

THE ROLE OF INFORMATION AND COMMUNICATION TECHNOLOGY ON CURRICULUM IMPLEMENTATION IN PRIMARY SCHOOL

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Abstract

The paper is essentially a focus on the role of information and communication Technology (ICT) on curriculum implementation in primary schools. There is no gain saying that primary education occupies the nerve centre in the formal education sector. This very fact explains why nations all over the world have continued to emphasis on this aspect of education. The national policy on education is very explicit on the fundamental goals of primary education. The relevance of information and communication technology (ICT) in the educational system is an innovation that should be welcomed especially its application in the implementation of primary school curriculum which will go a long way in achieving the objectives of primary education as enshrined in the national policy of education. Curriculum which is the mechanism through which the educational system inculcates into the learner, the knowledge, skills and attitudes which society has prescribed can only be realized through proper implementation using ICT as a lunch pad. The paper also highlights the challenges facing the application of ICT in primary schools. Suggestions were also proffered on how these challenges can be addressed.

The introduction of Information and Communication Technology in the past few decades has made it possible for the world to make a major breakthrough in the teaching and learning processes even though modern

technology has become a little bit more complex in recent times.

In the 1950s, Frederick Skinner, a renowned Professor of Psychology in one of his research visits to schools, found out that teachers used the same method for all students not minding their needs, motivation, ability and other traits of individual differences. In essence, he found out that the pace of the class, which was dictated by the exceptionally good students in the class, was to the disadvantage of the low ability students. He then wondered how the low ability students would cope (Suleiman & Abubakar, 2002).

After some years of research, Skinner came up with his teaching machine to the American audience. He was greatly surprised at the response of the teachers who felt that such innovation would lead to mass retrenchment, that they could lose their jobs and positions in the educational sector. Even though teachers did not find the teaching machine interesting; yet they had no choice when the computer system appeared on the educational scene some few years later.

The admiration of computers did not leave out the military, medical and business sectors in Europe and America. In order to respond to the needs of the society; computer was integrated into schools in the 1960s (Okebukola as cited in Ibitoye & Adeneye, 2002). Since then the computer has become an indispensable tool for both educational and national development worldwide.

The thrust of this paper therefore is to examine how ICT can assist teachers in implementation of instructional programmes in our primary schools. The paper therefore provides a platform for the discussion such as:

1. What is primary education and its curriculum
2. What is curriculum implementation?
3. What is ICT and how can teachers apply it in delivering instructional programmes?
4. What are the problems associated with implementation of instructional programmes using ICT.
5. How can these problems be minimized or eradicated

Primary Education

Primary education, as the name implies, is prime and so must be given the prime position. A sound primary education in the thinking of Maduewesi (2005) is a precondition not only for sound secondary and tertiary education but also for continuing education. Children need a sound primary education much the same way a house needs real solid foundation in order to stand. Primary education is the gateway to whatever individuals can achieve through education. Federal Republic of Nigeria (2004) shares the same view by describing Primary Education as the success or failure of the whole system. We need to know that efforts made at improving the quality of education at the secondary level, without first laying durable foundation at the primary level, are very likely to fail. It is like the first leg of a relay race in Athletics of which when faulty, would be difficult to correct. The quality of primary education depends on the adequacy and relevance of the curriculum. Wheeler (2000) viewed curriculum as the mechanism through which the educational system inculcates into the learner, the knowledge, skills and attitudes which society has prescribed. Salami (2008) in his own way defined curriculum as a total

experience with which the school deal with educating young people. It is a total environment in which education takes place including the child, the teacher, subject matter content and the physical and psychological environment. A good school curriculum, Salami emphasized, should, be continuous, dynamic, innovative to reflect the value of its immediate environment.

Curriculum experts have observed with dismay that primary school curriculum is not contributing significantly to the attainment of quality education. This may be due to lack of periodic evaluation of curriculum to its adequacy and poor implementation (Nnadi, 2012).

What then is Curriculum Implementation?

Curriculum implementation is the translation of what has been documented theoretically into practical terms. Mkpa (1987) defined curriculum implementation as the task of translating the curriculum document into the operating curriculum by the combined efforts of the students, teachers and others concerned. Babalolo (2004) viewed curriculum implementation to connote the multifarious activities of translating a complex curriculum conception in the form of design or plan into new patterns of practical action, usable and realizable in a teaching learning milieu. Okebukola (2004) described curriculum implementation as the translation of the objectives of the curriculum from paper to practice. He is, of the view that curriculum implementation means putting the curriculum into work for the achievement of the goals for which the curriculum was designed. This means that curriculum implementation has to do with actual putting what have been planned into action. Ivowi (2004) defined curriculum implementation in a nutshell as the translation of theory into practice or proposal into action.

Onyeachu (2008) defined curriculum implementation as the process of putting all that have been planned as curriculum document into

practice in the classroom through the combined effort of the teachers, learners, school administrators, parents as well as interaction with physical facilities, instructional materials, psychological and social environment. Curriculum implementation therefore involves the real and practical application of theory into practice in such a way that the overt outcome is noticed through the performance of learners in the classroom.

