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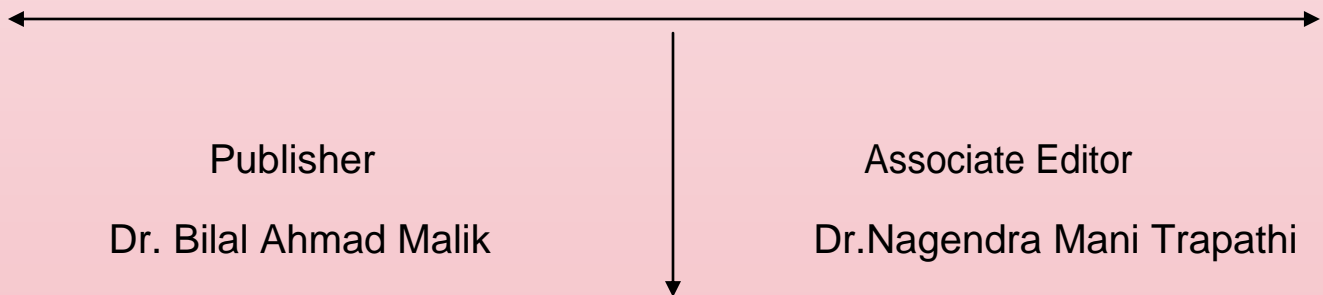
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CHALLENGES IN INTEGRATING ICTs AND ITS EFFECTIVE USE IN SCHOOL EDUCATION

A.AMALA ARUNA RANI* & DR.R. JOHN LOUIS MANOHARAN**

*Assistant Professor, Achariya College Of Education, Puducherry
** Principal, Pope John Paul II College Of Education, Puducherry

ABSTRACT

This paper is a mere attempt to present a glimpse of meaning of ICT, its importance & its mandatory need for education, which is indispensable. UNESCO takes a holistic and comprehensive approach to promote ICT in education. Access, inclusion and quality are among the main challenges to address. Globalization and innovations in technology have led to an increased use of ICTs in all sectors - and education is no exception. Uses of ICTs in education are widespread and are continually growing worldwide. It is generally believed that ICTs can empower teachers and learners, making significant contributions to learning and achievement. However, current research and studies about ICT in education has got a great impact on student's achievement in education. Many teachers oppose to use ICTs, especially computers and the internet. In terms of using internet and other ICT as a resource for lesson preparation, most of the teachers never use the internet to gather information sporadically or regularly. If employed effectively, innovative teaching practices can result in high-quality learning. Information Communication Technology (ICT) is an ever-evolving animal and it continually gives birth to new innovations. Although we need to embrace ICT in the classroom, we must remember that it should never be used with the aim of replacing existing methods of teaching. The modern classroom is transforming, and ICT provides the perfect platform for teachers to adapt and improve their teaching practices, with new methods such as blended learning.ICT in schools should open a new world of fun, interactivity and motivation. We need to embrace ICT and use it to its full advantage to improve teaching methods and encourage students to succeed. This paper examines the key issues and challenges in the effective implementation of ICTs in school education and provides suggestions to address these challenges and aid the implementation of ICTs in school education.

KEY WORDS: ICT, Challenges in integrating ICT, ICT in School Education.

INTRODUCTION

Today's society shows the ever-growing computer-centric lifestyle, which includes the rapid influx of computers in the modern classroom. It is observed that new and emerging technologies are being integrated with the older technologies to make ICT applications in education more effective. ICT, contributes 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 in schools provide an opportunity to teachers to transform their practices by providing them with improved educational content and more effective teaching and learning methods. ICTs improve the learning process through the provision of more interactive educational materials that increase learner motivation and facilitate the easy acquisition of basic skills. **Twenty-first century teaching** learning skills underscore the need to shift from the **traditional teacher-centered pedagogy to more learner-centered methods**. Active and collaborative learning environments facilitated by ICT contribute to the creation of a knowledge-based student population. Education leadership, management, and governance can also be improved through ICT by enhancing educational content development and supporting administrative processes in schools and other educational establishments. With today's technology, one even has the ability to access experts, professionals, and leaders in their fields of interest, around the world at any given time.

