

Factors Influencing Integration Of Computer Assisted Instruction In History Education: A Case Of Selected Secondary Schools In Wareng District, Kenya

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Abstract: *This paper is a case study whose purpose was to establish the stringent factors that influence the integration of ICT in teaching history education in the Kenyan Secondary schools, precisely in Wareng District. The ICT when well utilized can assist the history teacher to arouse interest among the students and in return generate enthusiasm for the subject. This has not been the case in Kenya due to a number of factors which range from lack of skilled personnel, high cost of digital devices, lack of electricity connectivity and lack of motivation among teachers. Theoretical framework for this study was anchored on the Constructivist Theory, which maintains that learners build knowledge actively through their interaction with the environmental stimuli. The study was carried out in Wareng District, which has a population of 68 public schools and 10 private schools. The target population was sampled using stratified random sampling method where 15 public schools and 2 private schools were sampled. The data collection instruments included questionnaires, interview schedules and observation checklists. The data collected was analyzed using descriptive and inferential statistics. Arising from this study was the conclusion that ICT when integrated in history education, can yield great enthusiasm among the learners. However, history teachers were ill-prepared in ICT integration and use of computers in teaching history education. The significance of this study rests on the assumption that computer integrated education can yield substantial benefits for individual teachers, students and society at large. The findings of this study will be useful to history teachers, students and school managers who will be able to recognize, appreciate and uphold the benefits of integrating computers in teaching and learning.*

Keywords: *Computer assisted instruction, Integration of computers, Information and Communication Technology (ICT)*

I. INTRODUCTION

The current economy is knowledge based and it is spurred by recent invention and innovations in the digital technology. The Information and Communication Technology (ICT) is perceived to provide students with the needed opportunity to participate actively in the classroom (Momanyi, 2006). The use of computer make much benefit for people working in all sectors and it plays an important role in this information age. Computer impact in many areas of economy including the education sector. Because of their huge impact in our daily

lives, the educational value and advantage, computer use has highly attracted the educators' attention. Sharma et al (1989) for example, encourage teachers to use this Information Technology (IT) in their daily working as a productive tool to enrich their teaching, enhance students learning and change their instruction in order to benefit students. Teachers as well as learners should be able to use computers as instructional tools in classroom to promote their teaching and learning activity. Guha (2003) asserts that technology is an essential tool for teaching and learning. It can enhance students learning.

The learned society expects teachers to integrate technology into their classroom operations and suggest some things educators can do in order to accelerate the progress and reforms in the education system (Guha, 2003). The stakeholders that is, teachers, parents and policy makers, have a consensus that computers have great and important influence on education. This is an impressive record of growth and shows a widespread willingness on the part of schools to explore the possibilities of integrating new teaching and learning technologies. The operational use of “computer-assisted-instruction” raises a number of important issues. By using computers in education, we meet issues such as individualization of instruction, standardization of instruction, complexity of instruction and freedom of education (Nachmias, 1992). The question of how schools can best use their computing resources to bring about positive and lasting effects upon students has resulted in the development of two broad sets of curriculum practices (Momanyi, 2006). These are learning about the computer and learning with computers i.e. learning with, through and from computers. In other words, computing studies or computers integrated across the curriculum. Today both sets of curriculum command a significant proportion of school resources.

During the 1990s, the pendulum had begun to swing in favour of learning with, through and from computers across the curriculum. That shift has reflected a growing awareness of the disadvantages of specialized computing subject, which results into fragmentation, mystification and academisation (Momanyi, 2006). This has brought an increasing consciousness of the interactive nature of computers, as tools for learning and discovery. This awareness owes much to the many empirical studies of computer use in teaching and learning. A key focus of early *meta-analytic* studies was the relationship between interventions involving computers and students achievements, as measured by test scores (Guha, 2003). The studies found learning involving computers was as effective as traditional instruction or resulted in greater gains for the students. In summarizing these findings, Guha (2003), concluded that students, whose learning experiences involved computers generally spent less time learning, learned more in class and remembered it longer. Kaahwa, (2008), concluded that while computer applications remain an effective means of improving students’ academic achievement these gains were greatest when simulation and problem-solving software impacted beyond specific content, affecting students’ planning skills, reasoning, logical thinking and ability to transfer.

