ICT INNOVATIVE SKILLS AND TEACHER'S COMPETITIVENESS AMONG BASIC TECHNOLOGY TEACHERS IN KANO STATE, NIGERIA

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Abstract

The study focused on ICT innovational skills and teacher's competitiveness in teaching basic technology in Kano state. The study adopted a descriptive survey design that used a 10 item structured questionnaire for data collection. The population of the study was 117 Basic Technology Teachers. 88 of the teachers were selected through stratified random sampling technique. The z- test statistic using the SPSS package was used to testing the hypothesis at 0.05 level of significance. The study found that Basic Technology teachers in Kano State needs ICT innovational skills in all major technical skills areas. Their background in those ICT skill areas are either obsolete or defective. Based on the findings, the paper recommends that emphasis should be placed on the development of ICT innovational skills by providing the needed resources, condition and enabling environment for effective teaching of Basic Technology in Kano State.

Introduction

The existing technical skills gap between the NCE graduates of Technical and Vocational Education and the need of the schools or industry as noted by (Aina, 2008) has become a major concern to parents and educators in Nigeria. Employers have continually expressed their concern over the quality of the present NCE graduates of Technical and Vocational Education for their level of inadequacy of the relevant skills required for employment (Teaching basic technology).Teachers cannot remain competent forever; their skills can become obsolete, because the society is constantly changing; the type of jobs that exist and the skills necessary to do the job.

Federal Republic of Nigeria in the National Policy on Education (NPE, 2013) has the expectation that teaching in Nigeria shall attain the highest educational standard possible. The NPE further stated, 'since no education system can rise above the quality of its teachers,' clearly demonstrates the role of teacher and teacher education programmes in national development. Usman (2009) observed that various teacher training program in Nigeria has not incorporated ICT innovational skills in a manner that could promote assimilation in teaching which resulted in difficulty in modern teaching and learning. Shettima (2010) also opined that, due to the need of digitalization in teaching and learning of basic technology today and the frequent changes in ICT software, most secondary school teachers find it difficult to teach in a way that will enable students to acquire basic ICT skills.

ICT skills need by technical teachers

It is no longer a question whether or not ICT should be used in the classroom. The emphasis is to ensure that teachers use ICT effectively to create new opportunities for students to learn and raise their achievement. The use of ICT in the classroom requires that teachers should be knowledgeable and competent in ICT innovational skills; integrate them into the curriculum, align them with student learning goals, and use them to engage students in a quest for meaningful academic development.

Sam and Aduwa (2009) stated that, Twenty-first-century teachers are required to develop the skills that will enable them to maximize the use of ICT as a teaching resource to enhance students learning and to prepare students to master high technology in society, in which lifestyles, attitudes, and skills are challenged daily.

Sara (2010:P45) opined that bringing ICT into classroom can have a considerable impact on the practice of teachers, in particular when ICT is conceptualized as a tool that supports

a real change in teaching and learning. Teachers are to acquire basic ICT skills and also need to determine which applications have added value to teaching and learning in the subject area. While doing this, teachers need to be aware that this is not a one-time activity, as information is continuously changing. There is no doubt that teacher who used ICT in classrooms has demonstrated high levels of energy, hard work and perseverance.

Aremu and Fasan (2011) also viewed that living effectively in this technological age will demand some understanding of basic concepts, principles and application of ICT by everyone (Basic technology Teacher inclusive). Samson, Chukwuedo, Godwin and Omofonmwan (2013) also stated there aremany ICT tools that exist for teaching and learning, and these include audio-cassette tapes, radio, video, DVD, CD-ROM, internet and assistive technologies such as optical character recognition (OCR), text enlarger software and voice recognition software, to mention a few of them. Uwem (2014) maintained that, those innovative technical teachers who will creatively and effectively use ICT in their classroom to engage students and provide them with 21st century ICT skills were urgently needed as an intervention in the Nigerian educational system. Therefore Kano State Basic Technology Teachers need to be part of a community of practitioner of ICT-supported teaching.

Statement of the Problems

Summary of students' results for 2010, 2011, 2012 and 2013 as obtained from the Kano State Educational Resource and Development for Junior Secondary School Basic Technology subject showed that students' performance has been consistently poor (KERD), 2013. See Appendix IV). This is premised on the fact that teaching Basic Technology has been through the conventional lecture. The approaches that enable students to acquire basic skills have been neglected. Similarly, the use of ICT has been a serious challenge and teachers find it difficult to teach in a way that will enable students to acquire basic skill. Hence, this study intends to explore the inculcation of ICT basic innovational skills among students.

Purpose of the study

The main purpose of this study is to determine the ICT innovational skills and teacher's competitiveness in teaching basic technology in Kano state. The results of this study will be of benefit to basic technology teachers, students, administrators and concerned educational agencies.

Research Question:

What are ICT innovational skills and teacher's competitiveness in teaching basic technology in Kano State?

Hypothesis:

There is no significant difference between the mean responses of basic technology teachers on ICT innovational skills and teacher's competitiveness in teaching basic technology in Kano State.

Results and Discussion

Table 1 below shows the summary of the responses collected on ICT innovational skills and teacher's competitiveness in teaching basic technology in Kano state.