In India, various ICTs have been employed over the years to promote primary and secondary education. However, there have been enormous geographic and demographic disparities in their use. Some states in the country currently have an enabling environment in place that allows for a greater use of ICTs for education. Technology is only a tool and the success of ICTs in enhancing the delivery of quality education to the needy, without widening the gap. The Governments in each of the countries are now keen and committed on exploring the uses of ICTs for school education. Hence, Governments are investing in infrastructure facilities that link schools/educational institutions and resource centers.

Access to ICTs ensures enhancement of traditional or formal education systems, enabling them to adapt to the different learning and teaching needs of the societies. ICTs can provide new and innovative means to bring educational opportunities to greater numbers of children of all ages. The innovation had begun with a focus on ICT skills, but had spread to include the use of ICT in teaching other subjects which has resulted in team

teaching and collaborative planning by teachers. However, the growth and success of ICTs in education depends on the extent to which the issues and challenges outlined in this paper are addressed.

ICT- MEANING, IMPORTANCE AND ITS OBJECTIVES

ICT is an acronym that stands for "Information Communication Technologies". Information and communication technologies are 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 that happen so fast. ICT is concern with the storage, retrieval, manipulation, transmission or receipt of digital data. The definition taken from the guidance in the QCA schemes of work for ICT is *"ICTs are the computing and communication facilities and features that variously support teaching, learning and a range of activities in education."*

ICT refers to all the technology used to handle telecommunications, broadcast media, intelligent building management systems, audiovisual processing and transmission systems, and network-based control and monitoring functions. ICT can be defined as the use of hardware and software for efficient management of information. ICT refers to the forms of technology that are used to transmit, store, create, share or exchange particular task.

As world is moving rapidly towards digital information, the role of ICTs in education is becoming more and more important and this importance will continue to grow and develop in 21st century. The quality education is basic need of the society. There are number of effective teaching & learning methodologies in practice. Technology is the most effective way to increase the student's knowledge. Here comes the role of ICT in the education sector. Nowadays ICT (specially internet) plays imminent role in the process of integrating technology into the educational activities.

Importance of ICT

ICT has become an integral part of everyday life for many people. It increases its importance in people's lives and it is expected that this trend will continue, to the extent that ICT literacy will become a functional requirement for people's work, social, and personal lives. It provides wider knowledge and can help in gaining and accessing information. Hence the importance of ICT is –

- ➢ access to variety of learning resources
- ➢ anytime learning
- ➢ anywhere learning
- ➢ collaborative learning
- ➢ multimedia approach to education
- ➢ up to date information
- ➢ access to online libraries
- ➢ teaching of different subjects made interesting
- ➢ educational data storage
- ➢ better accesses to children with disabilities
- ➢ reduces time on many routine tasks.

The use of ICT in education adds value in teaching and learning, by enhancing the effectiveness of learning, which was not previously available. ICT may also be a significant motivational factor in students' learning, and can support students' engagement with collaborative learning.

The followings are the aim and objectives of ICT in education:

- ➢ To implement the principle of life-long learning / education.
- ➢ To increase a variety of educational services and medium / method.
- ➢ To promote equal opportunities to obtain education and information.
- ➢ To develop a system of collecting and disseminating educational information.
- ➢ To promote technology literacy of all citizens, especially for students.
- ➢ To develop distance education with national contents.

➢ To promote the culture of learning at school (development of learning skills, expansion of optional education, open source of education, etc.)

➢ To promote the culture of learning at school.

Worldwide research has shown that ICT can lead to improved student learning and better teaching methods. A report made by the National Institute of Multimedia Education, proved that an increase in student exposure to educational ICT through curriculum integration has a significant and positive impact on student achievement, especially in terms of **"Knowledge Comprehension", "Practical skill" and "Presentation skill"** in various subject areas.

