

INFORMATION AND COMMUNICATION TECHNOLOGY AS A MEANS OF ACHIEVING EFFECTIVE TEACHER EDUCATION IN NIGERIA

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Abstract

This paper previews the necessitating steps of ICT in the Nigeria teachers professional development and its relevance in building a stronger and effective economic, social, cultural and political activities and produce knowledge personnel resource in line with the goals and objective of vision 2020. ICT development is the greatest investment that a nation can make for the development of its economic, sociological and human resources in order to conform with the societal challenges in the 21st century. The role of ICT in enhancing functional literacy education to the pre –service and in-service members of the educational programmes is also observed. The need to embrace ICT as an integral and invisible part of the daily personnel productivity and professional practice in enhancing teacher efficiency in view of the nation’s vision 2020 agenda.

Introduction

All government aims to provide the most comprehensive education possible for their citizen within the constraints of available finance because of the pivotal position of ICT in modern society, and its introduction into secondary schools should be high on any political agenda. This paper gives a practical and realistic approach to curriculum and teacher professional development on ICT that can be implemented quickly and effectively. The programme of teacher professional development relates closely to the ICT curriculum and particularly to the stages of development that the schools have reached with respect to Information and Communication technology (ICT). It was against this, that UNESCO aims to ensure that all countries, both developed and developing have access to the best educational facilities necessary to prepare young people to play full roles in modern society and contribute to a knowledge nation as result of the fundamental importance of ICT in the task of schools today.

The information revolution and the extraordinary increase in the spread of knowledge have given birth to a new era of knowledge and information with beneficial effects on the economic, social, cultural and political activities of all regions in the world.

Government worldwide have recognized the need to introduce ICT in teachers education because of the roles it could play in socio-economic development, this has led countries in the development world to put in place plans designed to transform their economics into an information and knowledge economy.

The most significant aspects of ICT teachers education that should concern the developing countries likes Nigeria is the fact that, it has led to unprecedented inequalities in the distribution of benefits between developed countries and the less developed.

Information and Communication Technology (ICT) has become within a short time, one of the basic building blocks of modern society as the basic skills of its concern are parts of the core of education. This paper deals with ICT in schools and with the changing competences required of both students and teachers, if they are to function effectively in Nigerian society as necessitated in the accomplishment of vision 2020.

Therefore, Nigeria must benefit from technological development and to do so, it requires a cadre of professional teachers both from pre-service and in-service to be educated with sound ICT backgrounds to specific computer platforms and software environment.

A View on Information and Communication Technology (ICT)

Information and Communication Technology (ICT), is basically an electronic based system on information transmission, reception processing and retrieval, which has drastically change different spheres of life cutting across human environment, social, political, economic and cultural phenomena.

Its revolution is the central driving force for globalization and the dynamic change in all aspects of human existence, its the key by-product of the present globalization period of (ICT) revolution. The global, information and communication has been called “the world’s largest machine” and its very complex and difficult to visualize and understand in its different hardware and software subsystems.

The interest holds, the greatest promise humanity has known for long distance learning and universal access to quality education, which offers the best change, but yet, for developing countries to take their rightful place in the global economic. Presently, most African countries are hit by poverty and economic crisis, the use and production of ICT plays an important role in the ability of nations to participate in global economic activities. Apart from facilitating the acquisition and absorption of knowledge, ICT could offer developing countries unprecedented opportunities to change economic system, improve policy formulation and execution and widen the range of opportunities for business. It could also support the process of learning, knowledge codification, teleworking and science system.

The most importance of the ICT challenge, is the need to plan, design and implement a National Information Infrastructure (NII) as the engine of economic growth and development.

Some Problems of ICT in Nigeria teacher Education

The personnel and students that characterize the in-service and per-service training of professional development in the teacher education programmes in Nigeria have limited or lack opportunities to apply ICT in all their teaching and learning schedules due to lack of access to ICT facilities and resources and hence, is not fully integrated into all lesson for all student to benefit in the dream of vision 2020.

