Assessment of Nigerian Teacher Educators' ICT Training

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Abstract

The study examines the nature and impact of ICT trainings received by teacher educators in Southwestern Nigeria teacher training institutions.

Four hundred and sixty nine teacher educators participated in the study by responding to three research instruments. The instruments enquired information on ICT training background, competence and use level of teacher educators. Data were analyzed using descriptive statistics, one-way ANOVA and Chi-square. Result showed that more than half of the educators had been exposed to one form of ICT training or the other. But trainings had hardly included the use of ICT in instruction. Most of those trained received their training directly from the institution. Educators preferred mostly the inclusion of software skills on teachers' ICT training curriculum. It was also found that training delivery has no varying effect on basic ICT skills.

Keywords: ICT , Assessment ,Training

Introduction

Informal observation reveals that there have been considerable (though uncoordinated) ICT-training efforts of late both at personal and institutional level among teacher educators. The purpose of these trainings is making teacher educators ICT skilled both in personal activities and day-to-day professional practices. The problem has been that these trainings don't impact the integration of ICT into teacher educators' classrooms. At best teacher educators use the Internet and in few cases use computers for word processing. Thus teaching with ICT in Secondary and Primary Schools still becomes impossible to achieve. This is because serving teachers did not experience ICT immersed curriculum in their professional preparations and they pass on what they receive. Student teachers that will use computers and ICT in later teaching practice must have observed their teachers using computers. (Jegede 2006, Jegede & Adelodun, 2003).The most critical factor in the successful integration of ICT into education is the extent to which teacher educators are able to prepare teachers with the required knowledge and skills to utilize ICT effectively (ICT in Education, 2004).Oliver (1994) identified the needs for student teachers to experience models of ICT use in their own learning before they can go ahead to implement same in their later profession. Teacher education institutions may either assume a leadership role in the transformation of education or be left behind in the swirl of rapid technological change (UNESCO, 2002).

It becomes imperative therefore then to answer the following questions: What nature of training did teacher educators themselves received? Who trained the trainers? What nature of training delivery will produce the best effect in classroom practice? And does the ICT- use level of teacher educators bear significant relationship with the nature of training(s) received? What do teacher educators themselves perceive as necessary ICT skills for contemporary teacher education programme? Answers to these questions will identify possible deficiencies in teacher educators ICT training efforts in Nigeria which will enable the inclusion of the type of competences that will impact classroom ICT integration rather than mere general ICT skills. Thus enabling the delivery of appropriate ICT integrated curriculum necessary for pre-service teacher education programme.

Methods

The study is a survey design with 500 teacher educators randomly selected from 12 teacher training institutions (6 Colleges of Education, 6 Universities) participating in the study. The selection cut across all disciplines and professional cadre.

Three research instruments were used to elicit needed information from the respondents; The Teachers ICT Questionnaire (TICTQ), the Teachers ICT Use Checklist (TICTUC) and the Teachers ICT Competence Scale (TICTCS). TICTQ enquired on ICT training background of the teacher trainers as well as what they perceived as needed contents in teachers ICT training curriculum. The Teachers ICT Use Checklist (TICTUC) was originally developed for use with Singapore teachers by Soh (1998). It consisted originally of 13 items out of which 11 items were adopted, 2 items were removed based on judgment that they are not needed by teacher's Educators are to indicate how often the computer has been used for a specific purpose in the past three months. The scores were organized into four sub-scores and described as Data Processing, Word Processing, Communication (i.e. using Internet for searching teaching materials and sending messages to others) and Instructions using ICT. The items were scored as Never=1, Occasionally = 2, Sometimes =3, Often = 4, Very Often = 5. TICTCS consists of 21 items, the items covered Internet skills, teaching with ICT and basic computer skills, respondents were to indicate their ICT competence on a 5-point scale of Very well=5,Well=4,Fairly well =3,Slightly =2,Not at all=1. The three instruments were validated through pilot study in a college of education and a university outside the states of the study. TICTUC and TICTCS yielded reliability coefficients of 0.75 and 0.95 respectively. The research instruments were personally administered on five hundred teacher educators with the assistance of 3 field assistants. Four hundred and ninety participants returned the instruments, however only four hundred and sixty nine were found useful as the remaining 21 were not completely filled.

Results

Tables 1 through 5 show the results. Data were analyzed using simple percentages and One-way Analysis of Variance.