A. STATEMENT OF THE PROBLEM

Several research findings on integration of computer assisted instruction from developed countries have reported the general effectiveness of the device as a method of instruction (Kaahwa, 2008). However, as much as computer knowledge and skills are important in today’s technological age, computer integration in Kenyan classrooms is still at the initial stages. There is little information with regards to the utilization of computers as tools for classroom instruction in secondary schools particularly in Wareng District, Kenya (MoE, 2010). Majority of history teachers in secondary schools are constrained to a very formal teaching style and

hence there is little or no awareness of the new technologies that could be incorporated in the teaching and learning techniques (MoEST, 2010). History education as one of the subjects offered in the secondary schools is provided by the Kenya Institute of Curriculum Development (KICD). So far, limited studies have been undertaken to determine the integration of computers as tools for instruction in history education particularly in Kenyan secondary schools (MoE, 2010). Therefore, this particular study sought to investigate the factors influencing the integration of computer assisted instruction in history education in Wareng District of Uasin Gishu County, Kenya.

B. OBJECTIVES OF THE STUDY

The study sought to examine the influence of the following factors on the integration of computers in history education instruction;

- ✓ To establish the teachers’ attitude towards the integration of computers in history education instruction.
- ✓ To find out the teachers’ professional development that is necessary for integration of computer assisted instruction.
- iii) To investigate the teachers’ accessibility to computer hardware, software and technical support from the educational stakeholders.

C. RESEARCH QUESTIONS FOR THE STUDY

In order to achieve the purpose, this study sought to answer the following questions:

- ✓ How does the teachers’ attitude influence the integration of computer assisted instruction in history education?
- ✓ What kind of professional development that expose teachers to the integration of computer assisted instruction?
- ✓ Is there any significant relationship between teachers’ accessibility to computer hardware, software, technical support and the integration of device in teaching history education?

D. SIGNIFICANCE OF THE STUDY

The significance of this study rests on the fact that computer integrated education yields substantial benefits for individual student and society at large. The findings of this study will be useful to history education teachers and students who will be able to recognize, appreciate and uphold the benefits of integrating computers in teaching and learning. Moreover, the study will help Ministry of Education to identify the challenges facing teachers in their attempt to integrate computer assisted instruction in their teaching practicum. The study may also advice the Kenya Institute of Curriculum Development (K.I.C.D.) which develops the syllabus, produces instructional materials and provides guidance with regard to implementation of the secondary school curriculum in Kenya. The findings will assist educational planners and officials who are responsible for overseeing the implementation of educational policies and curriculum implementation. As a result of this study, teacher-training institutions, in collaborations with the Ministry of

Education will find the urgent need for integrating computer courses in teacher-training programmes. Moreover, it is expected that the study does increase the stock of already existing literature on computer assisted instructions. Finally, the study may also be useful to other researchers concerned with issues related to computer assisted instruction in secondary schools.

E. RESEARCH INSTRUMENTS

The following instruments were used for this study namely; the Questionnaires, Interview Schedule and Observation checklist. The instruments were developed based on the various objectives of the study.

✓ THE QUESTIONNAIRES

The subject teachers and head teachers were issued with questionnaires. These offered considerable advantages in the collection of data as they presented an even stimulus to large samples simultaneously and provided the researcher with an easy but an economic accumulation of data (Gay, 1992).

✓ THE INTERVIEW SCHEDULES

This provided a series of both closed-ended and open-ended questions. The closed-ended questions enabled the researcher to collect facts as the subjects were focused to the point; while the open-ended questions gave the respondents room to freely express their views. Moreover, the interview Schedule allowed the researcher to ask additional questions which arose during the interview and required further clarifications.

✓ OBSERVATION CHECKLIST

An observation checklist enables the researcher to gather first hand data directly without relying on anybody. The researcher used the observation checklist to collect data on the use of computers in teaching of history education.

F. RESEARCH METHODOLOGY

The study being focused to social discipline, adopted a descriptive method as it is appropriate for such disciplines. This method include date collection, categorization and explanation as well as reviewing previous studies and researches. This method however, is not only limited to describing the problem but it also considers, analyzes and explains all aspects and reasons of the underlying problems and proposes some solutions. Furthermore, through the adoption of such method, the current situation of ICT integration in teaching and learning can be identified.

II. DATA PRESENTATION, ANALYSIS AND INTERPRETATION

In presenting the data, the study was guided by the stated objectives. The first section presents the demographic data of

the respondents. Section two presents data on history teachers and head teachers' attitudes towards computer usage in instruction, while Section three covers discussions on teachers' professional development on computer study that is necessary for integration of computer assisted instruction in history education. The last section deals with the accessibility of computer hardware, software and technical support from the educational stakeholders.

A. HISTORY TEACHER'S DEMOGRAPHIC INFORMATION

The study sought demographic data of the respondents which included subject taught, duration of teaching service, and computer usage in their schools. It also sought their educational qualifications and the duration of computer use in teaching secondary schools. The frequency tables were generated using SPSS output programme to show the various categories of teachers in the Humanities department. The frequencies option allowed the research to obtain the number of people (count) within each category in the data set. The number of teachers in each category was not determined beforehand; it happened as a result number of schools considered for the study. These categories represented the independent variables while the frequencies and the percentages represented the dependent variables in the study. The duration in which the history teachers used computers assisted instruction was to be ascertained. The study was mainly supposed to elicit the degree at which the teachers approved or disapproved the idea.

