

BARRIERS TO INFORMATION AND COMMUNICATION TECHNOLOGY UTILIZATION IN BASIC EDUCATION IN KANO, NIGERIA

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Abstract

Information and communication technologies (ICTs) in the twenty first century has taken the center stage in all human affairs, and Nigeria is already taking giant strides towards integrating ICTs in its education system; this is evident in the number of information technology policies, provision of facilities, capacity building efforts and infrastructural development that are in place. Despite government effort to ensure the inclusiveness of ICT at all levels of the educational system in the country, certain factors stand as impediments to both integration and utilization of ICTs for instructional purpose. This paper, using available secondary sources of information provides significant evidences of how teacher factors contribute to non-utilization of ICTs in basic education classrooms. The paper also highlights some strategies to surmount the barriers imposed by teachers in using ICTs to teach in basic education classrooms, through correct implementation of all ICT policies, constant training and retraining of teachers to develop competencies in the use of ICTs for pedagogical renewal. The paper recommended amongst others that, teacher training institutions in the country should redesign and reorganize teacher education programmes (pre-service and in-service) to reflect the present need in this technology-driven society towards the use of educational technologies and procedures in the classrooms.

Keywords: Education, Barriers, Basic education, Information and communication technologies, Teacher factors

Introduction

Education is regarded as a dependable tool which can be used to confront the challenges of our complex global society, therefore the quality and relevance of the kind of education provided to any people determines their preparedness to face the challenges of the 21st century (Olagunju, 2014). Throughout the world, the challenge for school system is that of providing an effective education for all children and young people which will prepare them for work and participation in all spheres of human society as well as for global competitiveness. Nigeria introduced the 9-year Basic Education Programme for the attainment of the millennium development goals (MDGs) and other national development strategies using education as a vehicle. Nigeria has an estimated population of about one hundred and fifty-two million people, of which 45 percent are children of school age i.e. 5-11 years old, these children require basic education to for lifelong learning. No doubt, information and communication technology has made impact in all aspects of life.

Many countries have experienced drastic changes in their environment especially in the education sector, through the use of information technology. In spite of the positive impact of ICT on human society and the role of education in facilitating this impact, most developing countries like Nigeria

are yet to effectively incorporate the use of ICT into the educational system. However, this is not to conclude that Nigeria has not made any significant effort to exploit information technologies for its development. As a matter of fact, Nigeria is collaborating with many countries of the world in ensuring that, ICT utilization has become an established culture in the society. This is evident in the various developmental strategies initiated by the various tiers of government in Nigeria, where ICTs are given the much desired priority. ICTs are integrated at all levels of the country's educational system. Several Information Technology policies and curricula have been developed and are in use at different levels of education in the country. The teacher education programme also received its own share of the ICT revolution in Nigeria. This is evident in the provisions of a new teacher education curriculum for production of Nigeria Certificate in Education (NCE) teachers.

The new NCE curriculum is tailored towards production of ICT literate teachers for effective content delivery in the 21st century classroom based on the changing needs of the global society. This is necessary because, how teachers do their teaching influence how learners learn, therefore, certain teacher-related factors normally exert significant influence on students learning. Sadly, these factors are found to impede the use of ICTs in Basic Education classrooms in Nigeria. This paper seeks to highlight teacher-related factors preventing effective and efficient use of ICT in Nigeria's basic education system and the steps to be taken to improve the usage of ICTs in Basic Education classrooms.

Universal Basic Education Programme in Nigeria

The Universal Basic Education (UBE) is an educational reform programme of the Federal Government of Nigeria which was introduced to facilitate the achievement of free, compulsory and universal education in nine years for all school age children irrespective of their socio-economic circumstance (Federal Government of Nigeria, FGN, 2006). It is important to note that, the philosophy behind Basic Education in Nigeria is to provide opportunity for every learner who has successfully completed the nine years of continuous Basic Education schooling, should have acquired sufficient level of literacy, numeracy, manipulative, communicative and life-long skills as well as ethical, moral and civic values needed for laying a solid foundation for life-long learning as a basis for scientific and reflective thinking.

The basic education curriculum is structured into three levels of operation namely; lower basic education curriculum (primary 1-3), middle basic education curriculum (primary 4-6) and upper basic education curriculum (JS1-3). Both the national policy on education and the national policy on information and communication technologies (ICT) in education have clearly stated the position of government on the place and role of ICTs in education, which is expected to guide and propel teachers to apply ICTs in the basic education classrooms. It is pertinent to note that, the current state of primary schools in Nigeria is not favourable for the attainment of the set objectives for the basic education. Although there are clear evidences of infrastructural improvement and increased access to at all levels of education in Nigeria with the introduction of universal basic education programme (UBE), much is still desired, because instructional resources including teaching manpower is still grossly inadequate with untrained personnel, non-availability of computers, computer laboratories and other ICT facilities like electricity and internet connectivity in most public primary schools in Nigeria.