Again, bad access roads and lack of power hamper ICT projects in rural area, problems of crime, adjustment and infrastructure also exists. Project of marginalized rural areas face most significant hurdles, since people there are at the bottom of the ICT pyramid, as the introduction of ICT in these areas is also costly; among also exist; lack of health services; diseases like HIV, TB, malaria are also common, Lack of proper support from educational authorities, curriculum planners and the government level of corruption also hampers the implementation of the ICT projects in rural areas.

Nigeria and ICT, the Way Forward

At the beginning of the 1990s, the leading economies of the world began to realize the importance of information and knowledge as valuable resource, both nationally and within organization. A national information infrastructure was formulated to provide foundation for an information economy in order to assist African countries to face the challenges of the information society and thus, avoid their marginalization and the effects of “digital slavery” brought about by the

implementation of the African information society initiative (ECA, 1996). These efforts led to the development of National Information and Communication Infrastructure (NICI), whose policies, plans and strategies could be used to enhance the role of information and communication technologies in facilitating the socio-economic development process. Also the various governments in African countries should declare access to ICT services as a fundamental human right of everybody and should establish a time table and guarantee-enabling environment for attracting the right level of investment. The digital revolution will offer Nigeria and other African countries the unique opportunity of actively participating in the world latest development revolution as the biggest beneficiaries have always been countries that are quick to identify the strategic relevance of information technology (IT) in the rapid transformation of national economic development. Nigeria and other African countries need local development IT brain power for subsequent export to bridge the IT skills gap in North American and Europe, also there is the need for local manufacture of hardware components as well as local development of software. These will help is to take technology to a step further by encouraging local production of some of the components used for system building such computers, mother board, modern, monitors, casing/power supplies, keyboards, mouse and add-in cards (Mirilla, 2000). ICT venture is highly of national development like education, health care delivery, public security, defence, public administration, etc, it is therefore important for government to guide the growth of ICT and its development through relevance policy while at the same time, making effective use of the ICT in the performance of its legitimate functions.

The Role of ICT to Teacher Education in Nigeria

All government aim, is to provide the most comprehensive education possible for its citizens, within the constraints of available finance because of the pivotal of ICT in modern societies, hence, its introduction into secondary schools should be high on any political agenda.

This paper gives a practical and realistic approach to curriculum and teacher development that can be implemented quickly and effectively, according to available resource. The programme of teacher professional development relates closely to the ICT curriculum and particularly to the stage of development that schools have reached with respect to information and communication technology. ICT as earlier mentioned permeates the business environment, it underpins the success of modern corporations and it provides government with an efficiency infrastructure. At the same time, ICT adds value to the process of learning and the organization and management of learning institutions.

The role of ICT when infused to teacher education in Nigeria, would be felt in all aspects of the teacher's professional life and educational programmes, as it will improve teaching and learning. Teachers will use ICT to manage their own learning problems and to assist all students assess their own learning in completing specific personal projects. It also affords teachers on distance learning programmes to access a large lot of information from their colleagues in other regions of the world as well share experiences to solve problems.

ICT has become a stimulus for exciting new teaching opportunities as it is being used to infuse subject knowledge and skills from across the curriculum to achieve individual learning objectives for students and teachers. There are general competence and abilities common to all approaches to infusing ICT in learning and the management of learning. The focus of professional development will be on developing the confidence and competence of teachers, building upon their previous education and professional development in applying ICT to teaching. The professional development in this stage will encourage teachers to collaborate in developing their subject curriculum and identifying innovative teaching methodologies. The infusion of ICT across the

curriculum to enhance learning and the management of learning, leads teachers to understand how to transform their teaching practices as well as the learning of their student. Teachers competences therefore should include; the understanding of why, when and how ICT tools will contribute to learning objective and choosing from a wide range of ICT tolls in order to select the appropriate ones to stimulating student's learning as such include;

- Choosing and recommending ICT tools and teaching methods appropriate to students' learning objectives.
- Planning a whole learning programme that allows a range of ICT tools and teaching methods to be used when required.
- choosing tools and teaching methods that allows the teacher and students to manage their own learning.
- managing whole school and classroom-based environments to achieve learning objectives.
- managing difficulties that can arise when using ICT to minimize impact on –planned lesson objectives.
- Infusing ICT based and non-ICT based media, such as books and videos into learning programmes.
- Participating in, and contributing to, group discussions on the use of ICT.

