemed primary if it was originally produced during the period under study. Primary sources include diaries, pictures, letters,

speech transcription, autobiography, memoirs among others. A primary source enables a historian to learn past events through those who directly participated in them. Secondary sources are produced through an examination of primary sources and include books, journal articles and encyclopaedia.

Table 3: Views of lecturers and students on the impact ICT in collection of historical data

L e c t u r e r s ' r e s p o n s e s	Y e s				N O	
	Number	%	Number	%		
Has ICT facilitated access to secondary data?	12	80	3	20		
Has ICT enhanced access to primary data?	11	73.3	4	26.7		
Students' responses						
Has ICT facilitated access to secondary data?	14	87.5	2	12.5		
Has ICT enhanced access to primary data?	11	68.75	5	31.25		

The findings presented in table 3 indicate the views of lecturers and students on the impact of ICT in collection of historical information. Out of the 15 lecturers that participated in the study, 12 (80%) reported that ICT had facilitated access to secondary data, while 3 (20%) indicated that ICT had no impact on the same. Additionally, 14 (87.5%) of students indicated that ICT facilitated access to secondary data. However, 2(12.5%) of the students noted that it never had an impact. This finding suggests that ICT has enabled majority of historical researchers to access secondary data.

The respondents noted that they experienced a myriad of challenges in accessing secondary sources before ICT was integrated in the academic programmes offered at the University of Nairobi. First, access to secondary sources was difficult because the University of Nairobi library was not digitized. Second, there was limited availability of secondary sources because the university library only offered printed books, journals, reports and periodicals. Third, researchers could not access updated information because most of the secondary sources offered by the library were published several decades ago and it was not easy to find recent publications on historical phenomena. These challenges have been overcome by the adoption of ICT services at the University of Nairobi as follows. The internet has enabled history researchers to access e-book services and journals from online repositories such as SAGE, WILEY and JSTOR among others. Electronic bibliographies have enhanced quick search for secondary sources. Moreover, ICT facilitates regular updating of historical data; hence, enabling historians to access recent publications. Even more importantly, ICT services have lowered the cost of data collection. For instance, digital publishing has led to production of affordable documents, which can be used by many researchers at the same time.

ICT facilitates access to primary sources of History

According to the findings in table 3, 11 (73.3%) of the lecturers reported that ICT enhanced access to primary data. Conversely, 4 (26.7%) noted that ICT did not enhance access to primary data. Furthermore, 11 (68.75%) of students indicated that ICT facilitated access to primary data, where as 5 (31.25) reported that it never had an impact in accessing primary data. Similar findings were reported by (Adesote, 2013; Munro, 2000 and Nichol, 2003) who found that ICT tools like computers, compact disks, online, and audio-visual equipment have made information more accessible than in the past. Moreover, Adesote (2013) noted that ICT tools like the internet, mobile phones and computers enable historians to interview respondents conveniently.

Table 4: Views of lecturers and students on the impact of ICT in analysis and presentation of historical research

L e c t u r e r s ' r e s p o n s e s	Y e s		N O	
	Number	%	Number	%
Has ICT facilitated analysis and presentation of historical data?	13	86.7	2	13.3
Students' responses				
Has ICT facilitated analysis and presentation of historical data?	9	56.25	7	43.75

The study sought to find out the impact ICT in analysis and presentation of historical data. The findings presented in table 4 revealed that out of the 15 lecturers that participated in the study, 13 (86.7%) indicated that ICT enhanced analysis and presentation of historical data. Nonetheless, 2 (13.3%) noted that ICT had no impact in analysis and presentation of historical data. Furthermore, 9 (56.25%) of students indicated that ICT facilitated data analysis and presentation, whereas 7 (43.75%) indicated that it never had an impact on the same.

The integration information and communication technology in historical research has made data analysis more accurate and easy. Data analysis packages like Statistical Package for the Social Science (SPSS) facilitate quick and efficient scrutiny of information, especially statistical ones. Data analysed using computer programmes are flexible because they can be interpreted from various perspectives and can be presented and disseminated in various forms (pictograms, charts, graphs and prose). ICT therefore has made analysis of historical data more scientific than was earlier feasible.

A study by Whelan (2008) revealed that ICT facilitates the presentation of research evidence in several ways. For instance, word processing programmes enable historians to avoid grammatical errors, such as verbosity, spelling mistakes and syntax errors. The difficulty of citing historical data has been overcome by word processing packages like word 2007 and 2010 that have multiple preset citation formats, such as Chicago, APA, MLA Turabian and footnotes. Furthermore, history researchers can learn recent citation styles from APA and MLA Purdue.