Table 1: ICT Training Deliveries

Training Delivery	Number	Percentage of the trained educators	Percentage of the total educators
Private Firm	113	42.16	24.09
Institution Authority	136	50.74	28.9
Degree Programme	09	3.35	1.92
Pedagogical training	08	2.98	1.71
Total no. of trained	**268**	**100**	**56.50**

Table 2: Teachers' Perception on ICT Training Content

Training Content	To be Included		Not to be included	
	No	%	No	%
Hardware	335	75	112	25
Software	361	80.1	88	19.7
Programming	287	64.3	159	35.6
CAI	325	72.6	123	27.4
Courseware	274	61.1	174	38.9
Ethics	303	68	142	32
Webskills	291	64.0	165	35.0

Table 3: ICT Use Level of Teachers' Educators

	N	Mean	S.D	Min	Max
Data Processing	268	8.48	5.32	0.00	34.00
Instruction (CAI)	268	5.02	2.83	0.00	17.00
Word Processing	268	6.33	3.10	0.00	18.00
Communication	268	5.85	3.32	0.00	15.00

Table 4: Differences in Use Level and Training Delivery

		Sum of Squares	df	Mean Square	F	Sig.
Use level	Between Groups	90.290	3	30.097	.192	.902
	Within Groups	41415.154	262	156.876		
	Total	41505.444	265			
Uselevel in Data processing	Between Groups	24.244	3	8.081	.267	.849
	Within Groups	7950.820	262	30.231		
	Total	7975.064	265			
Uselevel in Word processing	Between Groups	8.092	3	2.697	.333	.802
	Within Groups	2130.515	262	8.101		
	Total	2138.607	265			
Use level in Comminication	Between Groups	17.441	3	5.814	.692	.558
	Within Groups	2210.566	262	8.405		
	Total	2228.007	265			
Use level in Instruction	Between Groups	10.451	3	3.484	.313	.816
	Within Groups	2929.017	262	11.137		
	Total	2939.468	265			

Table 5: Relationship between Training Deliveries and ICT Competence

	No Competence	Little Competence	Average Competence	High Competence	Very High	X^2	df	P
Private Firm	0 (0%)	17(6.4%)	25(9.4%)	41(15.4%)	30 (112%)	14.51	12	>.05
Institution Authority	3(1.1%)	16(6.0%)	36(13.5%)	43(16.1%)	39(14.6%)			
Degree Program	1(0.4%)	0(0%)	1(1.4%)	4(1.5%)	3(1.1%)			
Pedagogical Training	0(.0%)	1(.4%)	4(1.5%)	2(.7%)	1(.4%)s			

From Table 1, only 265 of the respondents indicated prior training in ICT. The training providers were also indicated. In all, 113 (i.e. 24%) of the trained educators received their training from private firms. While training delivery through individual institutions were experienced by 136 (29%) of the ICT-trained teachers. Nine (i.e. 2%) of those who indicated prior ICT-training were those whose degree specializations were in computer or ICT-related fields. Only 8 (2%) of the 265 ICT-trained educators have been taught the skill of teaching with computer. In other words, the remaining two hundred and four of the respondents have never been taught the use of computer or ICT for any human endeavour.

On what the teacher educators felt needed for inclusion in contemporary teacher education's curriculum. It seems as if the entire indicated curriculum components in ICT for teachers enjoyed considerable support (Table 2). Exactly 361 (80.1%) indicated software skills while 335 (75%) supported the inclusion of hardware skills. CAI enjoyed the support of 325 (73%) of the teacher educators. Courseware has the least support for inclusion with 274 (61%) of the educators supporting the inclusion.

Regarding use level, Data processing has the highest while CAI has the least use level, Communication and Word processing were moderately used (table 3).

To determine whether there is significant difference between training delivery and each of ICT basic skills of Data processing, Word Processing, Communication and CAI. Teachers' responses to TICTUC were analyzed based on ICT skills area and nature of training delivery undergone. Data were analyzed using one-way ANOVA as stated in Table 4, the results showed that nature of training has no significant effect on ICT use level of teachers ($F(3,262)=.192$, $P>.05$),similarly, significant effects were not found between training delivery provided for teacher educators and use level of each of data processing ($F(3,262)=.267$, $P>.05$), word processing ($F(3,262)= .333$, $P>0.5$), communication ($F(3,262)= .692$, $P>0.05$) and CAI ($F(3,262)=.313$, $P>0.05$).

