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An Exploratory Study of E-Readiness of Secondary
School Teachers in Nigeria

AN EXPLORATORY STUDY OF E-READINESS OF SECONDARY SCHOOL TEACHERS IN NIGERIA

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ABSTRACT

Information and communications Technology (ICT) has become a tool in today's knowledge-driven economy globalization and development in many nations. Various forms of ICTs are applied in several sectors including education to enhance productivity and skills development. This paper focuses on determining the e-readiness of secondary school teachers in Nigeria by exploring the level of diffusion, extent of availability of necessary ICT infrastructures in secondary schools, and the level of their usage by teachers. To achieve this, research questionnaires were used to collect data from a population of 574 teachers from 46 secondary schools in the southern part of Nigeria. The research revealed a lack of ICT tools in most of the secondary schools in the region, and a low-level computer literacy among teachers — an indication of a gap between the National Policy on Computer Education and its implementation. The paper concludes that provision of infrastructures without developing the manpower to use them would be a futile effort. It therefore recommends full implementation of the National Policy on Computer Education and that of the mission of the SchoolNet initiative by assurance of the provision of ICT tools in secondary schools, as well as the training of the teachers to use the tools to enhance the development of the teachers and the learners.

BACKGROUND OF THE STUDY

Current literature emphasizes the active role of information and communication technologies (ICTs) in globalization and development process (Herselman and Hay, 2003; Loh-Ludher, 2007; Houghton, 2009; Hafkin & Taggart 2001; Geldof & Unwin 2005). Information and Communications Technology (ICT) has become a potent force for social, economic, and political empowerment since it cuts across geographical and cultural barriers. Today, most developing countries use ICT as the bridge that connects people, and creates channels for personal and country development. It is embraced both as a way to avoid further economic and social marginalization (that relegated most developing countries to zones of silence in the past) as well as a tool for growth and diversification. These revolutionary changes brought about by ICT have in recent times greatly influenced several aspects of life, including the educational sector. ICT in education is used in the areas of policy formulation and execution, content creation and dissemination, evaluation, decision-making, planning, educational research, opportunities for information sharing and group collaboration (Herselman and Hay, 2003; Yusuf 2005). Trucano (2005) and Al-Ansari, (2006) discussed various ICTs used as research tools to empower, deepen and enrich knowledge to promote change and foster the development of 21st century skills which will improve teachers' confidence and skill level. In 2003, NEPAD proposed an e-school project in Africa that will equip primary and secondary schools with basic ICT tools and train teachers to help promote the implementation of ICT in schools (NEPAD dialogue, 2003). A country report on the state of ICT applications in Nigeria,   (Agyeman, 2007) and other studies (Yusuf 2005; Jegede and Owolabi, 2003) showed that the Nigeria nation has made giant strides in a positive direction to introduce ICT to all facets of the economy including education. In 1998, the National Policy on Computer Education was formulated and the document was revised in 2004 to emphasize the need for the integration of ICTs at all levels of Education (Yusuf, 2005). Today, computer studies have been introduced into the primary and junior secondary school curricula in Nigeria. In the authors' view, teaching computer science as a course to students does not enhance and promote e-learning which is becoming a global trend. A major objective of this paper therefore is to determine the e-readiness of secondary school teachers by exploring the level of diffusion, extent of availability of necessary ICT infrastructures and the level of usage of these ICTs by the teachers in Nigeria.

To achieve the stated objectives, research questionnaires were used to collect data from secondary school teachers. A secondary school teacher in the context of this paper is someone trained to prepare and disseminate information that pertain to the subject of the curriculum in which he/she is a specialist to secondary school students. The authors of this literature therefore, define E-Readiness as the ability of

secondary school teachers to use Information and Communication Technologies (ICT) to develop course contents, research decision-making, collaborate and communicate with teachers (not necessarily from the same geographical region), prepare lesson notes, disseminate/deliver lessons to students, communicate with students outside the school environment and evaluate students' performance.

RESEARCH QUESTIONS

The problems investigated by this research study include the determination of the following points.
  i) The availability (or otherwise) of ICT infrastructures/tools in secondary schools in Nigeria.
  ii) Usage of ICT tools in teaching-related activities in these schools.
  iii) Level of computer literacy of secondary school teachers.

Determination of these points helped the authors to conclude that most schools lack well-equipped computer laboratories while most of the teachers are not computer literate and consequently are not e-education ready.

MATERIALS AND METHOD

A Questionnaire was used as the major instrument for data collection in this study to elicit data on the extent of usage of computers and other ICT tools by secondary school teachers in teaching, content production, planning, decision making, research and communication. A total of 800 questionnaires were distributed (with the aid of research assistants) to teachers from 46 randomly selected secondary schools from five states in the Southern part of Nigeria. 574 copies were returned and used for the final analysis.

FINDINGS

The demographic information of the respondents is presented in Table 1.