What is ICT

ICT is a short form of Information and Communication Technology (ICT) which processes, stores and/or transfer information in form of text, numbers, pictures, sounds, video and multimedia. The system uses computers, telecommunication networks and other electronic devices. The basis of ICT is simply designed to help man improve on the way he deals with information. ICT systems are very flexible and can be made to perform a variety of different tasks. ICT networks (eg. Internet) allows in the distribution and sharing of information at a faster rate irrespective of the distance. Thus, it is a very important means of imparting knowledge to others no matter where they are situated. (Okoro, 2009).

The implementation of ICT policy in Nigeria dates back to April 2001 following the establishment of the National Information Technology Development Agency (NITDA).

NITDA was empowered to enter into strategic alliance and joint venture to realize the country's vision of making Nigeria an IT country in Africa and a major player in the information society by the year 2005.

The entire world has become a global village through information and communication technology. The new wave of office technology and in information is a dynamic change cutting across every country; a change that is being experienced even more in developing countries.

Teachers Responsibilities in Classroom Practices

Certainly the most important single responsibility of the teacher is to instruct or guide the pupils learn the prescribed academic subjects of the school. In this regard it is expected that the teacher.

- i. Diligently and faithfully teaches the pupils in the educational programs assigned by the head teacher.
- ii. Plans and organizes the learning activities of the class with due regard for individual differences and needs of the pupils.
- iii. Cooperates with colleagues in programme development and teaching activities
- iv. Present to the head teacher or immediate supervisor written instructional (lesson) plans.
- v. Conducts her teaching classes according to a prescribed timetable of the school kept in a conspicuous place usually on a wall in the classroom.
- vi. Uses textbooks and other teaching materials as may be approved by the local government education authority or by the Ministry of Education.

In carrying out these responsibilities the teacher is expected to be committed to improving pupils' learning and ground teaching in the belief that all pupils have the capacity to learn and therefore should be treated compassionately, justly and equitably. There is no doubt that the teacher must be adequately prepared academically and professionally for dispensing the academic instruction responsibility and should be pre-disposed to self-improvement to keep pace with current issues in the educational system.

The teacher must base the content of what is taught on clearly defined objectives and learning outcomes (as may be approved), incorporating sound knowledge/understanding of

subject matter and proper interpretation of the knowledge as well as any changes therein as they may occur. Teacher language of communication must be impeccable without any confusion as to tense and number and should be clear, precise and effective while at the same time assisting pupils to improve their language skills in all learning situations.

How can ICT Guide Teachers in this Implementation Process?

Instructional materials are possible channels through which information are conveyed from the sender to the receiver. There are broad range of resources, which can be used to facilitate effective and efficient communication (Abimbade, 1997). Fadamiro (2000) perceived instructional materials as “the materials, equipments and techniques that can be used to communicate with listeners as well as create opportunity for independent learning.” He classified instructional materials as audio, visual and audio-visual. Audio-visual materials are devices that have both audio and visual appeal. They require the use of the eyes and ears (sight and hearing). The Videotape recorder is an audio visual material useful for programme instruction on topics that are abstract and difficult to explain verbally.

Video and television could be valuable tools for the teaching and learning of school subjects. Callahan and Clerk (1977) who recommended the use of television and moving pictures in classroom teaching emphasized that students tend to enjoy viewing and they understand messages from video and television much faster. Gbodi (1998) reiterated that knowledge enters the human brain mainly through two major senses of sight and hearing. She further stressed that sight covers between 75 – 90% and hearing 10-15%. It has also been confirmed that the effectiveness through sight and hearing is that we can remember 30% of what we hear, and 50% of what we hear and see

simultaneously. Nneji (2000) in her finding detected that video and television have the potentials of enhancing quality learning in school subjects. According to her, they can be used to arouse interest, modify attitude, clarify concepts, stimulate thinking, summarize contents, demonstrate and concretize knowledge that could otherwise only be talked about in abstract terms.

A growing number of teachers now use computer graphics, video disc, CD-ROMs and other digital media to convey information in a more dynamic form to students. Again, teachers use computers and multimedia technology to create in-class presentations using power points. To get pupils more involved in the learning process, many teachers use hypermedia and interactive multimedia software that put students in control of the class as against teacher controlled media presentation which are considered passive. It is emphasized that the use of computers, the internet and related technologies, given adequate teacher training and support, can indeed facilitate the transformation of the learning environment into a learner centred one. Learning resource centre often contain learning materials published on CD-ROM and most universities are connected to the internet. These technologies have the potentials to develop pupils’ consciousness and thus increase pupils access and participation. Information technology provides access to materials and enable pupils express their thoughts in designs, words and activities despite their challenges.

ICT can be of immense help to a dynamic teacher because it can enhance the dual capacity of both learning and teaching, quite easily and cheaply. Today almost all branches of knowledge are stored in the so-called ‘idiot box’ and anybody with an internet access and some basic operational skills can have access to that knowledge with a single clique and free of cost. So if some ancillary arrangements and soft wares

are available, e.g. Power Point Programme, multimedia, video system, etc, then delivery of knowledge by the teacher in the classroom will become more interesting and more effective than the manual method. Thus ICT has revolutionized the scope of both learning and teaching. (Ibrahim, 2009).

