International Journal of Emerging Technology in Computer Science & Electronics (IJETCSE)
ISSN: 0976-1353 Volume 11 Issue 2 –NOVEMBER 2014.

ETHICAL ISSUES OF ICT IN EDUCATION

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Abstract— The education in worldwide is facing a significant challenge in preparing students and teachers for "our future 'knowledge-based' society" during a time when most teachers are not prepared to use ICT and "the majority of existing school buildings, even in the most developed countries, are not equipped to integrate the new information and communication technologies."

Information and communications technologies (ICT) are a diverse set of technological tools and resources used to communicate, and to create, disseminate, store, and manage information. Communication and information are at the very heart of the educational process, consequently ICT-use in education has a long history. ICT has played an educational role in formal and non-formal settings, in programs provided by governmental agencies, public and private educational institutions, for-profit corporations and non-profit groups, and secular and religious communities. Access to digital tools, applications, and networks continues to grow worldwide and media are increasingly available in digital form, ICT-use in education can be expected to increase dramatically.

Key Words: ICT in Education, Ethical Issues in Education, ICT issues in Education

I. INTRODUCTION

Educational institutions lay the groundwork for the future; they prepare students who will become the citizens and leaders of tomorrow. The education in worldwide is facing a significant challenge in preparing students and teachers for "our future 'knowledge-based' society" during a time when most teachers are not prepared to use ICT and "the majority of existing school buildings, even in the most developed countries, are not equipped to integrate the new information and communication technologies. "Information and communications technologies (ICT) are a diverse set of technological tools and resources used to communicate, and to create, disseminate, store, and manage information. Communication and information are at the very heart of the educational process, consequently ICT-use in education has a long history. ICT has played an educational role in formal and non-formal settings, in programs provided by governmental agencies, public and private educational institutions, for-profit corporations and non-profit groups, and secular and religious communities. Access to digital tools, applications, and networks continues to grow worldwide and media are increasingly available in digital form, ICT-use in education can be expected to increase dramatically. Several important issues in respect to the use of ICTs in educational settings including how newer ICTs differ from older technologies, why these differences are thought to be educationally important, what research shows about the effectiveness of ICTs in education, what measures are being taken to create ICT-enabled learning environments, and some of the significant issues facing educators and policy-makers when considering implementing ICT. Although our focus will be on formal education, we will also refer to the use of ICT in non-formal and informal education. We hope to illuminate trends that will help readers to understand current directions and promising practices in the application of these systems in educational settings. Educational institutions lay the groundwork for the future; they prepare students who will become the citizens and leaders of tomorrow.

The strategic aspects of ICT use in education will become manifest as soon as ICT use becomes an integral part of education. It is plausible to envisage the development of fundamental educational trends, such as a new understanding of the nature of knowledge, incorporating social and psychological factors, as well as new methods of obtaining knowledge; realization of cultural and historical limitations of dividing knowledge into educational and scientific, natural and scientific, technical, and social and humanitarian categories; the search for new ways of structuring knowledge; an unavoidable expansion of databases, and in due course the merging of databases into a single worldwide system (a kind of integrated global intellect) or a place for universal communication; and a new level of awareness of educational ideas and values.

The new digital ICTs are not single technologies but combinations of hardware, software, media, and delivery systems. Today, ICT in education encompasses a great range of rapidly evolving technologies such as desktop, notebook, and handheld computers; digital cameras; local area networking; the Internet and the World Wide Web; CD-ROMs

and DVDs; and applications such as word processors, spreadsheets, tutorials, simulations, electronic mail (email), digital libraries, computer-mediated conferencing, videoconferencing, and virtual reality. It should also be noted that use of newer ICTs is being integrated with use of older technologies.

A. Changes in Communications and Information Industries

The Digital ICT tools and applications in education mirrors profound structural changes occurring worldwide in communications and information industries. The ability to digitize analog signals and transmit them over telecommunications networks is resulting in the restructuring of the radio, telephone, television, publishing, entertainment, and computer industries into new multimedia industries that create digital products combining voice, video, text, graphics, images, and animations, and deliver these signals electronically.

B. ICT Access in Education

The Efforts to connect educational organizations to the Internet are being driven by societal pressure. But such efforts are also being driven from within education by powerful differences between older and new ICTs, differences that greatly enhance the usefulness of such technologies to teaching and learning. New ICTs differ in several important dimensions from older technologies, including the integration of multiple media, interactivity, flexibility of use, and connectivity. Understanding these differences will provide a clearer picture of why the use of ICT in education can be expected to continue to grow.

Studies focusing on the use of computer-mediated instruction conducted in the 1980s found more positive results. In a meta-analysis of over 500 individual studies, James Kulik (1994) found:

Students usually learn more in classes in which they receive computer-based instruction.

Students learn their lessons in less time with computer-based instruction.

Students also like their classes more when they receive computer help in them.

Students develop more positive attitudes toward computers when they receive help from them in school.

Computers do not, however, have positive effects in every area in which they were studied.

C. Ethical problems and issues of the application of ICTs

Both special literature on computer ethics and more general literature addressing information society development, values and other cultural issues focus on ethical aspects arising from application of computer technologies in education. It focuses on questions of responsibility for defects in the work of software, on preventing access to private information stored in computer databases, centralization and decentralization of power in computerized environments, as well as copy-right, intellectual property, and commercial confidentiality issues.

The urgency of the ethical dimension in application of computer technologies in education has become obvious with the rapid expansion of computer technologies in education, growth of variety in educational material and forms of their electronic presentation, and the increase in the number of teachers and students who use (or would like to use) computer technologies in their work and studies. The ethical element must become essential in the multi-dimensional evaluation of the quality of technologies, electronic educational material, information resources and modes of their organization and employment. Such evaluation must focus not only on the quality of the subject, its technical and economic merits but also on the legal and psychological issues. The ethical evaluation of electronic communications in education is acquiring greater significance. Emphasis on education as an important area of computer technologies application is supported by the experience gained by computer ethics, professional ethics and the studies of the information society. At the same time it is worthwhile to conceptualize the accumulated practical experience of teachers and university lecturers, as well as many different educational institutions.

II. CONCLUSION

Despite a wide range of available literature and some structures in place, it is not particularly easy to draw a comprehensive picture of the present state of affairs in the field of computer and information technologies application.

Rapid growth in the use of ICTs in education, establishment of open and virtual universities offering courses to hundreds of thousands of students worldwide provide ample proof of global integration. Globalization of product and services markets is changing the economic situation, while increased cross-border labour mobility and levelling up of the educational standards demand a swift and adequate response from the international community.

The use of newer, digital ICTs – because of the ability to integrate multiple media, interactivity, flexibility of use, and connectivity – are inspiring remarkable transformations in education around the world. These transformations hold promise for the improvement of the lives of the rich and of the poor, whether living in developed and developing countries. We have chosen to focus on existing, widespread uses of ICTs in education, but advances in wireless telecommunications, virtual reality, pervasive computing, artificial intelligence, speech recognition, and “next generation” networking technologies promise to remodel today’s educational

applications as comprehensively as the computer revolutionized yesterday's.

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