

Information and Communication Technologies (ICT) – Impact on education : Opportunities and Challenges in current scenario

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Abstract

In today's developing countries, globalization and technological changes has given a different phase to the economy, whereby the society are collectively facing the concern of the competition in various sectors, which also includes the education system . In the global economy, technologies play a vital role due to which the importance of ICT- Information and Communication Technologies has a continual growth universally. It is generally said that ICT in education means “Teaching and Learning with ICT” because “Tech gives learners a voice”. The evolution or the appearance of ICT has several implications for the educational institutions, where it has fueled up heavy information and knowledge. As various challenges are arising in education system, ICT can empower teachers and learners making it compelling for their literature, researchers, schoolings, trainings and achievements. ICT in education which includes various technologies like computers, internet, televisions, and the whole digital world have become very powerful tools in the education system which helps in expanding & strengthening the educational quality. However, the usage and impact of ICT on the learners, teachers, researchers have its own pros & cons, in other words ICT faces opportunities & challenges globally. There is a vast difference in comparison of traditional practices of technologies in education & modern technologies where it includes various methods and techniques in education like audios, visuals, e-learning, e-books, multimedia, etc. ICT in education gives a standard quality in gaining different skills and knowledge. This research paper is a study on ICT- Information and Communication Technologies in education which helps to figure out and highlight the impact, its opportunities and challenges in comparison to traditional and current scenario of education system. The researcher has used qualitative method of research through secondary data available from various sources. Further after content analysis the researcher will provide suggestions to overcome the challenges and how to enhance the use of ICT.

Key Words – ICT, Education, Opportunities, Challenges.

Introduction

ICT stands for Information and Communication Technology.

Information refers to various knowledge obtained from differing sources like reading, research, study and many more ways. Communication refers to an act of transmitting information from one source to another. Technology means the application of scientific knowledge for practical purposes in all factors. Information and Communication Technology (ICT) have extended to wider scope where education is not an exception. ICT in education which includes various technologies like computers, internet, televisions, and the whole digital world have become very powerful tools in the education system which helps in expanding & strengthening the educational quality. ICT can even make a powerful contribution to teaching and learning at all stages and across all areas of the curriculum. ICT should have a great impact on all education institutions and in the teaching that takes place there."The very expression Information and Communication Technology has lots of ideas in it. It is not just using gadgets. The point of convergence is on what is being transacted through this medium.

Literature Review:

The below review of literature has been covered few of the following aspects of ICTs in education and teaching – learning assessment for learners and educators

Papert (1980): The study focused on 'Children, computer and powerful idea'. The study also revealed the role of digital media in enabling the children to learn better with a constructivist learning environment.

Davis (1993): This study states that 'Tools for learning' it believes that there is no single magical formula for motivating students. Teacher's uses various teaching methods which goes beyond the conventional classes that gain the learners' attention, motivate students to spend more time on learning activities with greater concentration, and engage them through production work.

According to **Chris Dede (2005):** Its states that "Rapid advances in information technology are reshaping the learning and teaching styles of many students and teachers in education system" This advances in technology which create new opportunities for higher education; emerging

Pelgrum and Voojt (2009): suggested the use of ICT is not about introducing a new tool in education, but the integration of ICT in educational practice has the potential to facilitate new

pedagogical approaches and learner- centered educational practices. It gives a positive effects of ICT used in education.

Brosseuk (1998): The study was conducted on 'Using a data-base in the lower primary Classrooms'. It gave a clear view that when student use data bases and spread sheets it leads to a real life context enhanced the teaching and learning in an enjoyable and practical way, and developed students' general thinking processes and problem solving skills. Students were enthusiastic and fascinated when using the electronic tools to solve problems.

Objectives of the Study:

- 1) To study the role & opportunities of ICTs in education.
- 2) To understand and analyze the challenges of ICTs in education
- 3) To provide suggestions in overcoming the challenges of ICT in education.

Scope of study:

The Researcher focuses majorly on technology-supported learning environments, they can engage students in learning process and can have a positive impact on student outcomes in higher education because that is the underlying driver of this study. The discussions focus on ICT's impact on higher education students' characteristics of ICT's benefits to students in their learning process and also on teachers and their teaching methods and associated challenges. Further, this section addresses the research objective, "to understand the strengths of ICT in higher education context and the rationale of using In this research paper the researcher had a qualitative way of study about the ICT in Teaching and learning assessment (education). The impact of the ICT on learning can be approached in different ways.