Table 1: ICT Innovational Skills and Teacher's Competitiveness in Teaching Basic Technology

SN	Needed Skills	$\bar{X}_1$ $N_{1=69}$	$\bar{X}_2$ $N_{2=19}$	$\bar{X}_T$	δ	Remark
1	Ability to describe meaning and nature of ICT process	3.89	0.76	2.33	1.11	MN
2	Ability to describe internet and its process	3.63	0.69	2.16	1.04	MN

3	List and describe Internet equipment and transmission process	3.63	1.18	2.40	0.87	MN
4	Explain the merits and demerits of internet	3.58	1.38	2.48	0.78	MN
5	Ability to search Internet for resources	3.58	1.18	2.38	0.85	MN
6	Ability to access and send e-mails	3.63	0.97	2.30	0.94	MN
7	Ability to use computer for grading and producing assignments for students	3.68	0.97	2.33	0.96	MN
8	Ability to use presentations devices for Classroom teaching and learning	3.74	0.97	2.3	0.98	MN
9	Ability to Create a document on a word processor	3.79	0.97	2.38	1.00	MN
10	Organize files, locate files quickly, and backup files to flash disk or other storage devices.	3.84	1.06	2.45	0.98	MN

Key:$\bar{X}_1$ Mean of Professional teachers,
$\bar{X}_2$Mean of Non professional Teachers
N_1 Number of Professional teachers
N_2Number of non Professional teachers
δ: Standard Deviation
HN: Highly Needed,
N: Needed,
MN: Moderately Needed,
NN: Not Needed

The result indicates that basic Technology Teachers in Kano State moderately need ICT innovational skills in all the10 items skill areas identified. The result on this table clearly shows a moderate level of deficiency on the needed skills by basic Technology Teachers on ICT innovational skills and teacher's competitiveness in teaching basic technology in Kano State.

Hypothesis: There is no significant difference between the mean responses of basic technology Professional and Non professional teachers on ICT innovational skills and teacher's competitiveness in teaching basic technology.

Table 2: z-Test for the Mean Responses of Professional and Non Professional Teachers on ICT innovational skills and teacher's competitiveness in teaching basic technology subject

Respondents	N	$\bar{X}$	S^2 (Var.)	z-cal	z-critical	Decision
Professional Teachers	69	3.70	0.01	39.28	1.91	Rejected
Non Professional Teachers	19	1.01	0.04			

Table 2 shows z-test for mean responses of Professional and Non Professional teachers on ICT innovational skills and teacher's competitiveness in teaching basic technology. The z-cal is 39.28 which is greater than the z-critical table value of ± 1.96 at 0.05 level of significance. This implied that the null hypothesis that there was no significant difference between mean responses of basic technology teachers on retraining needs on ICT innovational skills and teacher's competitiveness in teaching basic technology subject in Kano State is rejected.

Major Finding of the Study

The study presented ten (10) questionnaire items on ICT innovational skills needed. The respondents indicated moderately needed in all the ten items. This indicated that teachers of basic technology in Kano State so much needs of ICT innovational skills and teacher's competitiveness in teaching of basic technology. The finding revealed that out of ten areas of ICT innovational skills and teacher's competitiveness, the respondents indicated moderately needed in all the ten areas. This implied that there was no significant difference between the mean responses of basic technology Professional and Non professional teachers on ICT innovational skills and teacher's competitiveness in teaching basic technology subject is rejected.

Conclusion

Teachers who possess the required knowledge and skills will prepare students adequately which can lead to production of educated students equipped with expected norms and values which will be functional in the society. It is time for paradigm shift from traditional teaching and learning to e-learning classroom environment for global competitiveness. Although basic technology teachers in Nigeria may have the challenge of accessing digital tools as a result of poor funding and remuneration, teachers who are preparing students for life in this 21st century should be digitally literate. ICT innovational skills were essential tools for quality technical teacher education, this will ultimately leads to a better future for technical students. Technical students of today may require a new and different way of thinking, interacting with information, and a different approach in teaching basic technology to be competitive. On the ten(10) items on ICT innovational skills and teacher's competitiveness in teaching basic technology in Kano State, all the ten (10) items were rated as moderately needed. Therefore, all the ten(10) items can now be adopted or employed by basic Technology Teachers for Effective ICT Implementation of Junior Secondary School Basic Technology in Kano state.

Suggestion

For the basic technology teachers to remain relevant on their jobs, there is need to lay emphasis on subject mastery and expected to focus on ICT innovational skills and competitiveness in teaching basic technology. Basic technology teachers should be encourage have the relevant skills needed for teaching basic technology by undergo some form of retraining programs depending on their identified needs.

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APPENDIX IV

KANO STATE MINISTRY OF EDUCATION
KANO EDUCATIONAL RESOURCE DEPARTMENT
2010 JSCE EXAMINATION SUBJECT SUMMARY

S/N	SUBJECT	A	C	P	F	TOTAL
1	ENG	2484	28469	31213	25314	87480
2	Maths	3013	24141	23409	36891	87454
3	IRK	13058	44786	19386	7331	84561
4	Hau	3672	40872	27268	15344	87156
5	A/Crt	625	3933	2247	1820	8625
6	Agric	3862	32458	24539	18147	79006
7	Ara	6702	34316	18340	11405	70763
8	B Std	1657	12395	10843	8708	33603
9	CRK	18	1100	1043	872	3033
10	French	1046	3165	363	1142	5716
11	H/Eco	974	8860	8807	7460	26101
12	Int Sc	3076	32312	29732	21992	87112
13	Int Tec	1736	13383	11029	8356	34454
14	Isl His	125	2081	1609	1604	5419
15	P H SCI	1712	26562	25020	19770	73064
16	S/S	5026	38529	25728	17690	86973