

APPLICATION OF ICT TOOLS IN SOCIAL STUDIES INSTRUCTION: ISSUES, PROBLEMS AND PROSPECTS

Jimoh, A.S (PhD)

+2348033310592

Akin4jimoh@yahoo.com

&

Olukoya, T.O

+2348064975055

olukoyatajudeen@gmail.com

Department of Language, Arts and Social Science Education, Faculty of Education, Lagos State University, Lagos, Nigeria.

Abstract

The study delved into the inherent influence, issues, problems and prospects of using information and communication technology tools in Social Studies instruction. It is a multistage study which employed both the descriptive survey and experimental designs to collect data. A total of two hundred and seventy five (275) student respondents and thirty teachers were randomly selected from five different schools. Achievement tests were conducted to test the performance of learners exposed through traditional approach of learning and ICT tools for teaching Social Studies concepts. Questionnaires were equally administered to determine the ICT literacy skills of teachers. The collected data was analyzed using the chi-square, t-test and Pearson Product Moment Correlation statistic formulae. Findings from the study revealed that the problems associated with the use of ICT in teaching Social Studies was as a result of inadequate provision of ICT materials and that most of the Social Studies teachers were not specialists in Social Studies but were in line with the main stream in introduction of ICT into the teaching routine. On the basis of the findings from the study, it was suggested among others that constant training and re-training programmes particularly on application of ICT in teaching social studies (and other various subjects inclusive) should be organized for teachers to keep them abreast of needed skills; that government should assist in equipping the available ICT centers used by schools; to improve on the

existing infrastructure as well as employing more specialists in Social Studies who are ICT literate to handle the subject in the schools.

Key words: ICT tools, Social Studies, Social Studies instruction, teachers' I.C.T. literacy skills and teaching efficiency.

Introduction

Ability to work with Information and Communication Technologies (I.C.T) is recognised as one of the key competencies necessary for success in life and competition in the labour market which every citizen should possess. The term 'Computer Literacy' was introduced to distinguish between users and non-users of ICT in this regard (Bawden, 2001).

Concerning ICT in education, two important roles are assigned to the school; the first is to fulfill the expectations of the society for the demand of ICT skills and the second is to raise the quality of education in the schools with support of ICT. Many scholars, teachers and teacher trainers have recognized the potentials of ICT to enhance teaching and learning, and as a side effect, the number of published articles about the use of ICT in school work is enormous [Bell and Bell, 2003] However, despite the significant investment in training and resources, in reality, Nigerian schools are still far behind in ICT use in science, industry, communication and many academic fields including Social Studies. Usage of ICT is so diverse that it is almost impossible to list all possible applications. Taylor [2003] recognized three roles of computers in a classroom: as a tutor, as a tool and as a tutee. Introduction of ICT in Social Studies lessons can raise not only the level of knowledge but also students' positive attitudes towards Social Studies as well.

In Social Studies education, Information and Communication Technology (ICT) at present is becoming one of the most important elements for determining the basic competences of students. Information technology integrates medical, informative and computer science education and also all subjects in the school curriculum.

In Social Studies Education, there appear increasingly, different concepts of integrated teaching which all encompass showing the students the world in a holistic manner and the principle of universal activity of students in cognitive, emotional and motivational, as well as in practical spheres of knowledge.

Information Technology has been identified as playing a critical role in curriculum implementation as it has been observed that its proper use can enhance teaching and learning. There have however, been very little efforts in the integration of ICT into the Nigerian secondary school classes to bring technology into the classroom for improved learning and performance.

The introduction of computer into the teaching and learning in junior secondary schools has followed two general tracks. The first one was its introduction as a compulsory subject, (computer science) and or as informatics. The second one involved the use of computers in a rainbow of different subjects. The introduction of computers into students work in other subjects is encouraged by authorities, but the final decision about their use in teaching is left to the discretion of the teachers. The difference between these two paths is that teachers in the first group are trained professionals in computer science and informatics, while teachers in the second group are more or less enlightened “computer amateurs”. Therefore, there is need to energize action to bring ICT into the classroom for improved Social Studies instruction. Hence, this study tries to determine the potentials of ICT in Social Studies instruction in secondary schools.

