

AN INVESTIGATION OF ICT UTILIZATION BY SECONDARY SCHOOL SOCIAL STUDIES TEACHERS IN THE PRODUCTION OF INSTRUCTIONAL MEDIA

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ABSTRACT

This paper investigated the utilization of ICT by secondary school Social Studies teachers in the production of instructional media in Minna, Niger State. The professional knowledge and skills of instructional media and technology possessed for the production of instructional media indicated by the tasks the teachers can accomplish, the source of their knowledge and the types of instructional media that they produced were considered. Attempt was made to find out whether the knowledge and skills possessed varied with gender. Survey design was used for the study and a structured questionnaire was used to collect data from 101 respondents, 58 male and 43 female. Weighted mean and t-test statistics were used to analyse the data. The results revealed that teachers possess moderate level of knowledge and skills of instructional media and technology for the production of instructional media based on the tasks that they can perform though the overall level of the types of instructional media that the teachers could produce was low. The study also revealed that Social Studies

teachers' major source of knowledge was personal effort. There was no significant difference between male and female teacher's knowledge and skills. As such it is recommended that government at all levels should make available the ICT facilities needed for training, also seminars and workshops should be organized on regular bases for teachers on instructional media and technology to enhance their proper knowledge.

Introduction

Information and Communication Technology (ICT) is an essential tool used by humans to acquire knowledge in the 21st Century. Integration of ICT into education has been an important concern in Nigeria. This is shown when the National Policy on Computer Literacy was launched in 1988 (Abimbade, 1999), and ICT enshrined in the National Policy on Education, NPE (Federal Republic of Nigeria, 2004). Even the Universal Basic Education syllabus has computer literacy as one of its core subjects (NERDC, 2007). This is intended to make the society computer literate (Abimbade, 1999). For the effective integration of ICT into education, teachers should be able to apply the knowledge and skills of ICT in subject areas, i.e to apply ICT tools for working within specific subject area such as science (Onuyi, 2008).

The paradigm shift in teachers' role in the teaching-learning process has made the process learner-centred and activity-based. The instructional media that are needed by a teacher for his lessons may not always be readily available (Asadu & Ameh, 2002; Ugwu and Ogbu, 1998). The production of such media by the teacher becomes very important if they must be used. The activity-based teaching of Social studies (NCCE, 2008) further necessitates the use and the production of instructional media. Proper and effective use of instructional media helps to develop interest and creativity in learners. It promotes longer retention and better understanding of abstract concepts, encourages participation and reduces verbalism, among others.

ICT has changed the nature of teachers' work, including the production of teacher-made instructional media. The teacher can

use ICT to produce the instructional media (Arnold, Padilla & Tunhikom, 2009; Jerry & Asanga, 2009). Using ICT in the production of instructional media is a task that requires ingenuity and creativity on the part of the producer. Social Study teachers may have the ICT knowledge and skills but do not use it to produce instructional media for science teaching; while some may not have the required knowledge and skill due to reasons like lack of personal computer or inadequate training in the relevant areas of ICT (Arnold, Padilla & Tunhikom, 2009).

According to Arnold, Padilla and Tunhikom, (2009) one of the domains within the teacher professional knowledge is the knowledge of instructional media and technology, which they said has become one of the essential domains in this century. The knowledge of instructional technology may include the knowledge of file formats; uploading; operating software/hardware; creating hyperlinks, conducting internet searches; producing movie; e-mail and telecommunication, and these are important for instructional media production. Kumar (2008) saw instructional media as "The physical tools of educational technology, including printed words, film, tape records, slides and the various combinations thereof"

Research has been carried out on ICT and its integration in educational system, acquisition of its knowledge and skills and the application of such skills. The result of a study conducted in Akwa Ibom State by Ekuinam and Nwosu (2008) to assess secondary school teachers' ability to utilize the benefits of computer application software (CAS), using perception as a factor, revealed that the overall teachers' perception in CAS was low. The study concluded that teachers need to affirm their status as facilitators of knowledge by embracing current educational practices through CAS.

A research was carried out using 18 pre-service science teachers in Thailand by Arnold, Padilla and Tunhikom (2008), entitled "the development of pre-service teachers' professional knowledge in utilizing ICT to support professional lives in which technology was used as a tool for enhancing the development of professional knowledge in seminar organizing activities, online

discussion in the course and designing instructional movies activity. The result revealed that most of pre-service science teachers' professional knowledge of instructional media and technology for the production of instructional media was low before training and practice though teachers felt more comfortable using software and hardware. They were however able to design instructional movies among others, after 60 minutes training and another 60 minutes practice.