## KEY CHALLENGES IN INTEGRATING ICTs IN EDUCATION

Integration of ICT in the educational system is a challenging task. It requires clear and specific objectives , guidelines and time-bound targets .Although valuable lessons may be learned from best practices around the world, there is no one formula for determining the optimal level of ICT integration in the educational system. Significant challenges that policymakers and planners, educators, education administrators, and other stakeholders need to consider and include educational policy and planning, infrastructure, language and content, capacity building, and financing. ICT –based interventions must take into account current institutional practices and arrangements. The key challenges that surround the integration of ICT in education are listed below. The following section we discuss these challenges in detail.

Environmental challenges: People are expected to be able to work, learn, and study whenever and wherever they want to; this still is not possible in developing world. There is a limited regional infrastructure for the full ICTs integration in education. It is very important for policymakers and planners before any ICT implementation in education to carefully consider the following:

➢ Appropriate rooms or buildings available to use the technology are needed. In countries where they are many old buildings, ventilation, security and safety will also be needed.

➢ Availability of electricity - even in most developing countries there is still no reliable supply of electricity.

➢ Policymakers should also look at the different types of ICT in the educational system in particular.

Cultural challenges: Diversities of culture in different part of the world are also challenges in introducing ICT in education. English is the dominant language of the internet. In most countries where English is not the first language this represents a serious barrier in integrating ICTs use in education system, where student's multilingualism background causes a major challenge in the role of ICTs .

Educational challenges: One of the greatest challenges in ICT integration in education. ICTs in education require large capital investments. Due to financial difficulties, ICT for education on the other hand has not yet been considered a priority. In term of human resources, the constraints are due to the lack of trained teaching manpower and lack of motivation among educators to adopt and integrate ICT as a tool into their teaching or educational curriculum. Extra effort and time is involved in the use of ICTs in education. In general, integrating ICTs use in education requires establishment of infrastructural facilities, acquisition of technologies and their periodic updating, management and professional support services. Only in this way can educational institutions in developing countries effectively and equitably address the key needs of the population as a whole to respond to new challenges and opportunities created by an increasingly global economy. These are some internal barriers/challenges used in integrating ICTs use in education system in general.
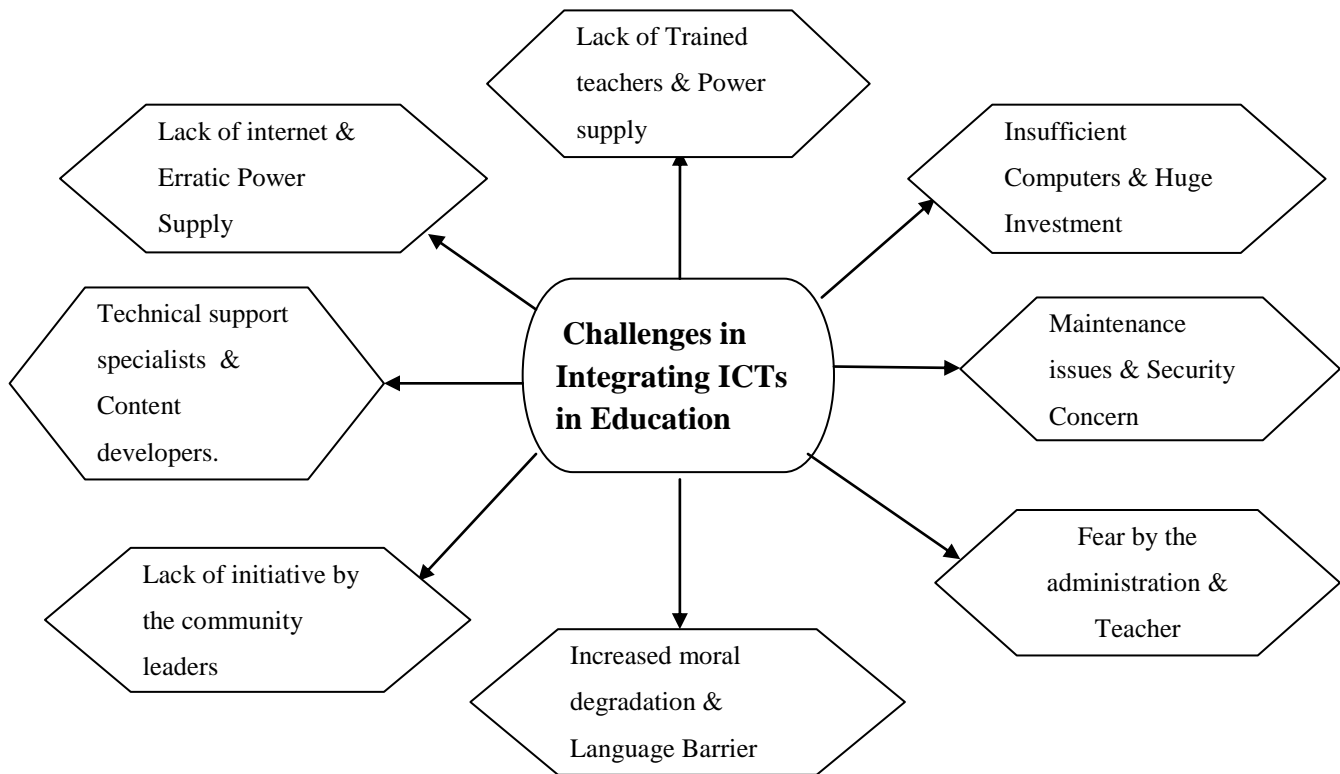
ROLE OF ICT IN EDUCATION