The national policy on ICT in education in Nigeria document (FME, 2010) noted that, the present state of ICT in education in Nigeria is far from what it is expected to be, therefore, this call for the need to fully integrate ICT into education in the country. The present trend hampers the attainment of the policy provisions for the education system in Nigeria. Olagunju, (2014) Observed that, the 9-year Basic Education Curriculum is quite different from the old curriculum, because new subjects such as computer studies/ICT, civic education and French have been introduced to close the gaps in the old curriculum. Core subjects such as Basic science and Basic technology have been redefined to

fit into the new paradigm. The arrangement of the new curriculum content is thematic and spiral starting from primary to secondary school level.

ICTs in the Basic Education System in Nigeria

Technology is a critical component of education in the 21st century because; the ability to use computers effectively has become an essential part of everyone's education and is a determinant of the growth and progress of any society, (Adomi & Akpangban, 2010). Nigeria having realized the crucial role of ICTs to general development; in this regard, came up with relevant policies such as the National Information Technology Policy, National Information Technology Framework, and National policy on Education, National Economic Empowerment and Development Strategy as well as Subsidy Re-investment and Empowerment Programme etc. The pervasion of ICTs in all segments of the global society also played a significant influence on education and particularly in teaching and learning environments. Teachers' role, pedagogy, assessment and administration of education are changing. New teaching-learning paradigms are replacing old ones with changes in view of the learning processes. New classroom concepts have emerged, thereby giving new meaning to education, teaching and learning as concepts. It is no exaggeration to mention that, the role or responsibilities of both teachers and learners are changing in the classroom.

Considering the above major changes taking place in the classroom as a result of technology, the basic education Teacher in Nigeria have no option than to follow the wind of change which will bring about the desired, progress from education. In this regard, high expectations are placed on teachers due to new roles, responsibilities and challenges in the classroom. In Nigeria, The Basic Education Curriculum provides for computer studies/ICT as compulsory subject to be offered by all pupils and students in all the three levels of basic education in Nigeria. This indicate governments' commitment to ICT integration in education. This also show that, teachers at this level are expected to possess both knowledge and skills to use computers and other ICT tools for instructional delivery in the classroom. Hooker, Mwiyeria, and Verma (2011) reported that, there is low availability of ICT infrastructure and manpower requirement in the basic education system in Nigeria, but despite the challenge, government still made commitment in the sector by introducing ICT into the basic education curriculum.

Teacher Competency in the Use of Information and Communication Technologies

The role of the teacher at the basic level of learning is very critical because, it is at the early stage of basic education that attitudes and self-image of the learners are formed. Therefore, the competency of teachers at this level cannot be ignored or compromised. ICTs are now indispensable tools for content and curriculum delivery in the classroom. Similarly, while teaching and learning conditions are important, teachers are central to the question of education quality and relevance. However, the way teachers are prepared and trained for their profession is a critical indicator of the kind of educational quality and its relevance to the society. At this juncture, we may pause to ask; Are the Basic Education Teachers adequately prepared to effectively implement the Basic Education Curriculum in Nigeria?

The above question is quite relevant and timely in view of the current global changes and challenges which have given birth to paradigm shift in the field of education and particularly in the classroom where teachers operate. There are several study reports on barriers to technology use (Marshall, 2000; Elgort, Marshall & Mitchell, 2003), for example, Marshall (2000) identified time factor and a lack of knowledge and skills to use technology as major obstacles to technology implementation in schools.

As earlier stated the quality of learners and learning is measured by the quality of teachers and teaching. This imply that, teachers' role is critically important, because teacher plays a crucial role of

guiding learners and facilitating learning, if this is what is expected of a teacher, how then do teachers become impediments to use of ICTs in the classroom? This is revealed from close interactions with fifty (50) teachers, engaged in teaching at the three levels of basic education in Kano state, Northwest region of Nigeria. The close interactions with the teachers was possible due to six-month teacher cluster meetings and mentoring sessions held between November 2021 to April, 2022. The result of the interactions clearly show that, majority of the teachers do not use ICTs for classroom instruction, for assessment or record keeping in school. Similarly, Reports from the Kano state Universal Basic Education Board (SUBEB) which is the Agency responsible for the implementation of Basic Education Policies also indicate low rate of teacher engagement with ICTs for instructional purpose in primary and secondary schools in the state.

The above scenario is attributed to several factors ranging from curriculum, administration, and technical issues, Teacher factors, Infrastructure and system failure. The argument of this paper is, since teacher's role is critical to curriculum implementation, then, it is imperative to look at how teacher characteristics affect the use of modern ICT tools in the classroom rather than focusing on other factors that have no direct influence on learners and learning.

Teachers as Barrier to ICT Use in the Classroom

Specific teacher characteristics have significant influence on learners and learning. These characteristics can be regarded as factors that facilitate or ruin instruction in the classroom. Some of these teacher-related factors are hereby highlighted to substantiate the argument of this paper.

Teacher's Attitude: Majority of teachers implementing the Basic Education Curriculum had their initial training with the old teacher education curriculum which does not provide for ICT knowledge and skills to teachers. This category of teachers sees ICTs in education as alien. They do not appreciate the need for technology application in the classroom, since they lack skills to operate the tools for instructional purpose. In view of this, they develop apprehensive attitude to use of technology in the classroom. They simply view it as an attempt to test their abilities and not as an aid for teaching. These poor attitudes of teachers impede the use of ICTs in the classroom.