Not much has been done on knowledge and skills ICT possessed by secondary school teachers to produce the needed instructional media. Based on the researcher's knowledge no such research has ever been carried out in Minna. It was against this background that the researchers sought to investigate the knowledge and skills of ICT possessed by secondary school social study teachers for producing instructional media.

Objectives of the Study

1. To determine whether the secondary school Social Studies teachers in Minna metropolis possess the knowledge of ICT required for producing instructional media using ICT.
2. To determine the types of training received to acquire the knowledge and skills.
3. To determine the types of instructional media that the Secondary School Social Studies Teachers in Minna produce using ICT.

Research Questions

The study was guided by 3 research questions.

1. Do Secondary School Social study teachers in Minna metropolis possess the knowledge and skills of ICT for the production of instructional media?
2. What are the sources of Secondary School Social Studies teachers knowledge and skills of ICT?
3. What are the types of instructional media that Secondary School Social Studies teachers in Minna metropolis produce using ICT based facilities?

Hypothesis

H₀: There is no significant difference between male and female secondary school Social Studies teachers' knowledge and skills of instructional media and technology required for the production of instructional media using ICT, as indicated by the tasks that they can perform.

Methodology

Survey design was employed for the study. The target population was all the government secondary school Social study teachers in Minna metropolis of Niger State. As at July, 2011, there was 108 Social study teachers in all the 25 government secondary schools in the study area, as provided by the record obtained from the Zonal Education Office. 101 of the Social study teachers were computer literate and were the ones used for the study.

The instrument used to collect data was a structured questionnaire tagged Social Study Teachers' Instructional Media Production Questionnaire (STIMP-Q). The instrument had two sections, sections A and B. section A sought demographic data about the respondents while section B sought the opinions of the respondents regarding the knowledge and skills of Instructional Media and Technology they possessed to produced instructional media and the types of instructional media that they produce. Section B was structured using the four-point scale of Strongly Agree, SD (4); Agree, A (3); Disagree, D (2) and Strongly Disagree, SD (1). The instrument was validated and its reliability established. It was then used to collect data from 101 respondents by the researchers who gave out the questionnaire, waited to collect the filled questionnaire before leaving.

Weighted means and t-test statistics were used for the analysis. The result for the levels of knowledge and skills possessed, and types of instructional media produced were described at 3 levels based on the weighted mean score; as low, L (below 2.00), moderate, M (2.00 – 2.99) and high, H (3.00 and above). While result of the source of knowledge were described at 2 levels of Not a Source, (x)(below 2.50) and Source, S (2.5 and above)

Results

Table 1: Knowledge of instructional Media and Technology Possessed by Social Study Teachers for the Production of Instructional Media Using ICT.

N = 101

S/ N	Item	SA (4)	A (3)	D (2)	SD (1)	Tota l	\bar{x}	Level
1	I can identify the various file formats	48	99	60	26	233	2.31	Low
2	I can carry out the process of uploading and downloading information on the Internet.	96	90	58	18	262	2.59	Moderate
3	I can operate ICT software/hardware to produce instructional media	172	171	2	0	345	3.26	Low
4	I can create internet searchers using the various search engines	36	60	62	41	199	1.97	Moderate
5	I can conduct internet searchers using the various search engines.	160	153	12	4	329	3.26	Low
6	I can produce movie using the various Movie Makers like Windows Movie Maker Program.	32	33	46	59	170	1.68	Moderate
7	I can access my mail through my e-mail box	88	99	50	21	258	2.55	Moderate

Table 1 reveals the knowledge and skills of ICT possessed by secondary school Social Studies teachers in Mina Metropolis based on their opinions on the tasks they can perform. Out of the 7 tasks, 2 were low, 5 indicated moderate and the none was high. The overall level of task performance was moderate, 2.54.

Table 2: Level of Acquisition of ICT Knowledge

N = 101

SN	Item	SA (4)	A (3)	D (2)	SD (1)	Tot	\bar{X}	Decision
1	I acquire ICT knowledge through prescribed courses at the College/University	8	45	82	43	178	1.76	NS
2	I acquired ICT knowledge through seminars and workshops on ICT organized for teachers	12	51	64	49	176	1.74	NS
3	I acquired ICT knowledge personally by owning some ICT hardware and software.	20	189	60	3	272	2.69	S
4	I acquired the knowledge of ICT through personal effort by undertaking training privately.	132	201	2	0	333	3.32	S
5	I acquired the knowledge of ICT by visiting Cyber Café.	68	117	62	14	261	2.58	S

NS – Not Significant

S – Significant

Table 2 reveals the source of secondary Social Study teachers' knowledge and skills in ICT. Of the 5 items 3 were indicated as sources while 2 were not sources.

