ICT AND EDUCATION: A SHIFT FROM THE TRADITIONAL PEDAGOGY TO A MORE CONSTRUCTIVIST LEARNING APPROACH IN SOME SECONDARY SCHOOLS IN NGAOUNDERE ADAMAWA REGION OF CAMEROON

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Abstract

The advent of Information and Communication Technology in the 21st century have changed the general perspective of education and humanity from ignorance to knowledge of Information and Communication Technology in Education (ICTE), its effects on social change and in education. In the developing world there have been considerable shifts from traditional methods of teaching to the use of Information and Communication Technology in the teaching-learning process. We conducted some investigations with the teachers in some secondary and high schools in Ngaoundere Adamawa Region of Cameroon in order to know if they use ICTs to facilitate the teaching/learning process. Information and Communication Technology have greatly facilitated the teaching-learning process in different forms; exercises, tutorials, platforms, internet, and so on. Wikipedia presents five different types of ICTs namely, Print, Audio/Video, Radio and TV, Computers and the Internet to serve the Haddad and Draxler's five levels of its concept in Education Technology namely, presentation, demonstration, drill and practice, interaction, and collaboration to add value to teaching and learning, simplify administration procedures and operations while running educational institution such as a school, college or a university; promote the significance of smart classroom, enhance stimulating and engaging Multi-Grade Classroom Methods and mainly, a bridge the gap between the management and the guardians. Education has been a fundamental preoccupation of social science researchers. From the beginning of

civilisation in Ancient Egypt, human beings have based their activities on the practice of education which appears as the base on which social organisation is formed and a pillar of all human society. Each society is therefore trying to put forward a credible educational system which will assure socialisation of its members. Emile Durkheim a Sociologist sees an individual as "the person that education has made in us and not a person which nature has made, but one whom the society has made. Every society has a social heritage that is social knowledge and practices that needs to be transmitted from generation to generation, be they preindustrial, industrial or post-industrial either formally or informally organize their educational systems to fit societal needs.

From our statistics and field investigations, it has been revealed that these teachers do not use ICTs and most of them lack notion ICTs not to talk of using them to facilitate the teaching/learning process. Hence, some recommendations were made to the teachers in particular and for the educational family in general. Some suggestions were also made for further research in order to ameliorate the transmission and acquisition of knowledge.

Keywords: *Education, ICT, Society, Traditional Pedagogy, Constructivist.*

Introduction

Education is a social organisation that ensures cultural transmission of knowledge and by so doing, it shapes or molds an individual's personality to conform to the social framework and thus help integrate in the society. The factors involved in the teaching process, the educational tasks, all procedures and situations, as well as all auxiliary means involved in achieving education have to meet the social needs. And within the context of a society characterized by an ever changing and improving dynamics, the values that express the educational aim, the educational purposes and objectives must undergo a thorough transformation, in order to correspond with the actual trends. The rapid development of computers and Internet has made teachers consider computer assisted teaching a component of learning pedagogy. That is why the traditional educational

system is no longer accepted and has to consider the technological and conceptual changes of the society. For example, in the traditional learning system the main goals were centered on acquiring knowledge, while nowadays the actual educational context and educational reforms have set as main objectives those factors and means that cover primarily the formation of attitudes and intellectual capabilities, and further assimilation of knowledge. Such requirements, of course, the selection of the educational content, all the factors involved in education are determined by the context in which education is developed. The main purpose is to make teachers acknowledge both the advantages and disadvantages of using computers so that they can make the most of efficiency of modern technology to enhance learning.