To determine whether the nature of training delivery bears relationship with teacher educators ICT competence. Teacher educators overall scores on TICTCS were categorized into 5 as "No Competence" (1-21)"Little competence" (22-42) "Average Competence" (43-63) "High Competence" (64-84) and "Very High Competence" (85-105). The relationship between nature of training deliveries and level of competence was obtained. A chi-square value of 14.51 (see table 5) was obtained. This value was not significant at 0.05 levels.

Discussion

Results of the study showed that out of the 469 respondents, 265 had undergone "formal ICT training". Observation also showed that majority of those trained have done so at personal expense. Even where the trainings were organized by schools' authorities and computer centres, payments in many of the cases have been from personal purses. Those who were trained by insti-

tutions were the largest. Training by institutions does not mean a focused, targeted training meant for teacher educators; rather it was mere digital literacy that was meant for training in beginners' skills. This training had no pedagogical content as the trainees often include non-academic staff as well. It thus becomes difficult to develop a focused curriculum for ICT training for the trainees as the audiences are heterogeneous in nature. The group that is next in size was those trained by private firms (Computer Companies). Experience has shown that basic software and keyboard skills were the emphases. This is even in cases where there are enough machines for hands on experience. In most of these trainings, web skills are hardly taught this is because most of the facilities are not Internet connected. Only 8 have been trained in the use of ICT for teaching. This is laughably small. It would seem that training deliveries that have teachers or teaching as targets had hardly happened. It is common knowledge that teachers of ICT training should now focus on processes that can be translated in a more efficient learning model for students in schools; this till now has centered on application i.e. how to use Word, Excel, Power point etc.

On what the teacher educators perceived as necessary ICT contents, it would seem as if teacher educators themselves do not understand what is needed mostly in ICT for their professional practices. This is because software and hardware skills enjoyed more popular inclusion, while CAI was the third in ranking. Even programming was accepted for inclusion beyond Web skills. Courseware was least accepted. The reason for these arbitrary interests might be because educators themselves perhaps don't understand what those contents meant. This indicates the extent of teacher educators' deficiency in ICT knowledge and understanding. Unfortunately the design of teacher education curriculum lies primarily with this category of people who themselves were minimally informed on ICT concepts.

In addition, out of the four specified ICT skills, CAI or teaching with ICT happened to be the least possessed by teachers. This is because it's hardly been part of the training contents. The need today is moving from "Learning to use ICT" to "Using ICT to Learn" (Janssens-Bevernage, Cornille, & Mwamiki, 2005). While Word processing and Data processing (i.e. using ICT to organize and analyze students' tests and results) are judged beneficial to educators, ICT based instruction is at the core of teachers needs. This would involve training teachers to create lesson plans utilizing ICT and to use educational software (ICT Education, 2006).An advance form of this is courseware development which till now is foreign to Nigerian educational system.

The fact that the nature of training provided has no significant relationship with use level in each of word processing, CAI, data processing and communication shows that the training contents are somewhat similar. In other words, the trainings provided do not impact differently on the trainees. It becomes clear that a different kind of training-well conceived, targeted and coordinated is needed for educators. What is needed at this stage is the adoption of ICT international standards and its inclusion in the Nigeria teacher education curriculum (Kwachi, 2007). While it is understandable that lack of facility could be a hindrance, a general database that would constitute a common resource for teachers and teacher educators can be put in place. With this, educators could share courseware and other educational software. With the international standard for ICT put in place and that in clear terms, it is believed that ICT training for teachers and educators will build their trainings contents and curricula around skills that will strive to achieve what is actually needed. Through this means, a coordinated and teacher-focused ICT training that will assist meaningful teaching and learning will be achieved.

In conclusion the study obtained that the trainings in ICT that teacher educators received had similar contents irrespective of the training provider, the trainings had not impacted on classroom practices as mere word and data processing skills have been the emphases. A more focused and teacher-targeted ICT training content freely delivered is what is now needed.

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Biography

Dr. Philip Jegede is an Associate Professor of ICT Education and Acting Director of the Institute of Education, Obafemi Awolowo University, Ile-Ife, Nigeria. He had B.Sc and M.Sc degrees in Mathematics from the University of Lagos, Nigeria. He later entered into the discipline of Education obtaining M.Ed and Ph.D degrees from the Obafemi Awolowo University, Ile-Ife, Nigeria. His research interest is in ICT Education particularly among pre-service teachers.

He has been a speaker in national and international conferences. His experience in the academics has spanned almost two decades. Before his present appointment he had lectured in a College of Education and a Polytechnic School.