Methodology:

Sources of data collection

Secondary data: It majorly consists the information collected from various sources like books, websites, journals etc.

This paper will discuss the questions concerning about ICT and education. Here secondary data collections were done. The main research question concerned the challenges of ICTs in education. To know more about this future, several scenarios on future developments in education have been studied. The researcher

has first studied the ICT and its impact in education as well as teaching and learning assessment and its benefits through Literature review.

Significance of ICT in Teaching-Learning Assessment:

The ICT has changed the education scenario in the last few decades by emerging as one of the most efficient tools used in the learning process, by Teachers, learners, and researchers as well. Looking for matter beyond the text books is no longer a challenge with respect to time and resources anymore. Integration of ICT has an important significance in the learning attitude of teaching, creativity, construction of knowledge, problems solving, skill development, also important for making teaching and learning strategies, also in research work.

The Uses of ICTs

Many variable uses of ICT in education are possible. These range from using ICT as tools to support conventional ways of teaching to fully ICT-enabled courses that brings about a completely different way of teaching. Below is some evidence of the impact of ICT on educational achievements and on the way ICT is used in education. The past few researcher's view that the findings of the study gives an immeasurable benefits to students, parents, policy makers, planners of educational program, researchers, instructors and the society in general. It helps to cultivate productive habit of this system. Education policymakers and planners must first of all be clear about what educational outcomes are being targeted. These broad goals should guide the choice of technologies to be used and their methods of use. The potential of each technology varies according to how it is used. There are different ways of technology to be used in education like presentation, demonstration, practice, interaction, and collaboration. Each of the different tools of ICTs are print, audio/video, radio and TV broadcasts, computers and many more technologies brings out great impact of these communication technologies on education. Internet is widely used for presentation, demonstration, preparation. 90% of the schools, colleges, universities now provide the facilities of various technologies or smart class in the field of education. Students and teachers both are becoming more confident and the use of technology is helping our teaching field to a great extent. Education systems are getting developed and the results have improvement in post ICT.

The impact of ICT in education and teaching and learning assessment

ICT is evolving technologies and their effects are difficult to isolate from their environment. Today's generations seems to have a drastic impact on an individual's intellectual development. As a result, it is likely that the rapid societal and technological changes can have a huge impact on how students think and learn. Currently the social networking applications such as blogs, wikis, and twitter and many such social

sites which are even unknown and is being taken up by many people, especially by the youth. Classrooms of any institutions need to reflect what goes on around outside. Technology interacts with many variables, student preparation and motivation, how the student or instructor uses technology, and how well the environment supports learning.... Instead of asking what impact technology has on student learning; ask how one can incorporate the best-known principles about teaching and learning, using technology as a tool for innovation. Now- a- days schools, colleges tries to bridge the gap between classrooms and real-world scenarios, which has actually become one of prominent activity for the teachers in education sectors. With this, ICT has motivated the students, academicians, researchers, teachers with their creativities, development of higher order critical thinking skills and problem solving abilities facilitate the development of deeper and richer knowledge structures.

One of study by the researcher at the University of Maryland on the impact of communication and technologies like cell phones, social media and the Internet on American college students, 200 students were asked to give up all media for one full day (The New York Times, April 23, 2010). The above study found that after 24 hours many of the students showed signs of withdrawal, craving and anxiety along with an inability to function well without their media and social links, which connects also, connects to education as well as other activities. This gives a clear view about the impact of technologies on today's youth. Although this action research reveals that ICTs can empower learners as well as teachers and researchers, which provide a learning environment that helps to address different learning styles, and foster the development of '21st century skills'. Overall ICT has been shown to positively influence on students learning when students explore technology as well as in teachers- learning assessment. Students, teachers, academicians, researchers can use ICTs, irrespective of any locations more frequently and confidently. It gives impact on both effectiveness and engagement

Challenges of ICT in education

There are enormous challenges in education system for the learners as well as the teachers to accept the modern approach of ICT. Due to the impact of technology the students will not be satisfied with the traditional transmission approach of the lecture in transmitting the knowledge In some studies there is a discrepancy between the different techniques used to assess the effects of ICT on student achievement and on how ICT is practically implemented in the classrooms. For instance, few studies have looked only for improvement in traditional teaching and learning processes, and in comprehensive knowledge, instead of looking for the new processes and higher order thinking skills related to the introduction of ICTs. Students who uses ICTs on regular basis in their learning process, but still are evaluated using traditional methods such as pen and paper, may show low to significant improvement in their achievement.