There are still many teachers who do not own the computer, and they first need training to learn to use the basics of computer, navigating the Internet and software programs that will allow them to create Internet-based exercises or applications. At the same time, the digital technologies era seems to belong to the young generation, as students are one step ahead of their teachers when it comes to using computers. This is an important part that has to be considered and anticipated by the teachers and need to be turned into an advantage for teaching. Information and Communication Technology can contribute to universal access to education, equity in education, the delivery of quality learning and teaching, teachers' professional development and more efficient education management, governance and administration. ICTs stand for information and communication technologies and are defined, for the purposes of this primer, as a "diverse set of technological tools and resources used to communicate, and to create, disseminate, store, and manage information." These technologies include computers, the Internet, broadcasting technologies (radio and television), and telephony. In recent

years there has been a groundswell of interest in how computers and the Internet can best be harnessed to improve the efficiency and effectiveness of education at all levels and in both formal and non-formal settings. But ICTs are more than just these technologies; older technologies such as the telephone, radio and television, although now given less attention, have a longer and richer history as instructional tools. For instance, radio and television have for over forty years been used for open and distance learning, although print remains the cheapest, most accessible and therefore most dominant delivery mechanism in both developed and developing countries.

Information and Communication Technology is an umbrella term that includes all technologies for the manipulation and communication of information. ICT considers all the uses of digital technology that already exists to help individuals, business and organization. It is difficult to define ICT because it is difficult to keep up the changes they happen so fast. ICT is concern with the storage, retrieval, manipulation, transmission or receipt of digital data. Information and Communication Technology in this work refers to the computer and internet connections used to handle and communicate information for learning purpose. The constructivist approach considers learning as authentic and learner centered. ICT, the computer for example is a great help in the constructivist approach, where one can design simulated and individualized learning environments to students. ICTs are exerting impacts on pedagogical approaches in the classrooms. Their contribution to changes in teaching practices, school innovation, and community services is considerable.

Background of the study

With the limitations imposed by slow and limited growth of education, education has become one of the most influential

instruments of social change. It has led to the mobilization of people's aspirations for development and change. Therefore, in modern complex national societies, education can neither be regarded as a controlling force conserving cultural heritage, nor could it be viewed as an agent of social change. It can only be regarded as an agent of social and cultural change which takes place for the development of the society to keep in pace with the modern changing society. Education is the most powerful instrument of social change. It is through education that the society can bring desirable changes and modernize itself. Education can transform society by providing opportunities and experiences through which the individual can cultivate himself for adjustment with the emerging needs and philosophy of the changing society. A sound social progress needs careful planning in every aspect of life; social, cultural, economic, and political. Education must be planned in a manner which is in keeping with the needs and aspiration of the people as a whole. Sociologists, social psychologist, philosophers, politicians, educationists and educational planners regard education as an instrument of social change. In the end, it should be noted that educationists, educators and schools have a tremendous responsibility in social change. Defective education leads to defective social changes. Hence if society is to change in the right direction, it is essential that attention is to be paid to the educational system, as education is at once a creature and creator of social change.

Methodological approach and theoretical framework

This study uses the narrative design with qualitative research approach. It aims at describing and analyzing educational mutation with the advent and integration of Information and Communication Technology. Different

techniques were used for data collection: documentary research, participant observation, and interview.

Emile Durkheim's theory on Education was used in this research work. Durkheim focused his study on school as an agent of socializing the younger generation. The school system is a subsystem of the society which fulfills the functions derived from the global system and possesses structural feature peculiar to any social system. Emile Durkheim (1858-1917) directed substantial attention to the role of education in a society and developed a theory explaining this role. His works as a lecturer in Bordeaux (1887-1902) and Sorbonne (1902- 1917) contributed significantly to the development of his sociological theory on education. He saw education as society's means of guaranteeing continuation of its existence by assimilating new individuals into it. According to Durkheim, education should help a child learn to use resources already developed by society and possibly help the child expand from this base.

The role of ICT in facilitating pedagogy in the information society.

Active learning: ICT enhanced learning mobilizes tools for examination, calculation and analysis of information in order to provide a platform for student inquiry, analysis and construction of new information. The learners therefore, learn as they do and, whenever appropriate work on real-life problems in-depth. Moreover, ICT makes the learning less abstract and more relevant to their life situations. In contrast to memorization-based or rote learning, that is the feature of traditional pedagogy; ICT enhanced learning promotes increased learner engagement. ICT enhanced learning can also be 'just-in time' learning that the learners choose what to learn when they need.

