**EMPOWERING SECONDARY SCHOOL TEACHERS FOR TEACHING AND TRAINING IN INFORMATION AND COMMUNICATIONS TECHNOLOGY (ICT)**

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**ABSTRACT**

*Teacher empowerment is crucial for preparing secondary school teachers for meeting the challenges of the shifting paradigms in the teaching/training function in an ICT Era. This paper sought to determine some ways of empowering secondary school teachers in Anambra State of Nigeria for teaching and training in ICT. Two research questions were formulated. The researchers used proportionate stratified sampling technique to select 142 principals, 1420 teachers and 12 lecturers in Educational Technology as the sample for the study. A 27-item questionnaire was used to collect data. Findings revealed that the teachers’ need to be empowered through ICT policies and competencies in ICT application in teaching. Recommendations made include that Government and relevant agencies should formulate the identified policies for teacher empowerment in ICT and the Federal Ministry of Education should design and introduce free ICT Teaching Competence Kits (containing ICT training manuals, illustrations and basic tips for ICT assisted instruction) for teachers.*

**Introduction**

Information and Communications Technology (ICT) in the education system refers to a broad field encompassing computers, communications equipment and the services associated with them. It includes the telephone, cellular networks, satellite communication, broadcasting media and other forms of communication (Maier & Warren, 2000). If designed and implemented properly, ICT use in education can promote the acquisition of the knowledge and skills that will empower teachers and students for lifelong learning in the 21st century (Onyejegbu, 2008). Teacher empowerment is central to ICT use in education.

Empowering teachers for teaching in Information and Communication Technology (ICT) involves making them able to use ICT in teaching and learning. Olibie (2007) posited that empowering teachers for ICT training means encouraging them and creating supporting conditions for their continuous training in ICT. In this regard, explicit policy development for training and teaching in ICT is fundamental (Obikeze, 2007; Rosenbalt &Inbal, 2007).There is also need for providing them with competencies for applying ICT knowledge in teaching. ICT empowerment also calls for sustained teacher training (Marandi, & Luik, 2003).

In many countries such as USA, UK, Korea, and Australia, national authorities recognize the need for empowering teachers to integrate ICT into curriculum delivery. To that end, these countries have published policies and standards for teacher empowerment (Futernick, 2007). In the UK, guidelines have been published in ICT booklets (Hawkins, 2006). Similarly, each state in Australia has demonstrated a commitment to support the development of techno-literate teachers (Federalist Papers, 2007). The Hong Kong Government has initiated mandatory standards for teacher teaching and training in ICT (Hong Kong Education Commission, 1997) just as the Korean government has made giant strides in advancing the e-teaching & learning supporting system and improving the expertise of e-Learning teachers (Korean Ministry of Education & Human Resources Development). In Nigeria, the National Policy on Education (Federal Republic of Nigeria, 2004:17) stated that “in recognition of the prominent role of ICT in advancing knowledge and skills necessary for effective functioning in the modern world, there is urgent need to integrate ICT into education in Nigeria”. With this statement, the Nigerian government recognizes the need to harness ICT for educational development. In Anambra State of Nigeria, the State Government has supplied computers to all the public secondary schools as a way of fostering ICT-driven education (Ikediugwu, 2008). To use these computers in teaching, teachers need to be ICT empowered just like their counterparts in developed countries.

**Statement of the Problem**

Secondary school teachers should be empowered in ICT training especially when it has been reported that none of the pre-service graduating teachers in Anambra State received any training on ICT-assisted instruction while in school (Nworgu, 2007). Such teachers will not be able to properly execute their roles as teachers that could use ICT to facilitate teaching and learning. To date, none of the teacher education institutions in Nigeria has courses that prepare pre and in-service teachers on how to use ICT for teaching. Akudolu (2004) noted that the ICT courses in these institutions were designed to teach the students computer appreciation. The abilities of applying the computer appreciation to optimization of ICT in instructional delivery are not taught. Olibie (2007) found that many secondary school teachers in Anambra State possess basic computer literacy but lack the competencies for applying ICT in teaching in secondary schools. There is therefore a need to empower secondary school teachers for teaching and training in ICT. Hence, the purpose of this study was to determine some ways of empowering secondary school teachers for teaching and training in ICT.

**Research Questions**

The study was based on two research questions as follows:

1. What policies should be formulated for empowering secondary school teachers for teaching and training in ICT?
2. What competencies do the teachers need to acquire for teaching with ICT?

**Research Design**

This study was a descriptive survey. This design was used in this study to collect data from secondary school principals, teachers, and experts in educational technology in order to identify some strategies for empowering secondary school teachers for teaching and training in ICT.