ICT application had become an important part of teaching and learning. The Ministry of Education invested a huge effort in terms of funding and training to equip teachers and students with ICT skills. Student get benefit from new opportunities offered by ICT and to support teachers who lack adequate skills and content knowledge by improving the quality of learning. Using multimedia in education results in the increasing productivity and retention rates, because people remember 20% of what they see, 40% of what they see and hear, but about 75% of what they see and hear and do simultaneously. The use of ICT can engage the learner in four step process

Watching ⟶ Thinking (mind) ⟶ Feeling (Emotions) ⟶ Doing (Muscle)

It is believed that the use of ICT in education can increase access to learning opportunities. It can help to enhance the quality of education with advanced teaching methods, improve learning outcomes and enable reform or better management of education systems. Extrapolating current activities and practices, the continued use and development of ICTs within education will have a strong impact on: What is learned, how it is learned, when and where learning takes place, & who is learning and who is teaching. The continued and increased use of ICTs in education in years to come, will serve to increase the temporal and geographical opportunities that are currently experienced. The use of ICT creates an open environment which enables the storage and the reuse of information materials as also it enables the interface among the teachers as well as students. While technology can influence the way how students are taught, it would also enable the development of collaborative skills as well as knowledge creation skills. The modern teacher has to help, to guide and facilitate the learner's development. The teacher has to inspire and motivate the young leaners and assist the adult learners in their quest for knowledge and skills. The ICT curriculum provides a broad perspective on the nature of technology, how to use and apply a variety of technologies, and the impact of ICT on self and society. Technology is about the ways things are done; the processes, tools and techniques that alter human activity. ICT is about the new ways in which people can communicate, inquire, make decisions and solve problems.

ICT in education acts as a change agent and supports independent learning. Students become immersed in the learning process by using ICT. Rapid changes in the technologies are indicating that the role of ICT in future will grow tremendously in the education. The SSA has taken initiatives to strengthen Computer-Aided Learning (CAL) in collaboration with a number of private organizations after having a look at the

advantages of ICT in Education for achieving the goals of SSA. Under the SSA framework, a provision has been made for computer education district-wise and is made available to each State. **Use of ICT in education field leads to be more student-centered.**

USE OF ICT IN SCHOOL EDUCATION

ICTs in schools provide an opportunity to teachers to transform their practices by providing them with improved educational content and more effective teaching and learning methods. ICTs improve the learning process through the provision of more interactive educational materials that increase learner motivation and facilitate the easy acquisition of basic skills. ICT also focuses modification of the role of teachers. In addition to classroom teaching, they will have other skills and responsibilities. Teachers will act as virtual guides for students who use electronic media. Ultimately, the use of ICT will enhance the learning experiences of students. Also it helps them to think independently and communicate creatively. It also helps students for building successful careers and lives, in an increasingly technological world.