ICT and Professional Development in Teacher Education

Teachers need to be adequately prepared to implement an ICT curriculum as this calls for careful preparation, management, resourcing and funding. In the case of an ICT curriculum, more concerns have to be considered. Educational research studies, show that programmes of professional development are most effective if directed to the stage of ICT development reached by schools. The implications of these research findings are that teachers development is best conceived as an ongoing process, with many professional development activities conducted in schools, as the impact on the implementation of ICT curriculum will affect how educational system cope with changes.

Facing the Challenges of Changes

Rapid development in ICT are difficult to manage for ministries of education, educational managers and schools. A situation of constant change is also confronting to teaching staff and publishers. The ICT curriculum has been designed to help cope with these development and situations of change. It helps ministries of education to develop a systematic and controlled secondary education ICT policy. It also helps schools to develop ICT systematically and effectively in their programmes.

Availability of Resource

In any educational system, the level of available resources place a restriction on the degree to which any new subject can be introduced in the school curriculum, especially where only the most basic facilities have been provided, but ICT is of such importance to the future industrial and commercial health of a country that investment in the equipment, teachers education and support services necessary for the effective delivery of an ICT-based curriculum, should rank high in any government priorities. Any curriculum proposed should take account of these resources issues and specify minimum requirement for effective delivery in different circumstances.

Enhancing Functional Literacy Education Through the Implementation of ICT

Enhancing functional literacy education through the implementation of ICT in teachers education programmes in line with the laudable vision 2020 dreams would gain an increase boost if given sincere appraisal and enforcement.

To achieve advancement in technology and the way technology is incorporated into a system requires a dynamic process. Each school must work within the context of its own system to fit choice to what best suits its unique situation and culture. Even within a school, various units or courses may have different approaches which are hierarchical such as the emerging, Infusing, transforming approaches. The infusing approach is linked with schools that now have a range of computer-based technologies in laboratories, classroom and administrative areas. Teachers should explore new ways in which ICT changes can affect positively, there personal productivity and professional practice. The learners have more choice with regards to learning style and pathways. They take more responsibilities for their own learning and assessment. ICT is taught to selected students as a subject area at the professional level. To advance to the next phase, schools chose an ICT curriculum that allows project based ICT enhanced approach. These schools begin to involve the community, more in the learning environment and as resource providers.

The transferring approach is linked with schools that have used ICT creativity to rethink and renew school organization. ICT becomes an integral though invisible part of the daily personnel productivity and professional practice in enhancing teachers efficiency in view of vision 2020. the focus of the curriculum is a student centred integration of subject area in the real-world applications. The students may work with community leaders to solve local problems by accessing analyzing, reporting and presenting information with ICT tools as the learners access to technology is broad and unrestricted. ICT is also taught as a subject area at an applied level and is incorporated into all vocational areas thereby making the school a centre of learning for the community development.

Recommendation

1. Educational planners and curriculum developers should include ICT schedules in our school system, so that student can effectively practice them and get use to them in improving academic performance.
2. The various tiers of government should make effort toward reinforcing primary / secondary schools with ICT materials, facilities and equipment to ensure effective implementation at those levels of the nation's educational system.
3. Both in service and pre-service professional teachers should be able to attend special courses on ICT specialization in order to enhance productivity.
4. Contribution should be drawn from parent, voluntary agencies, NGO and willing individuals to help implements ICT project in local community where schools are located.
5. All teacher training institutions should be mobilized to develop a more systematic career improvement in line with ICT training programmes.

Conclusion

Most people, are aware that we live in a rapidly changing world and without any shadow of doubt, it must be realized that, the world is going on-line, although globalization is being propelled by rapid technological innovations, hence, it is essential that ICT coordinators and other ICT personnel should continue their own .professional development. This development will involve mastering new technical and teaching competencies required due to technical evolution and changes inside a school

organization. It also involves communicating and exchanging experience with other school ICT coordinators.

For ICT specialization, teachers need on occasion to attend special course, which in some counties include examination, leading to certification as teachers of computer studies as these will help in the achievement of national development goals in the light of vision 2020.

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