Statement of the Problem

As has been noted, despite the significant investment in teacher training and resources, Nigerian schools are still far behind in ICT usage in many academic fields including Social Studies. There have been very little efforts in the integration of ICT into the Nigerian secondary school classes to bring technology into the classroom for improved learning and performance. Despite some concerted efforts at application of computer for instruction in some discrete disciplines for quite some time now, its application to Social Studies instruction in secondary schools has been in a very slow motion and not many (Nigerian) educators have embraced this innovative strategy as a critical approach to be employed in Social Studies instruction. Since the advent of social studies however, the clarion call has always been for innovative strategies for its instruction. The ICT is emerged in transmitting facts and figures; and since the major focus of social studies is the development of effective citizens capable of reasoned decision making based on keen ability to locate, assess, process and apply information from their environment, and with the consequential effects of the new world order, social studies educators therefore, need to inevitably employ ICT tools in their social studies instruction.

Research Hypotheses

H₀₁: There is no significant difference in the pre-test and post-test scores of:

- (a) Students taught through conventional methods and
- (b) Students taught through I.C.T. in social studies.

H₀₂: There is no significant difference in the posttest scores of students when taught through conventional approach and I.C.T. instruction mode in Social Studies.

H₀₃: There is no significant relationship between I.C.T. literacy skills of social studies teachers and their teaching efficiency.

Methodology

The research is a multi-staged study. It is both a descriptive survey and an experimental study. It used a questionnaire to assess ICT literacy skills of teachers and an achievement test to determine the academic performance of learners exposed through traditional approach of learning and ICT tools for teaching Social Studies concepts. Data collected was analyzed using the Chi-square, T-test and Pearson Product Moment Correlation statistical formulae to test the stated hypotheses at 0.05 level of significance.

Results

Hypothesis One:

The hypothesis states that there is no significant different in the pre-test and post-test scores of:

- a. Students taught through I.C.T. in Social Studies.
- b. Students taught through conventional methods

The hypothesis was tested by comparing the pre-test and post-test scores of students in the two groups respectively employing the student “t” statistic formula. The analysis is presented in tables I and II.

Table I: “t” test analysis of the pre-test and post-test scores of experimental group

School	No	Pre test (X ₁)	Mean Score <i>X</i>	Post test (X ₂)	Mean Score <i>X</i>	Variance	Standard Deviation	“t” Call	“t” Tab
School 1	30	296	9.87	387	12.9	3.1	9.61		
School 2	30	293	9.77	377	12.57	2.8	7.84		
School 3	30	297	9.9	485	16.17	6.3	39.69		
School 4	30	296	9.87	418	13.93	4.1	16.81		
School 5	30	298	9.93	373	12.43	2.5	6.25		
Total	150	1,480	49.34	2,040	68.00	18.8	80.2	5.4552	2.132

The table gives the total pre-test score as 1,480 and the mean score as 49.34 while the post-test total score was 2,040 with a mean score of 68. When tested with the student ‘t’ , the calculated value was 5.46 while the critical value was 2.13 at 0.05 level of significance. The null hypothesis was not upheld since the calculated ‘t’ was greater than the table value. Thus, there is a significant different in the pre test and post test scores of students taught through I.C.T. in Social Studies.

Table II: “t” test analysis of the pre-test and post-test scores of control group

School	Pre test (X ₁)			Post test (X ₂)		Variance	Standard Deviation	“t” Call	“t” Tab
	No	Total	Mean	Total	Mean				
School 1	25	261	10.44	403	16.12	5.68	32.2624		
School 2	25	259	10.36	389	15.56	5.2	27.04		
School 3	25	251	10.04	387	15.48	5.44	29.5936		
School 4	25	256	10.24	444	17.76	7.52	56.5504		
School 5	25	271	10.84	366	14.64	3.8	14.44		
Total	125	1,298	51.92	1,989	79.56	27.64	159.8864	1.9936	2.132

The pre-test score of the control group (table II) was 1.298 with a mean score of 51.92 while the total post-test score was 1.989 with a mean score of 79.56. The ‘t’ test value was 1.99 while the critical value was 2.13 at 0.05 level of significant. The null hypothesis was upheld since the calculated value was less than the table value. Thus, there is no significant different in the pre test and post test scores of students taught through conventional methods.