VARIABLE	CATEGORY	FREQUENCY (Number)	PERCENTAGE (%)
Subjects Taught	History and Kiswahili	7	24.1
	History and CRE	14	48.3
	History and Geography	8	27.6
Computer usage	Current in use	10	34.5
	Never used	14	48.3
	Not Applicable	5	17.2
Highest Qualification	Untrained diploma	1	3.5
	Untrained graduate	3	10.3
	Trained diploma	8	27.6
	Trained graduate	14	48.3
	Other	3	10.3
Duration of teaching service	0-5 years	9	31.0
	5-10 years	6	20.7
	10-20 years	7	24.1
	Over 20 years	7	24.1
Duration of computer use	Never used computers	6	20.7
	Less than 1 year	5	17.2
	1-5 years	9	31.3
	5-10 years	8	27.6
	Over 10 years	1	3.4

Table 2.1: History teachers' demographic information

The teachers' background information according to the subjects they taught is shown in Table 4.1. The representation was as follows; Seven (24.1%), drawn from History and Kiswahili, Fourteen (48.3%) drawn from History and CRE and Eight (27.6%) drawn from History and Geography. This classification was necessary to show how the teachers from each category used computers. History and CRE teachers made almost half of the respondents in the sample. This was because History and CRE as a cluster have the highest number of teachers. History and Kiswahili followed closely to History and Geography. Within Wareng District, the teachers who had specialized in History and Government were few following the general shortage of teachers. Except for a few private schools, the teachers were distributed almost equally in all other schools according to their categories.

B. THE HISTORY TEACHERS' ATTITUDE TOWARDS THE USE OF COMPUTERS

Table 2.2 present views on teachers' attitudes towards using computers in the classroom. Twenty five (86.2%) teachers in the study were enthusiastic about using computers, twenty four (82.8%) of them would subscribe to a computer magazine. An overwhelming majority of twenty eight teachers (96.6%) agreed that computers be made valuable teaching tools, and the same twenty eight (96.6%) agreed that teachers need computers for teaching purposes.

VARIABLE	CATEGORY	FREQUENCY	PERCENTAGE
Is enthusiastic about using computers	Disagree	4	13.8
	Undecided	0	0.0
	Agree	25	86.2
Would pay to learn computer skills	Disagree	5	17.2
	Undecided	0	0.0
	Agree	24	82.8
Would subscribe to a history magazine	Disagree	11	37.9
	Undecided	0	0.0
	Agree	18	62.1
Computer make valuable teaching tools	Disagree	1	3.4
	Undecided	0	0.0
	Agree	28	96.6
Teachers need computer for teaching	Disagree	1	3.4
	Undecided	0	0.0
	Agree	28	96.6
Computers can easily be integrated in the classroom	Disagree	4	13.8
	Undecided	0	0.0
	Agree	25	86.2
There is room for computer use in the current school curriculum	Disagree	4	13.8
	Undecided	0	0.0
	Agree	25	86.2
Computer project enhance student understanding	Disagree	1	3.4
	Undecided	0	0.0
	Agree	28	96.6

Table 2.2: History attitudes towards the use of computers

Twenty five respondents (86.2%) agreed that computers could easily be integrated in the classroom, twenty five (86.2%) teachers reported that there was room for computer use in the current school curriculum, twenty eight (96.6%) reported that computer projects enhanced student understanding and twenty seven (93.1%) responded that computers motivated students in learning the subject matter. Arising from these results, it can be reported that the teachers were quite positive about using computers in the classroom. The teachers were very enthusiastic about the use of computers in the classroom. They supported the integration of computers in the secondary school curriculum. But since the

schools did not have computers for classroom instruction, this enthusiasm amounted to nothing.

C. THE PROFESSIONAL DEVELOPMENT AMONG HISTORY TEACHERS

In the demographic information the teachers were asked to tick "yes" if they had utilized any of the computer services that were listed, or "no" if they had not used them. These services are necessary if one was to integrate computer skills in the secondary school curriculum. The services were not arranged in any particular order. Teachers were asked to tick "yes" or "no" if they had never used a computer, or used a computer for Record Keeping, PowerPoint, Word Processing, Spreadsheet, Internet, Programming, Administration and other applications. From the responses it emerged that most teachers had a varied professional development to the use computers. When record keeping is used, the teachers keep all academic records pertaining to their students electronically. Examples of these would be class lists, registers, mark sheets for assignments and examinations, teachers' assignments, copies of examinations, information about student performance and report cards.