**Population of the Study**

The population comprised 261 principals and 5,587 teachers who are teaching in the 261 government owned secondary schools in Anambra State, and 12 educational technology lecturers in Nwafor Orizu College of Education Nsugbe, Nnamdi Azikiwe University, Awka and Federal College of Education (Technical) Umunze, all in Anambra State totaling 5860 respondents.

**Sample and Sampling Technique**

The sample for this study comprised 1574 respondents (142 principals, 1420 teachers and 12 lecturers in educational technology. The proportionate stratified – random sampling technique was adopted by stratifying the secondary schools based on the education zones where they are located. From each education zone, approximately 50 percent of the schools were selected. A total of 142 schools were selected and all their principals (N = 142) were chosen as sample. Ten teachers were selected from each of the 142 schools yielding 1, 420 secondary school teachers. Finally, all the 12 lecturers in educational technology were included in the sample.

**Instrument for Data Collection**

The researchers constructed a questionnaire titled “Teacher Empowerment for ICT (TEICT)” for data collection. The instrument was divided into two parts. Part A comprised 2 open-ended questions that elicited information on the respondents’ status, institution and location of the schools. Part B contained 27 items that were separated into two sections. Section A comprised 12 items on ICT empowerment policies, while section B had 15 items on the competencies for ICT teaching. All the items were structured on a 4-point scale of strongly agreed, agree, disagree, and strongly disagree.

**Validation of Instrument**

Two experts in educational technology from Nnamdi Azikiwe University, Awka validated the TEICT. They made some corrections which were effected in the final copy of the TEICT.

**Reliability of the Instrument**

The cronbach alpha method for testing reliability was applied. The researchers administered copies of the instrument on a sample of 10 principals, 30 secondary school teachers and two lectures in educational technology from Delta State. Their mean ratings were computed based on the two sections of the instrument. Coefficient alpha values of 0.75, and 0.78 were obtained and considered satisfactory for the study.

**Method of Data Collection**

The researchers were helped by four research assistants in distributing copies of the questionnaire to the respondents in their schools and institutions. The percentage return was 98.47 percent as only 1550 copies out of the 1574 copies administered were returned.

**Method of Data Analysis**

Mean scores were used in answering the research questions. The acceptable level of mean score was 2.50 and above. The mean of 4,3,2, and 1 was calculated to be 2.5. Any mean score below 2.5 was taken as disagree while any mean above 2.5 was accepted as agree.

**Presentation and Analysis of Data**

Table 1: Mean ratings of policies for teachers’ ICT empowerment

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Items:** |  |  |  |  |  |
| The policies to be formulated for teachers’ ICT training are: | X | X | X | Average |  |
|  | Principals  (N) = 140 | Teachers  (N = 1398) | Educational technology Experts  (N – 12) | X | Decision |
| 1. Compulsory training of secondary school teachers in ICT-assisted instruction. 2. Provision of ICT helpdesk in the Zonal State Education Commissions for teachers’ ICT teaching support. 3. Secondary school teachers should be provided access to the schools’ internet facilities from home. 4. Every serving teacher must present a financial plan to buy a personal computer. 5. Giving teachers extra time in the time table to work wit ICT. 6. Mandatory teachers’ ICT use in secondary school classrooms. 7. Including ICT competencies in the criteria for recruitment of new teachers 8. Consideration of ICT use in promotion of teachers. 9. Government must provide financial incentives to individual teachers for ICT use in education. 10. Professional development of teachers in ICT competencies should be mandatory. 11. ICT use in education should be an integral part of regular teacher appraisal/assessments 12. ICT use in classrooms should be a part of a regular quality assurance exercise. | 3.88  3.56  2.43  2.11  3.67  3.87  3.56  3.56  4.00  3.67  3.87  3.71 | 3.41  4.00  2.22  2.27  3.11  4.00  2.98  3.87  3.78  3.22  3.69  3.78 | 3.67  3.77  2.18  2.42  3.09  3.65  3.00  3.34  4.00  3.53  3.43  3.88 | 3.62  3.77  2.27  2.26  3.29  3.84  3.18  3.59  3.92  3.47  3.66  3.82 | agree  agree  disagree  disagree  agree  agree  agree  agree  agree  agree  agree  agree |

Apart from items 3 and 4, the remaining ten items in table 1 obtained mean ratings above 2.50 in the three columns. The respondents agree that ten items are some policies for ICT empowerment of teachers.