Table 1: Respondent's Profile

Item	No of Respondents	Percentage (%)
Sex		
Male	433	75.44
Female	141	24.56
Total	**574**	**100.00**
Age		
20 – 30	178	31.01
31 – 40	249	43.38
40 – 50	97	16.90
Above 50	50	08.71
Total	**574**	**100.00**
Educational Qualification		
N.C.E./Equivalent	156	27.18
B.Sc./HND	311	54.18
Others	107	18.64
Total	**574**	**100.00**

From Table 1, it is discovered that the responses were male-dominant (75.44% males and 24.56% females). Also, majority of the respondents were within the age group 31 – 40 (43.38%). In terms of educational qualification, 27.18% had National certificate of Education (N.C.E.) or equivalent, 54.18% had a first degree or equivalent while others accounted for 18.64%.

Table 2: Computer/ICT tools Available in schools

Tool	Available	Percentage (%)
Equipped Computer Laboratory	11	23.91
Multimedia Projector	2	4.35
Internet Connectivity	4	8.70

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Phones	**46**	**100**
Fax	**0**	**0**
Digital video/audio	**0**	**0**

Table 2 shows that only eleven (11) out of the forty six (46) schools studied have computer laboratories. The most common ICT tool available in secondary schools is the telephone. Some ICTs such as fax and digital video/audio are completely absent in the schools studied. Only four schools (8.7%) have internet connectivity.

Table 3: Computer Literacy

Computer Literacy	No of Respondents	Percentage (%)
Yes	148	25.78
No	426	74.22
Total	**574**	**100.00**

Table 3 we revealed that a high percentage of the teachers (74.22%) cannot use computers. This shows there still exists a gap between the National policy on computer education and its implementation as reported in Jegede and Owolabi (2003). This low level of computer literacy may have accounted for the lack of utilization of computers in teaching and other educational activities as illustrated in Table 4.

Table 4: Use of Computers/ICT in Teaching and other educational Activities

Activity	No of Respondents	Percentage (%)
Planning/Preparation of Lesson Notes	0	0
Teaching	0	0
Assessment/Evaluation	17	2.96
Communication with students and colleagues	54	9.41
Research	05	0.87
Decision making	0	0

ICT is applied to several aspects of education to enhance teaching and learning. Without sound knowledge of how to use various forms of ICT, it will be difficult to apply it. Data in Table 4 show that only 17 (2.96%) of the teachers use ICT for assessment/evaluation, 54 (9.41%) for communication and 0.87% use it for research. None of the teachers use ICTs to prepare lesson notes and teaching. This shows that ICT is not applied to teaching-related activities by these teachers.

Table 5: Participation in any activity such as seminar, workshop or conference on the use of ICT in Education

Response	No of Respondents	Percentage (%)
Yes	19	3.31
No	555	96.69
Total	**574**	**100.00**

SchoolNet Nigeria (Mkusanyiko , 2004), a private initiative launched in September, 2001 with the support of the Ministries of Education, Telecommunications, and Science and Technology, and the Education Tax Fund, was created to address the use of ICTs in secondary education sector in Nigeria. The mission of the SchoolNet initiative is to create "learning communities of educators and learners who use Information and Communication Technologies (ICTs) to enhance education within and beyond Nigeria, and to contribute to the transformation of the education system in Nigeria into one which participates in and benefits from the knowledge society". To accomplish this mission, one of the objectives of the initiative is to support and facilitate the development of education content, particularly local content, for use by learners and educators and to create an awareness of the use of ICTs in education (through press, conferences, seminars, electronic media, and the internet), leading to grassroots demand and adoption of ICT at all levels of the education system. The findings in Table 5 show that schools in the Southern part of Nigeria have not benefited from any programs relating to the use of ICTs in education.

DISCUSSION

The findings from this study were compared with Jegede and Owolabi (2003) where the National policy on computer education was extensively discussed and the extent of implementation of the policy was analysed. The paper concluded that very little had been achieved in the policy implementation especially in the training and preparation of secondary school teachers and associated personnel on the use various forms of ICTs in curriculum development and implementation. The outcome of this study is similar especially with regard to secondary school teachers in the South-South Zone of Nigeria. The computer literacy level is low. Also most schools lack well equipped computer laboratories and 96.6% of the respondents have never attended any programmes related to how computers can be applied to their work. A major finding from this study is that the main challenge to ICT adoption in secondary schools is not that of infrastructure but lack of readiness of teachers to use the technology.

CONCLUSION AND RECOMMENDATIONS

Lack of exposure to computers and ICT is one of the major issues hindering the use of computers and other ICTs in secondary schools. Today, ICT has become a global language in all professions and a major tool to enhance teaching and learning. Providing infrastructures without developing the manpower to use the infrastructures will be a futile effort to the Nigerian Government. For full implementation of the National Policy on Computer Education and the achievement of the mission of the SchoolNet initiative, and consequently enhancing the e-readiness of secondary school teachers and the quality of education impacted on the students, the following are recommended.

i).   Provision of computer laboratories equipped with internet connectivity and other ICT tools in all secondary schools in Nigeria.

ii).   Compulsory ICT training for secondary school teachers.

These can be achieved by collaborating and encouraging partnerships that will enhance computer training, and provide Internet connectivity and ICT infrastructure to secondary schools. When students are exposed to e-learning concepts at the secondary school level, the demand for face-to-face learning programmes offered currently by most Nigerian Universities will be reduced and the substantial benefits provided by e-learning will be explored.

Implementation of these recommendations will mean implementation of the provisions of the National Policy on Computer Education.

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