VARIABLE	CATEGORY	FREQUENCY	PERCENT
Record Keeping	Yes	13	44.8
	No	16	55.2
PowerPoint	Yes	8	27.6
	No	21	72.4
Word-Processing	Yes	12	41.4
	No	17	58.6
Spreadsheet	Yes	8	27.6
	No	21	72.4
Internet	Yes	6	20.7
	No	23	79.3
Programming	Yes	5	17.3
	No	24	82.8
Administration	Yes	3	10.3
	No	26	89.7

Table 2.3: The professional development among history teachers

As presented in Table 2.3, thirteen (44.8%) history teachers used computers for record keeping. The majority were not using the computers for record keeping. PowerPoint is a major service used by history teachers when making lesson presentations in the classroom. From the results of Table 2.3, few history teachers were proficient in the use of computers, while the great number of the others did not possess the basic skills for computer application. History teachers ought to be trained on the use PowerPoint as the main strategy that would enable them to teach well. They had to train on how to use computers for lesson presentation and record keeping.

D. THE ACCESSIBILITY TO COMPUTERS BY HISTORY TEACHERS

In order to address the question of teachers' access to computers in the history classrooms, the following data was collected and analysis were done.

VARIABLE	CATEGORY	FREQUENCY	PERCENTAGE
Access to computers in school	Yes	17	59.6
	No	12	41.4
School provides computer facilities	Yes	9	30.0
	No	20	69.0
School is networked with computers	Yes	5	17.2
	No	24	82.8
Use computers at home	Yes	14	48.3
	No	15	51.7
Has access to articles on computers	Yes	16	55.2
	No	13	44.8
Uses computers for instruction	Yes	4	13.8
	No	25	86.2

Table 2.4: Teachers' accessibility to computers in the school for instructional purposes

Table 2.4 is the results of the response to the questions on whether teachers had access to computers for integration in the instruction at secondary school curriculum in Kenya. Seventeen (58.6%) of the history teachers had access to computers for general administration in the school. Access in this question meant having computers that were conveniently allocated for the teachers' use. These computers may have been put aside for use by head teachers only or they may have been shared among other teachers other than history teachers. Nine (31.0%) history teachers were provided with computer facilities which were placed in the history rooms or some other laboratories for use in the classroom. Fourteen (48.3%) of the history teachers reported that they used computers at home, while sixteen (55.2%) had access to articles about the use of computers.

E. SUMMARY OF THE MAJOR FINDINGS

The difference in the teachers' responses was attributed to their teaching experiences more than other variables. Most of the respondents who reported to have used computers had less than five years of teaching experience. Those who had not used computers at all had more than five years of teaching experience. This agrees with the view that teachers who had taught for less than three years were more likely to use computers in their teaching than their counterparts with more than twenty years teaching experience. It agrees with Roland's (2000) findings that newer teachers with few years of teaching experience were more likely to use computers or the internet to accomplish various teaching objectives than teachers with more years of experience. Even though the teachers reported that they were well prepared to implement computers in the curriculum, this was self-reported. According to Borg and Gall (1998) research based on self-reported data from the teachers presented a less accurate picture. Self-reported data amounts to unsubstantiated teachers' claim about their practices in the classroom. The responses that the teachers gave in the use computers showed that they are prepared to use computers in the classroom. Lack of training, poor attitude and poor access,

retarded the implementation of computer assisted instruction in the classroom.

History teachers however, were enthusiastic about the use of computers in the classroom. It just happened that most of the secondary schools were not equipped for integration of computer technology in the classroom. The results showed equal enthusiasm for the participants regardless of sex and grade. However, there were significant difference in computer use by the subject areas in which the teachers had been trained during their college education. The newly trained respondents seemed to use the computers more than their older counterparts.

III. CONCLUSION

The study found that secondary schools in Wareng District, Uasin Gishu County, had not integrated computers in their implementation of the curricula. This finding confirmed what Inyega, (2005) and Momanyi et al, (2006) had found in their studies that secondary schools in Kenya have not yet embraced computer instruction in their curriculum. The respondents said that even though they were positive about the use and benefits of using computers in the classroom, the schools had not prioritized the acquisition of computer hardware and software, enough to allocate to teachers for the sole purpose of instruction. Therefore there were no computers in the schools specifically meant for classroom use. In fact, some secondary schools lack the prerequisite infrastructure and equipment for successful implementation of computer assisted instruction. In addition, lack of adequate funds for training of teachers in the use computers for instruction was a major issue. That is why history teachers may not have been accorded enough training on the use of computers in their classroom instruction.

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