ICT – and other aids such as audio and video materials – can speed up the language learning process by offering additional opportunities for practices outside the classroom. (Awodi, 2008).

Other uses of ICT in teaching includes the following:

1. Distance education and e-learning is made possible.
2. Knowledge of ICT can help in material creation in form of text books, journals, conferences and seminar papers, hand outs, etc.
3. Teaching can be more entertaining and interesting.
4. Activities can be quickly prepared.
5. It has advantage in delivering repetition and memorization drills
6. Sound system of a language can be easily taught using pictures, charts, etc.

Both teachers and students can use ICT to download materials and make them available to others. Teachers can also use this information to set drills and tests; and to set class research projects. World wide web (www) can be described as a laboratory of resources available to computer users to view a wide variety of information, including magazine and archives. According to Ndukwe (2006) the internet is the largest library, bookstore, auction house, and art gallery in the world. No human can possibly digest it all. The internet is of immense value as world library which provides access to information on all subjects which conventional libraries generally do not have. The internet provides not simply published resources but also

cyber spaces and other fora for discussions, new learning networks that help connect students, teachers and the others for a widening variety of purposes.

The internet enable students and teachers to connect to the wide world web. Facilitate group discussion among students from the different schools. Even in distance learning both teachers and students take courses not locally available.

According to Idih (2001) with access to e-mail in their classroom, teachers have the opportunity to communicate with colleagues at schools, educators in other schools, parents, administrators, etc. The ease and immediacy of e-mail can have an enormous impact on the sharing of ideas, the making of requests and the completion of other daily communication both educational and managerial. Meeting can be organized through e-mail, mailing out the plans to several people at once. Consensus or discussions between groups of teachers can be without their sitting down together. The implication here is that when teachers are better informed through global awareness provided by exposure to internet, they will be in a better position to implement the curriculum better. Through the use of power point teachers can teach the pupils number recognition, counting and simple addition and subtraction of numbers. The pupils can be called out one after the other to identify each number on the power points. The use of ICT will make teaching more interesting and enthusiastic unlike the lecture method which is characterized by verbalism where the teacher dominates the scene as the authority in the field and learners reduced to passive recipient. There is much room for challenging learners' ingenuity and development of cognitive skill through experiments which ICT promotes.

It can assist the classroom teachers in keying in the results of his pupils for easy processing and retrieval by that way it becomes easier and faster to conduct the continuous

assessment of the pupils. All the information required of him about his class can be stored in the system. Students can know their results without the stress of going to their school by simply downloading the information on the website.

During instruction administration, the teacher can record the responses of his pupils at the end of which he plays back such recorded responses to determine if they are in line with the objectives of the lesson by that way the ICT can play a tremendous role in evaluation of instructional programme. It can also be used in assessing the students on teaching practice in the sense that while they are teaching, they can be videoed and a play back will show them how they performed.

Constraints to Effective Use of ICT on Curriculum Implementation

Despite all the gains accruing from ICT based education and the various efforts being made so far, the integration of ICT into Nigerian educational sector is yet to fulfill its demand. This is as a result of many challenges facing the use of ICT in our school system. These include:

1. **Poor funding:** Government budgets do not permit meaningful provision for ICT based education. Due to poor – funding by the government, the ICT education initiatives is grossly hindered bearing in mind that the ICT services are capital intensive.
2. **High cost of ICT devices to the users:** The cost to the consumers is quite expensive. Due to poor background of many pupils and teachers and the consequent cost of the devices such as internet browsing and such like, many resort to browse only when it is absolutely necessary so as to reduce cost. Even to buy the devices is not ease to come by.

3. **The absence of steady and adequate power supply:** One of the things that have crippled our economy is lack of steady power supply in Nigeria. In most communities there is no electric supply at all. This is very big problem in the operation of ICT services in our schools. Though the government is trying to boost the power supply by increasing the quantity of megawatts produced daily much is required to be done and very fast too. The alternative power supply which is the solar energy and stand – by generator are not easily within reach. The cost of running them is very high that an average teacher cannot afford.
4. **Children from families with limited income have no access to ICT tools at home:** For these pupils, the school ICT is their only experience. However, even if they have easy access to networks, schools still face the challenge of preparing teachers to use them effectively because most of these teachers are not computer compliance.

Recommendation

1. Government needs to take the issues of using ICT in education more seriously. This calls for proper funding of the project and the making of ICT project a national emergency.
2. The power sector reforms are to be seriously pursued. All the bureaucratic red tapism that is hindering the realization of the anticipated megawatts as stated by the president is to be addressed.
3. The importation of ICT equipments are to be liberalized and private ICT providers encouraged. This will make ICT equipments to be available and accessible to users. ICT laboratory are to

be established in all the government schools in the federation irrespective of location with giant generating plants to power the systems in case of power outage.

4. Teachers are to be trained and retrained by experts of ICT. This should be a continuous bases to ensure that they are abreast with all technicalities associated with ICT application.

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