Collaborative learning: ICT supported learning encourages interaction and cooperation among students, teachers, and experts regardless of where they are. Apart from modeling real world interactions, ICT supported learning provides opportunity to work with students from different cultures, thereby helping to enhance learners teaming and communication skills as well as their global awareness. It models learning done throughout the learner's lifetime by expanding the learning pace to include not just peers but also mentors and experts from different fields.

Creative learning: ICT supported learning promotes the manipulation of existing information and the creation of real-world products rather than the duplication of received information.

Integrative learning: ICT enhanced learning promotes a thematic integrative approach to teaching and learning. This approach eliminates the artificial separation between the different disciplines and between theory and practice, which characterizes the traditional approach.

Evaluative learning: ICT enhanced learning is student-directed and diagnostic. Unlike static, text or print-based education, ICT enhanced learning recognizes the presence of different learning pathways to explore and discover rather than merely listen and remember.

Functions of ICT in education:

ICT as object. It refers to learning about ICT mostly organized in a specific course. What is being learned depends on the type of education and the level of the students? Education prepares students for the use of ICT in education, future occupation, and social life.

ICT as an assisting tool. ICT is used as a tool, for example while making assignments, collecting data and

documentation, communicating, and conducting research. Typically, ICT is used independently from the subject matter.

ICT as a medium for teaching and learning. This refers to ICT as a tool for teaching and learning itself, the medium through which teachers can teach and learners can learn. It appears in many different forms, such as drill and practice exercises, in simulations and educational networks; and ICT as a tool for organization and management in schools.

Obstacles for ICT integration in education

ICT as a modern technology that simplifies and facilitates human activities is not only advantageous in many respects, but also has many limitations. The limitations can be categorized as teacher related, student related, and technology related. However, in order to improve, and make optimal use of ICTs, changes in the pedagogic approaches and classroom strategies as well as integrating ICT in teacher training and staff development practices accompanied by teacher motivation schemes are imperative.

Teacher related

Teachers' attitude plays an important role in the teaching-learning process that utilizes computers and internet connections. Although teachers' attitude towards use of these technologies is vital, many observations reveal that teachers do not have clarity about how far technology can be beneficial for the facilitation and enhancement of learning. Of course, some teachers may have positive attitudes to the technology, but refrain from using it in teaching due to low self-efficacy, tendency to consider themselves not qualified to teach with technology. The major obstacle for ICT integration in education and that is the difficulty of integrating computers and internet

into classroom practices. Teachers' lack of competence and enthusiasm to use computers in the instructional processes also contribute to the difficulty.

Student's related

Computers limit students' imaginations, Over-reliance on ICT limits student's critical thinking and analytical skills; Students often have only a superficial understanding of the information they download; Computer-based learning has negative physical side-effects such as vision problem; Students may be easily distracted from their learning and may visit unwanted sites, Students tend to neglect learning resources other than the computer and internet; Students tend to focus on superficial presentations and copying from the internet; Students may have less opportunity to use oral skills and hand writing; Use of ICT may be difficult for weaker students, because they may have problems with working independently and may need more support from the teacher.

Technology related

The high cost of the technology and maintenance of the facilities, high cost of spare parts, virus attack of software and the computer, interruptions of internet connections, and poor supply of electric power are among the technology related limitations of ICT use in education.

Conclusion

Conclusively, the constructivist approach considers learning as authentic and learner-centered. ICT is a great help in the constructivist approach, where one can design simulated and individualized learning environments for students. ICT is

exerting impacts on pedagogical approaches. Their contribution to changes in teaching practices, school innovation, and community services is considerable. That notwithstanding, the integration of ICTs in our educational system may face various challenges with respect to policy, planning, infrastructure, learning content and language, capacity building and financing. ICT enhanced education requires clearly stated objectives, mobilization of resources and political commitment of those concerned. Educational goals should be specified at different education and training levels as well as the different modalities of ICTs use that can facilitate in the pursuit of the goals. Policy makers then, need to know the potentials of ICTs in applying different contexts for different purposes. With respect to challenges of capacity building, we have to develop competencies of teachers and school administrators for the successful integration of ICT in the education system.

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