Hypothesis Two

The hypothesis states that there is no significant difference in the posttest scores of students when taught through conventional approach and I.C.T. instruction mode in Social Studies. The hypothesis was tested by

comparing the post test scores of students in both groups employing the Pearson Product Moment Correlation statistic formula.

Table III: Correlation of the posttest scores of the experimental and control groups

Schools	X	Y	“r” Cal	“r” Tab	D/F	L/S	Decision
1	12.9	16.12					
2	12.57	15.56					
3	16.17	15.48					
4	13.93	17.76					
5	12.43	14.64					
Total	68.00	79.56	0.1632	0.811	4	0.05	Ho Upheld

The analysis gives the calculated “r” as 0.1632 with a table value of 0.811. This indicates that there is no a significant difference in the posttest scores of both the experimental and control groups.

Hypothesis Three

The hypothesis states that there is no significant relationship between I.C.T. literacy skills of social studies teachers and their teaching efficiency. The hypothesis was tested with data generated from teachers’ questionnaire employing the chi-square statistic formula. The analysis is given in table IV.

Table IV: Relationship between ICT Literacy Skills and Teaching Efficiency (N = 30)

S/N	STATEMENT	SA	A	D	SD	NR	Total
1.	I am a social studies teacher by profession	15	4	5	3	3	30
2.	I always use ICT gadgets for teaching Social Studies	1	10	10	5	4	30
3.	I always engage students in practical activities	8	15	3	2	2	30
4.	We have adequate ICT equipment in my school.	4	14	3	5	6	30
5.	Students prefer practical classes to theory classes	13	7	3	2	5	30
6.	Maintenance measures are often carried out on the equipments.	2	15	6	5	2	30
7.	The ICT equipments are always in good condition.	2	12	9	5	2	30
8.	We have un-inhibited access to computer when needed for work in the school.	6	11	6	5	2	30
9.	I have free access to computer when I need it for work at home	6	10	6	4	4	30
10.	There is a multimedia room for teaching of Social Studies in my school.	2	8	7	10	3	30
11.	I have attended seminars/symposia/conferences on ICT literacy to improve my teaching efficiency.	11	15	1	3	-	30
12.	ICT provides more motivation and challenges	7	14	3	3	3	30

	that encourage students in Social Studies lessons.						
13.	The use of ICT gadgets supports the development of higher level thinking in students.	8	15	1	2	4	30
14.	The use of ICT enables one to take care of individual needs of learners in class.	7	16	2	2	3	30
15.	The use of ICT enables cooperative learning among learners.	8	16	4	-	2	30
16.	The use of ICT encourages more interactive relationship between students and teachers.	8	15	5	-	2	30
17.	The use of ICT encourages students' active participation during instruction.	6	17	4	1	2	30
18.	The use of ICT gadgets to teach Social Studies encourages judicious and effective use of time.	1	11	11	7	-	30
Total		X 115	225	89	64	49	542
		% 21.3%	41.7%	16.5%	11.9%	9.1%	100%
X² Cal = 87.88		X² Tab = 21.03		D/F = 12		Sig. Level = 0.05	

From the analysis above, the calculated X^2 was 87.88 while the table value was 21.03 (i.e. $X^2_{cal} > X^2_{tab}$). The null hypothesis was rejected since the calculated value was greater than the tabulated value. Therefore, there is a significant relationship between I.C.T. literacy skills of Social Studies teachers and their teaching efficiency.

Discussion of Findings

The study looks at the inherent influence, issues, problems and prospects of using Information and Communication Technology tools in Social Studies instruction. The result of the analysis of the pretest and post test scores of both the experimental and control groups (tables I and II) shows that the use of ICT in Social Studies instruction leads to more creative teaching and learning and thus improved learning outcomes. The post test scores of the experimental group were significantly higher than their pretest scores after being taught with ICT tools. This is an evidence that the Computer/ICT tools are veritable in influencing academic performance of students when effectively utilized. In line with this finding, Walker, Rockan, and Chessler (2002) found that students that always use laptops had improved writing skills and confidence in computer usage in comparison to other students who do not. Yusuf (2005) believed that the field of education has been affected by ICTs which have undoubtedly affected teaching, learning and research. He was also of the opinion that ICTs have the potential to accelerate, enrich and deepen skills, to motivate and engage students, to help relate school experience to work practices, to create economic viability for tomorrow's workers, as well as strengthening teaching and helping school change. Collins