The direct link between ICT use and student's study habit and academic performance has been the major focus of extensive literature during the last two decades. Some of them help students with their learning by improving the communication between them and the instructors and on the other hand, in support to these, some students may use ICT to increase their leisure time and have less time to study, online gaming and increased communication channels do not necessarily mean increased achievement.

After considering all the aspects of ICTs in education, it's not only siding the challenges in the methods adaptations for learners and teachers, researchers and attitudes towards it, but also in implementing of enabled education in rural areas.

As ICT has the potential to improve education system of a country to a great extent, still it is not the case in the developing countries. There are multiple issues and challenges confronting the implementation of ICTs in educational institutions especially rural face the implementation of ICTs, it has its own internal and external barriers where it's one of the major challenge is lack of

Trained teachers, cultures, poor attitude and beliefs, unavailability of latest hardware and updated software which determines the inefficiency in usage of technologies, unreliability of equipment.

In one of the research, **Bates (1997)** reported that there are lack of training and skills development, whereas it has become an obstacle to ICT use in institutions of higher learning. Some of the challenges which an institution faced are insufficient number of computers, lack of free time for learning and lack of classroom time for students to use computers, even lack of personal confidence and insufficient access to ICT resources for majority of teachers' student's researchers.

Findings were as follows

- From the study, it was found that complementary relationship exists between technology and constructivism. To create a constructivist framework, the technology has to be integrated with the classroom learning, the implementation of each one benefiting the other.
- In ICT with the help of various tools like colorful and attractive diagrams and graphics, charts, interesting and illustrative animations, along with appropriate sound effects, ICT provides multisensory stimulations and real-world experiences
- Due to ICT in education, new approach of pedagogical which refers to the interactions between teachers, students, and the learning environment and the learning tasks that include how teachers and learners relate together as well as the instructional and systematic approaches are being implemented in the classroom. This approach uses problem-based learning provides vast opportunities for educators to employ ICT tools to support and enhance teaching and learning.
- Now-a-days classroom environment is moved from teacher-centered to student-centered to blend learning approach which makes learners more responsive, ICT usage are inclusive of smart boards,

virtual learning, computers, the Internet, and electronic delivery systems such as audios, PDAs, televisions, and projectors among others.

- ICT is growing rapidly not only in developed countries but also in developing countries like rural areas where technologies are being used at every level in respect of education, required training are being provided to learners and educators, researchers as well.

Conclusion:

Education is basically termed as one of the most and basic requirements on which great nations are built. It is a kind of an investment that takes its time to pay dividends but, generates the highest returns when compared to any other avenues where resources can be committed. In today's globalized era and modern generation of ICT, the whole society are enlightened to accept new ideas, show creativity, develop critical thinking and above all, enable themselves to absorb surrounding information for informed decision-making at any later stage in life, have the ability to adopt various technologies, in regard to this computer studies or ICT becomes immensely important in day-to-day basis.

It is very crucial and can be even impossible to figure out the future learning environments that are not supported, by Information and Communication Technologies (ICT) in either of the ways.

When looking at the current scenario the spreading of ICT and its uses more widely done in modern societies, especially by the young the so-called digital generation. Will affect on the complete learning process today and in the future. It really bridges the gap between classrooms and real-world scenarios. It has become one of the most substantial driving force for promoting economic growth in the economy and also in other aspects.

Suggestions

- ICTs in education should be more implemented in a very constructive manner where it becomes easy for the learners and teachers to clear the obstacles where an institution faces due to lack of development.
- Government should make strategies to support ICTs in education and teaching-learning assessment especially for developing countries and rural areas.
- New theories should be invented for teaching-learning process in digital era.
- In order to bridge the gap, it is necessary to focus on improving four aspects of ICT - access, usage, economic impact and social impact.
- There should be proper resources for mobilization of funds for the upliftment of ICT education in rural areas.

Scope for Further Research

The study also has the potential to investigate the aspects of modernized technology to fit the digital world. The study will have an advantage to explore the various learning phases of ICT related to education. The technical and educational aspects can be further researched to overcome the challenges faced due to the implementation of ICT.

Limitations

The study has been conducted by using secondary data sources. The findings developed through the study might reveal variations due to the different methods of ICT in various phases of learning and teaching.

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