Teacher's initial training: In Nigeria, entrants into the teaching profession normally undergo an initial preparation in colleges of education, institutes and faculties of education in universities to obtain specialized knowledge, skills and methodology required for teaching. Unfortunately, in all these channels for initial training of teachers, the use of computers/ICTs is not given any precedence; hence teachers are incapacitated to use ICTs at workplace even after graduating from colleges and universities, because ICT devices were never used in teaching them while on training.

Teacher technophobia: it was found that, most teachers have limited interaction with computers and other forms of information and communication technologies right from the training stage. This is confirmed by Idris, (2013) who reported that, majority of college and university students in Nigeria are not ICT literate and do not even have e-mails. Consequent to the above, such students after graduation develop phobia (fear) for technology tools at work place. This is the situation with most teachers at the Basic Education level in Nigeria. The fear for failure in setting up Technology devices and the eminent embarrassments it may cause them makes teachers to shy away from the use of ICTs in the classroom, thereby limiting the drive for ICT integration and utilization in education.

Teacher ICT competence: Teachers who implement the Basic Education curriculum in Nigeria are highly deficient in general ICT competencies, thereby making them incapable to use them for instructional processes. A Survey carried out on ICT competency standard for Teachers framework in Nigeria indicate low availability of infrastructure in the basic education system and poor teacher perception on use of ICTs in education. Similarly, a study conducted by Adomi and Kpangban, (2010) on rate of ICT adoption and application in Nigerian secondary schools, identified several factors as caus-

es of low level of ICT application in schools. The authors reported the following as some of the significant causes: inadequate ICT manpower in the school, lack of/ limited ICT skill among teachers, lack of/poor perception of teachers and administrator on the role of ICT, poor ICT policy/project implementation strategy.

Strategies to Surmount Barriers to ICT Use in the Classroom

Information and communication technologies have come to stay, and will continue to influence every affair of the human society. It is obvious that the present teaching manpower implementing the Basic Education Curriculum in Nigeria is weak and incapable of meeting the desired policy goals. It is therefore necessary to employ strategies that will adequately address these problems. This paper seeks to present some effective strategies to surmount barriers to use of ICTs in the classroom as follows:

1. Special capacity building workshops/seminars that provide hands-on and minds-on opportunities for all participants should be organized for In-service teachers in primary and secondary schools to build capacity at the Basic education level. The central focus of the workshop should be practical application of ICTs in the classroom. In the same vein, talks, shows and discussions should be incorporated in the seminars to change the attitudes and mindset of in-service teachers about ICTs in teaching.
2. Policy and curriculum provisions backed by infrastructural supplies for use of technologies to train teachers should be a matter of priority in teacher training colleges, institutes and faculties of education in the universities. This implies that, lecturers should be mandated to employ the use of technology devices for instructional process in training teachers.
3. The application of Educational Technologies in microteaching and teaching practice at the initial teacher preparation stage should be an essential requirement for pre-service teachers. Teacher trainees should be given ample opportunities to practice teaching with ICTs in form of Microteaching several times before graduating to enter into the teaching profession.
4. If teachers are to imbibe the culture of technology use in their life endeavours, then, they need to have easy access to ICT devices, therefore deliberate and dependable efforts must be made to provide access for teachers to use ICTs every day in and out of workplace. Laptop computers mobile, devices and other forms of E-learning tools should be made available to teachers at the Basic Education levels in Nigeria.

Conclusion

Teachers are critical to every education system and by extension to national development. As a matter of fact, the quality and relevance of the kind of education provided to any people determines how prepared they are to face the challenges of this current century, because no nation can rise above the quality of its education; Hence, the competences of our teachers have direct bearing on the learners and consequently the whole society. Teaching and learning in most schools in Nigeria is still dependent on traditional methods, which are incapable of meeting the needs of the present day learner. Old methods of teaching are still in use for classroom instructional processes in primary and secondary schools (Basic education level) in Nigeria. The basic education curriculum is being implemented by teachers who do not possess the prerequisite teaching qualifications or even the basic ICT skills to operate in the classroom. Therefore, there is the need to re-organize our teacher education programme to be tailored towards production of ICT literate teachers that will work with new information and communication technology tools/devices to surmount current classroom challenges in education for effective teaching in the basic education level.

Recommendation

In view of the important role of teachers in the classroom and the significant influence they bring to bear on the life of learners, the paper hereby presents the following recommendations:

1. Government should introduce subsidy to ICT in education as it applies to petroleum products in Nigeria so as to encourage and empower both teachers and students to use ICTs for educational purposes.
2. Government should improve funding of ICT in education projects. However, to avoid overdependence on government, Public-Private partnership should be encouraged for effective provision of ICT infrastructure in schools.
3. Ample time should be allotted on the school time table to allow for the practical application of ICTs in the classroom.
4. The national policy on information and communication technology in education thrust should be well implemented beyond mere policy statement.
5. Basic education teachers should make personal effort to acquaint themselves with modern information and communication technologies as tools for instruction.

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