Table 5: Views of lecturers and students on impact ICT in data storage and dissemination

L e c t u r e r s ' v i e w s	Y e s		N O	
	Number	%	Number	%
Has ICT improved storage and dissemination of historical data?	14	93.3	1	6.7
Students' views				
Has ICT improved storage and dissemination of historical data?	12	75	4	25

The findings shown in table 5 indicate the views of lecturers and students on the impact of ICT adoption on data storage and dissemination. Majority of the lecturers, 14 (93.3%), reported that ICT improved storage and dissemination of historical information. Only 1 (6.7%) of the lecturers noted that ICT had no

impact in storage and dissemination of historical information. Furthermore, majority of students, 12 (75%), indicated that ICT had improved storage and dissemination of historical data. However, 4 (25%) of students had a contrary opinion. These findings are similar to the research outcomes of a study by Sharma (2012), which indicated that ICT tools, for example, compact disks, flash disks, computers and internet have made storage of data more convenient than in the past. For instance, a researcher can create backup information by storing data using the aforementioned ICT tools. Second, ICT tools provide flexible storage options because they have expandable capacity. Third, a researcher can secure sensitive data using ICT tools that have advanced security features. For instance, information stored on the internet and computers can be secured using passwords. The study further indicated that ICT tools provide several options of disseminating information. For example, electronic publishing facilitates dissemination of research findings through the internet and computers (Sharma, 2012).

Table 6: Views of lecturers and students on the challenges of using ICT in historical research

Views of lecturers and students	Yes		No	
	Number	%	Number	%
Do you have proper training in ICT?	14	45.16	17	54.84
Do you have the capacity identify credible sources from the internet?	13	42	18	58

Although ICT services have greatly transformed historical research activities at the University of Nairobi, both lecturers and students reported that they had experienced some challenges in using ICT tools in historical research. Findings in table 6 indicate that only 14 (45.16%) out of the 31 respondents had proper training in ICT.

ICT Skills

Majority of the respondents noted that they had not fully benefitted from ICT services because they lacked proper computer and internet skills. Indeed, most students reported that they first used ICT tools in research activities when they joined the University of Nairobi. Moreover, the university management did not have proper mechanisms of inducting both students and academic staff on the use of ICT services. Consequently, students and lecturers underutilized ICT services offered by the university due to lack of requisite skills. The respondents noted that the only ICT services they used at the university were Wi-Fi internet connections and computer laboratories, but they were oblivious of other ICT services related to academic research offered by the university.

ICT and Source Credibility

As indicated in table 6, only 13 (42%) of the respondents had the ability to identify credible sources from the internet, where as majority 18 (58%) could not. Majority of the respondents noted that they had trouble in choosing the right internet sources. Certainly, some internet sources are not properly researched, yet students use them in academics, either deliberately, or out of ignorance. Worse still, some online materials are based on propaganda, particularly, those related to political issues. This often leads to poor historical research outcomes. This situation has been aggravated by the regular updating of information online, which makes it difficult for lecturers to scrutinize the credibility of sources.

CONCLUSION

This study has demonstrated that information and communication technology has greatly transformed the manner in which historical research activities are conducted. As discussed, ICT services facilitate access to information, data analysis and presentation of findings. Historical research has become more practical and fascinating since researchers can access information on a given historical phenomenon from various sources. The internet and computers have enabled students to learn and practice historical research skills on their own without necessarily depending on instructors. In other words, ICT services have changed the classical encyclopaedic role in which learners deemed lecturers the primary source of information. ICT has wholly transformed historical research by making it less expensive and more accurate than in the past. These changes are not only reshaping historical research, but also compelling history lecturers to reconceptualise the teaching and learning of methods of historical research. The significant transformation of historical research motivated by the use of ICT services implies that learners and teachers should get additional training on contemporary research practices that are compatible with ICT innovations.

The following recommendations are derived from the study findings

1. All students and lecturers should learn computer skills to enable them use ICT services effectively.
2. The University of Nairobi should expand internet services to enable students and lecturers have access to various learning materials through ICT tools like iPads and personal computers. This can be achieved by expanding WiFi zones within the University of Nairobi campuses.
3. ICT should be integrated in all research, teaching and learning activities offered by the University of Nairobi.
4. Students and academic staff should be regularly sensitized on the latest ICT innovations adopted by the University of Nairobi. This can be achieved through customised ICT training workshops for both academic staff and learners.
5. Moreover, there is need to develop an ICT culture among academic staff and learners.

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