(1989) in his own view believes that many early computer scientists saw the possibility of the computer replacing teachers in school and most would not like this to be realized. However, Becker, Raritz and Wong (1999) believed that computers had only a minimal impact on what happens in the classroom. Their argument was based on the premise that ICTs had little impact on the experiences of students and teachers in schools and the use of ICT in the classroom has positive correlation with the pedagogical training than technical skill. However, it can be concluded that the use of ICT in the teaching and learning of Social Studies makes a significant difference in the performance of learners compared to using the traditional chalk and talk approach to teaching as evidenced in the outcome of this study.

The result of the analysis of the I.C.T. literacy skills of Social Studies teachers and their teaching efficiency in Social Studies showed that a majority of these teachers make use of I.C.T equipment in classroom teaching. This is as a result of the fact that a high number of these schools have access to computers and 10% of the teachers surveyed equally have access to laptops when needed for work. However, a recognized problem is that computer classrooms/laboratories are inadequate in number for teaching Social Studies. Apple (1992) advised teachers to make appropriate use of ICT gadgets in the classrooms in order to get rid of lecture-based or didactic teaching methods. He equally noted that teachers need to be trained in areas like personal skills in use of ICT, professional skills and competence in ICT such as understanding the relevance and application of ICT tools in education, understanding how to plan ICT for teaching and learning across the curriculum, and managing ICT in the classroom. Hargreaves and Fullan (1999) pointed out that if teachers do not acquire and display the capacity to redefine their skills for the task of teaching, and if they do not model in their own conduct and the very qualities – flexibility, networking, creativity – that are now key outcomes for students, then the challenge of schooling in the next millennium will not be met. The National Council for Accreditation of Teacher Education (NCATE, 2005) reported that the use of ICT in education and teacher education institutions has increased rapidly. The only problem was the need for improvement in the use of ICT, rather than provision of ICT equipments. This result further confirms the earlier finding of Willis & Mehlinger (1996) which emphasized the need for using I.C.T as a tool for teaching and learning in schools by teachers. From their survey conducted on the influence of I.C.T. on Social Studies instruction, the result showed that most of the teachers were not professionally trained in ICT tools and few or little professionals among them were not Social Studies inclined. From the data in table IV, it is concluded that the teachers were not professionals in ICT but are in line with the main stream of introduction and application of ICT into the teaching routine.

Conclusion

From the findings of this study so far, it can be concluded that the use of ICT tools in instruction influences students' achievement in Social Studies. Students taught with computers could perform better than students taught traditionally and for effective and efficient usage of ICT in Social Studies instruction, constant practical work using computers should be encouraged in junior secondary schools. Social Studies is more interested in the reality of the reciprocal interaction of the child and his environment therefore, it is a practical oriented subject in which ICT can be highly employed in order to expose the learner to visible information and data about his environment. There is also a dear need for adequate provision for more ICT equipment in junior secondary schools and equally, the employment of more qualified Social Studies teachers who are ICT literate.

Recommendations

Having identified the various problems faced by ICT usage in Social Studies instruction, the study therefore suggests that:

1. Constant training and re-training programmes particularly on the application of ICT in teaching various subjects, (social studies inclusive) should be constantly organized for secondary school teachers to keep them abreast of needed skills.
2. Government should assist in equipping available ICT centers used by schools and to improve on the existing infrastructure in the schools.
3. More specialists in Social Studies who are ICT literate should be employed to handle the subject in the schools.
4. Concerned bodies should help to provide training materials for practical classes in the junior secondary schools.
5. More funds should be provided to affected junior secondary schools in running and maintaining their ICT centers.
6. All secondary schools should be provided with necessary ICT equipment to encourage their usage in teaching and learning generally and
7. Government should work harder in stabilizing electricity supply in Nigeria as a step towards effective use of ICT in schools.

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