**Table 2: Means and standard deviations of ICT competencies that teachers need to acquire**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Items:** |  |  |  |  |  |
|  | X | X | X | Average |  |
| The teachers need to acquire ICT competencies  (abilities ) in: | Principals  (N) = 140 | Teachers  (N = 1398) | Educational technology Experts  (N – 12) | X | Decision |
| 1. Using ICT in classroom interactions. 2. Locating and scanning subject information from e-journals and reference materials. 3. Using ICT resources to improvise relevant instructional materials. 4. Adapting foreign lesson content/resources to local situations. 5. Identifying websites that have already mapped curriculum activities, learning goals, & assessment in many subjects. 6. Using ICT to individualise instruction and facilitate classroom management. 7. Creating classroom space for ICT use. 8. Using electronic simulations for practical lessons. 9. Using ICT for marking students’ work. 10. Using power-point presentations to capture students’ internet in lessons. 11. Using ICT for lesson planning. 12. Applying ICT with different instructional methods. 13. Identifying ICT relevant to specific lesson objectives. 14. Choosing software that allows for different learning styles and ability levels. 15. Using ICT within the limits of time available for instruction. | 3.24  3.73  3.17  4.00  3.46  3.25  2.26  3.37  3.21  3.00  3.36  3.77  3.64  3.44  4.00 | 3.29  3.64  3.12  3.62  3.69  3.08  2.15  3.29  3.17  3.73  3.53  3.89  4.00  3.52  3.71 | 3.23  3.91  3.43  3.51  3.32  3.13  3.02  3.42  3.56  3.77  3.81  3.75  3.95  3.18  3.64 | 3.25  3.76  3.24  3.71  3.49  3.15  2.48  3.36  3.31  3.50  3.57  3.80  3.86  3.38  3.78 | agree  agree  agree  agree  agree  agree  disagree  agree  agree  agree  agree  agree  agree  agree  agree |

In table 2, only item 19 had a mean score below 2.50 in the columns for principals and teachers but had a mean above 2.50 in the column for curriculum experts. This indicates that while principals and teachers did not agree that teachers need competencies in creating classroom space for ICT use, the curriculum experts agreed that the teachers need that competency. The rest of the items scored above 2.50 in the three columns. This indicates that the respondents agreed that teachers need to acquire competencies for teaching with ICT in the identified areas.

**Discussion of Findings**

The findings of the study have shown that the respondents are agreed on a number of ICT policies for secondary school teachers’ ICT empowerment. Analysis of the responses reveals that the policies consist of mandatory training of teaching staff, providing ICT helpdesk, making ICT competencies compulsory for selection and recruitment of new staff, making ICT use in education part of a regular quality assurance exercise, and making professional development of serving teachers in ICT competencies mandatory. Also important are policies on financial incentives to teachers for development in and instructional use of ICT. This finding agrees with earlier studies by Marandi & Luik (2003) and Rosenbalt & Inbal (2007) on teachers’ need to put in place policies for mandatory ICT use in teaching and training. The respondents’ opinions about the focus of ICT policies imply that mandatory professional development of teaching staff is a key element in teacher empowerment for teaching and training in ICT. If these policies are put in place, serving secondary school teachers would be compelled to avail themselves of ICT literacy programmes.

It was also found out that the respondents agreed that the teachers should be empowered to acquire several competencies for ICT application in teaching. The results are in line with a number of recent studies on ICT in secondary education (Olibie, 2007; Obikeze, 2007; Ikediugwu, 2008). To empower teachers for teaching and training in ICT, there is need to equip teachers with competencies and understanding on how ICT can be expressed in terms of learning goals, classroom interactions and assessment. Teachers also need to know how to adapt foreign content to suit their local needs. This might mean looking at the current learning goals and activities described in their school or department curriculum plans and identifying where some rigorous thinking – as opposed to relatively superficial activity – related to foreign concepts can take place. Teachers need to be taught how to access some websites that have already mapped curriculum activities containing learning goals, activities and assessment related to a rigorous international dimension in different subjects. Teachers should be trained beyond rudimentary computer applications to the actual use of ICT in teaching and assessment. This is appreciable given the backdrop of the “business as usual’ approach of teacher ICT training that focused on computer appreciation lectures, without pre-empting any real dramatic changes in the actual teaching learning process” (Olibie, 2007). These competencies might therefore be placed at the centre of all teachers training in ICT.

**Recommendations**

Based on the findings, the following recommendations are made:

1. Government and relevant agencies should formulate the identified policies for teacher empowerment in ICT.
2. There should be constant sponsored workshops and seminars on competencies for effective ICT use in teaching for all secondary school teachers in Anambra State.
3. ICT training for teachers should comprehensively cover the identified competencies for ICT application in teaching.
4. The Federal Ministry of Education should design and introduce free ICT Teaching Competence Kits (containing ICT training manuals, illustrations and basic tips for ICT assisted instruction) for teachers.

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