Are our school students making their assignments online and emailing them? Are our teachers using different presentations and documentaries to teach primary and secondary levels instead of relying only on the course books? Most probably, no! Why? Well, before answering this question, let's first explore that why should we use Information and Communications Technology (ICT) in our classrooms.

ICT when integrated into the classrooms adds immense value to the quality of teaching, making it a holistic learning experience for the pupils. It makes education student-centered, visual, and time-saving and motivates the young scholars to produce creative assignments. When incorporated into the curriculum systematically, it helps the teachers in making the complicated concepts simple and easy to understand. It gives students an opportunity to become a part of the global IT village enhancing their technical and communication skills. ICT-oriented topics are always quite interesting as teachers get a variety of pictures, movies, spreadsheets and even online quizzes to carry out their lesson plans with. Besides, effective ICT classroom practices produce well-informed, tech-savvy students who are competent enough to survive in the recession-struck 21st century job market. For instance, ICTs can be used to:

> Keep students well informed about the courses that are available to them.

> Enhance teacher-learner contact, an essential part of a good educational environment, through e-mail, chat sessions, etc.

> Encourage active learning. Students do not learn much from memorizing facts and reproducing set answers; they derive greater benefits by being active in their learning.

> Facilitate peer support in learning. Sharing one's ideas and responding to the ideas of others improves thinking and increases understanding. Learning can improve if it is a team effort rather than a collection of solo performances.

> Provide immediate feedback and encouragement.

> Encourage paced learning through tools such as assignments, tutorials, broadcast programs, computers, conferencing, etc.

> Allow for effective mapping of learning pathways, which facilitate different styles of learning.

This makes us wonder that if ICT can support teaching so much, then why it hasn't been incorporated extensively in education till now. This is because many teachers treat ICT as a standalone activity. They aren't incorporating ICT in their lesson plans and curriculum. A number of them prefer using a white board/black board to explain the topics. This conventional way of teaching indeed works. However, students confront countless problems in retaining the concepts for longer periods and tend to forget them as soon as the term gets over. It would be better if teachers try to make their explanations clear and interesting. Teachers can also use online diagrams and games to explain complex subject matters in an engaging way and even design worksheets to keep their students interested. Besides this, students would have watched and interacted with the technology, chances are that they will remember the topics for a longer time. Students can be encouraged to write online and email their essays, reports, observations and descriptions. This way it would be easier for them to plan, draft, proofread and present their work with lesser errors and more neatness. ICT needs to be inculcated in schools because ICT

➢ Enhances teaching and learning environments.

➢ Enables self-paced learning as a result of this the teaching learning enterprise has become more productive and meaningful.

➢ Helps to facilitate the transaction between producers and users by keeping the students updated and enhancing teacher's capacity and ability fostering a live contact between the teacher and the student. ICTs have become very powerful media for interactive participation of experts and learners and it reaches the unreachable.

ICT can change the entire outlook of present-day education. However, it needs to be planned and structured proficiently to bring a difference in the way our students learn.ICT in schools has the potential to improve the teaching-learning process in many ways. ICT is learner centric and hence brings about active involvement of students in the learning process. Students get motivated when learning activities are challenging, authentic, multi-sensorial and multi-disciplinary. Schools tend to witness a higher attendance, motivation levels, academic accomplishments and effective communication as an outcome of ICT programs and projects. ICT in teaching makes teaching more innovative, interesting, interactive, easy and effective. It complements the traditional teaching-learning process. ICT also helps to impart more information and knowledge to students in a shorter time, enabling maximum utilization of resources and time.

