

# ICT for Innovative Education

Manjula K A  
Research Scholar  
Bharathiar University

**Abstract**— Information and communication Technologies is rapidly advancing and the old model a Teacher - Student has been outdated. This is the era of global learning communities. The main purpose of ICT enabled methods is to create a shared learning environment where knowledge and expertise are transferred as a group rather than from an individual expert. With the advent of open source softwares, the use of ICT have become more extensive and accessible to society. There is no doubt that ICT in education will definitely prepare children to think and communicate creatively and thus help them for successful lives and careers in an increasingly technological world.

**Keywords**- ICT, shared learning, global learning community, inclusive education.

## I. INTRODUCTION

ICT is the application of communication technologies consisting of hardware, software, networks and media for collection, storage, processing transmission and presentation of information data, text or image [1]. Since education has been shown to be the bedrock for nation building, its quality management is necessary. Though Information and communication technology (ICT) is a force that has changed many aspects of the way we live, compared to fields like medicine, business, banking and engineering, the impact of ICT on education, has been far less. There have been a number of factors such as a lack of funding to support the purchase of the technology, a lack of training among established teaching practitioners, a lack of motivation and need among teachers to adopt ICT as teaching tools [2]. But in recent times, there have been trends which have strengthened and encouraged moves to adopt ICT into classrooms and learning settings. These include efficiencies in terms of program delivery [3]; the capacity of technology to provide support for customized educational programs to meet the needs of individual learners [4]; and the growing use of the Internet and www as tools for information access and communication [5].

Next sections of this paper describe the areas of applications of the same as well as benefits. The paper concludes mentioning the present status, challenges and future of ICT.

## II. AREAS OF APPLICATIONS OF ICT

The ICT being latest, can be used both at school and higher education levels in many areas like Teaching, Diagnostic Testing, Remedial Teaching, Evaluation, Psychological Testing, Development of Virtual Laboratory, Online Tutoring, Development of Reasoning & Thinking and Instructional Material Development. ICT integrated education helps individual for solving the day-to-day problems and inculcates the ability to think creatively and thus improving the quality of life. Another area of application is in self paced learning using internet and online databases crossing the geographical boundaries and exploring immense resources. In learning of disabled, ICT can play a great role by providing them a suitable environment to learn which is otherwise denied by their physical limitations. As an example, visually handicapped students can use ICT in learning by employing techniques such as converting text into speech or making suitable enlarged displays. Several softwares are in use nowadays for the help of disabled. Keyboard or touch screen operations are easier than using pen-paper and there are data handling packages that allow them to easily present tables and graphs. ICT integrated special needs education program is proved to have improved the memory and mental ability of mentally handicapped. Thus inclusive education is a prominent area of application of ICT.

Education can reach masses at a lower cost using today's technologies like presentations with LCD, use of kiosks, video conferences and media broadcasts. There are several online communities and content publishing web diaries such as blogs where active discussions are taking place using the possibilities of internet. Softwares including open softwares are being introduced as effective tools for education. Use of multimedia allows preparing interesting presentations for audience. Several statistical tools are available making research analysis easier than manual analysis and hence find a relevant place in education system. Communications techniques such as emails and online chatting are also technological applications which are proved to be effective. Since ICTs allow each individual to relate to the medium and its content, ICT based education is appropriate for individualization of learning. This technology integrated education finds application in all those situations where per unit cost is to be low and distance is not a concern.

## III. BENEFITS OF ICT

ICT was originally intended to serve as a means of improving efficiency in the educational process [6]. Furthermore, it has been shown that the use of ICT in education can help improve memory retention, increase motivation and generally deepen understanding [7]. ICT can also be used to promote collaborative learning,

including role playing, group problem solving activities and articulated projects [8]. Generally, ICT is promoting new approaches to working and learning, and new ways of interacting [9]. ICTs can be used to improve student understanding, increase the quality of education, and thereby increase the impact of education on the economy. Moreover, Papert [10] identified the following positive effects on students of ICTs in education including enhanced motivation and creativity when confronted by the new learning environments, a greater disposition to research and problem-solving focused on real social situations, more comprehensive assimilation of knowledge in the interdisciplinary ICT environment, systematic encouragement of collaborative work between individuals and groups, ability to generate knowledge, capacity to cope with rapidly changing, complex, and uncertain environments, new skills and abilities fostered through technological literacy.

Furthermore, ICTs are transforming schools and classrooms by bringing in new curricula based on real world problems, providing tools to enhance learning, giving students and teachers more opportunities for feedback and reflection, and building local and global communities that include students, teachers, parents, practicing scientists, and other interested parties [11].

#### IV. CONCLUSION

Rapid changes in technology will ensure that ICT will proliferate in the classroom. It is to be noted that still there are some challenges like lack of infrastructure, poor funding, lack of competent resource persons, inhibition towards a change, slow Internet connections and insufficient software in the native language. The successful integration of ICTs into the classroom warrants careful planning and depends largely on how well policy makers understand and appreciate the dynamics of such integration. Apart from its minor weaknesses, it is generally believed that there will be many benefits for both the learner and the teacher, including the promotion of shared working space and resources, better access to information, the promotion of collaborative learning and radical new ways of teaching and learning. ICT will also require a modification of the role of the teacher, who in addition to classroom teaching, will have other skills and responsibilities which will pave the way for quality education. With the advent of open source software, the use of ICT has become more extensive and accessible to society. Ultimately, the use of ICT will enhance the learning experiences for children, helping them to think and communicate creatively and thus be part of the global learning community.

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