Table 3: The various types of instructional Media that School S/S Teachers produce

N = 101

1	Printed text (books, handouts, worksheets)	212	144	0	0	356	3.52	High
2	Printed visuals (pictures, photos, drawings, chart, graphs, drawings, charts, graphs)	36	69	60	39	204	2.02	Low
3	Overhead transparencies	0	9	86	55	150	1.49	Low
4	Slides and films strips	0	15	108	42	165	1.63	Low
5	Audio (tape, disc, voice)	108	63	44	31	256	2.44	Low
6	Video and film (tape, film, disc)	32	60	66	40	198	1.96	Low
7	Audio-visuals (tapes, film, disc)	120	63	46	27	256	2.53	Moderate
8	Computer software, including the World Wide Web	0	36	58	60	154	1.52	Low
Total		508	459	468	294	1729	2.44	Low

Table 3: Reveals the types of instructional media that the secondary school teachers produce. Out of the 8 types of instructional media 1 indicated high production, 1 moderate while 6 indicated low production. Thus, the overall production level was low.

Table 4: summary of the t-test of Hypothesis (there is no significant difference between male and female secondary school Social Study teachers' knowledge and skills of instructional Media and Technology required for the production of instructional media using ICT).

Gender	N	Mean	SD	df	T_{crit}	t_{cal}	Decision
Male	57	2.67	0.731	99	1.98	0.54	Retain H_0
Female	43	2.49	0.498				
Total	100						

Table 4 reveals that the result of the t-test with the calculated t-value (0.54) at 0.05 alpha level is smaller than the critical t-value (1.98) for

99 degrees of freedom. The null hypothesis is accepted since there is no statistical significance. The result concludes that there is no significant difference between the male and female teachers' knowledge and skills of ICT based on the tasks they can perform.

Discussion

The overall knowledge and skills of the teachers based on the task they can perform is moderate. The ability to operate hardware and software had the highest MW which is in agreement with the finding of Arnold, Padilla and Tunhikurn (2009). This may be due to PCs becoming more popular and accessible than other ICT facilities, since teachers indicated owing PCs as a source of knowledge and skills. Internet searches: uploading and downloading on the internet, and e-mailing; in decreasing order of their MWs, were the other tasks that the teachers can perform at moderate levels. The finding that Cyber Café is a source of knowledge and skills for the teachers could be the reason why these tasks appear to be the one that the teachers can perform.

Producing movie using movie makers, creating hyperlinks and identification of file formats were rated low as tasks that the teachers can perform. The finding that private training and visit to Cyber Café are the major sources of knowledge and not through prescribed courses at the College or University or seminars and workshops may be a proof for this finding. This is because the nature of knowledge and skills sought for in this circumstance may be directed towards personal interest rather than towards general or professional demands.

Printed texts were rated high on production level of the types of instructional media produced by teachers. Word processing seems to be the basic skill in computer and when knowledge and skills are not acquired through the implementation of professionally designed curriculum personal interest or level of simplicity may guide the search for knowledge and skills. The source of knowledge and skills of the teachers as indicated by this study's finding is not through prescribed courses in the University, but the teachers chose to learn in their own way. This could have affected production of the

other instructional media in which the production of audio-visuals was rated moderate and printed visuals, overhead transparencies, slides and films, audio, video and film. And computer software were rated low. However the overall level of instructional media production by teachers was low.

There was no significant difference between male and female teachers' knowledge and skills needed for the production of instructional media. Teachers were therefore rated the same. The low level of instructional media production implies lack of adequate knowledge and skills in appropriate aspect of ICT, that is instructional media and technology.

Conclusion

There is need for teachers to acquire appropriate knowledge and skills in ICT relevant to instructional media production. Teachers should appreciate the paradigm shift in teachers' role and need for teachers to produce instructional media using computer based facilities.

Recommendations

It is recommended that:

Government at all levels should make available the ICT facilities needed for training.

Seminars and workshops should be organized on regular bases for teachers on instructional media and technology.

Outstanding performance of teachers in the area of instructional media production should be rewarded.

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