CONCLUSION

Government of India has announced 2010-2020 as decade of innovation. In Indian scenario, mainly education system has three tiers primary (including nursery and preprimary), High school or secondary level (High and senior secondary levels) and the college or higher level (including college, university levels). In all these levels of education ICT can be utilized for better teaching learning process and improving quality of education. ICT helps to develop student's cognitive skills. Reasoning and critical thinking skills are necessary for innovation. Students who enter school are very curious, creative, and capable of learning many things. New ICTs make it possible for students to be active learners. Using ICTs, students choose topics for explorations; take notes; answer questions; explore virtual landscapes; simulate experiments; enter, draw, or chart data; create and manipulate images; make their own PowerPoint presentations; and communicate with others. Students take more interest to learn and they understand more through animated pictures. Hence if the same environment is created in schools by using ICT for teaching, may bring drastic changes in the education scenario. Such type of teaching and learning retains for long time in the minds of the children. This type teaching –learning makes the environment very interactive and is liked by students. It is an exciting new world of learning and training.

The integration of ICT use in education is a main way in facing globalization and it would respond to the type 21st century society that we living in. ICT integration in education is a broad process of applying technology to the curriculum to improve teaching and learning process. The use of ICT can play a number of roles in education by changing the teaching and learning process. However ICT integration is not easy task. There are significant challenges in integrating ICTs use in education faced by policy makers, educators, educational

administrators and students in higher education. Thus there is a need of government authority support to make the integration of ICT in education a successful process.

REFERENCES

1) Chen, A. Y., Mashhadi, A., Ang, D., & Harkrider, N. (1999). Cultural issues in the design of technology-enhanced learning systems. British Journal of Educational Technology, 30(3), 217–230.

2) Oliver, R. & Towers, S. (2000). Benchmarking ICT literacy in tertiary learning settings.In R. Sims, M. O'Reilly &S. Sawkins (Eds).Learning to choose: Choosing to learn. Proceedings of the 17th Annual ASCILITE Conference(pp 381-390). Lismore, NSW: Southern Cross University Press.

3) Bikas C. Sanyal, "New functions of higher education and ICT to achieve education for all", International Institute for Educational Planning, UNESCO, 12 September 2001

4) **ICT in Teacher Education – A Planning Guide, UNESCO2002 Report.**

5) Cartwright, V. & Hammond, M. (2003). The integration and embedding of ICT into the school curriculum: More questions than answers. Paper presented at the ITTE Annual Conference of the Association of Information Technology for Teacher Education. Trinity and All Saints College. Leeds.

6) Herzig, R. G. M. (2004). Technology and its impact in the classroom. Computers & Education, 42(2), 111-131.

7) Haslaman, T., Mumu, K. F., & Usual, Y. K. (2007). The integration of information and communication technologies in learning and teaching process: A lesson plan example. Education and Science, 32(146), 54-63.

8) Oliver, R. & Towers, S. (2000). Benchmarking ICT literacy in tertiary learning settings.In R. Sims, M. O'Reilly &S. Sawkins (Eds).Learning to choose: Choosing to learn. Proceedings of the 17th Annual ASCILITE Conference (pp 381-390). Lismore, NSW: Southern Cross University Press.

9) Briefing Notes to the Director of Educational Technology Division, Ministry of Education, 2009].

10) Govt. of India, ―National Policy On Information and Communication Technology (ICT) In School Education ―,Draft version 1.5, Department of School Education and Literacy ,Ministry of Human Resource Development (2009).

11) The National Policy on Education (NPE,)2009, www.ncert.nic.in/oth_anoun/npe86.pdf

12) Ramana Murthy B.V, Moiz Salman Abdul, Sharfuddin Mohammed ,‖ Designing a web education Model for effective teaching learning process‖ , Proceedings of the 4th national Conference-INDIACom, Computing For Nation Development, BVICAM (2010).

13) Recent Trends in Education,2010, http://education.mapsofindia.com/recent-trends-education.html

14) Sharmila et. Al,‖ ICT in Education and Society‖, Proceedings of the 6th national Conference-INDIACom, Computing For nation Development, BVICAM (2012).

15) Information and Communication Technology for Education in India and South Asia, Essay II , ICT in School Education (Primary and Secondary), by Info dev and Price White Coopers (PWC) (2010) .

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