

Role of ICT in Quality Enhancement of Higher Education

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Abstract—We are evolving in a digital world and rapid widespread of technology is transforming our daily life processes. From past few decades, ICT is emerging as a pillar to country's economy. ICT stands for Information and Communication Technology. Basically, it involves the technologies, which are accessible to provide information via utilizing telecommunications. To some extent, it sounds almost similar to information technology, but its main emphasis lies on communication technology. Therefore, it includes cellular phones, wireless networks, internet and other communication sources. From past few years, ICT has revolutionized the communication channels and hence, benefitted the society. For an instance, nowadays, individuals have become able to communicate across the globe in real-time. In modern world, social networking websites such as WhatsApp, Twitter, and Facebook are some of the common examples of using instant messaging and video-conferencing[1].

Keywords-Collaborative-learning, Information and Communication Technology (ICT), Economy, Distance-learning, Remote-learning, E-learning,

I. RESEARCH METHODOLOGY

This study is based upon Exploratory Research Technique. The secondary data is collected from several credited sources such as international journals, reports, published articles and surveys. Collected data is then analysed to reach the conclusion.

II. INTRODUCTION

Education is the basic foundation of a country where teaching and training are seen as a key for change of individual for national advancement. A country is said to be esteemed when a noticeable number of the natives have quality training and education. Quality instruction incorporates: Learners who well-sustain and prepare to learn and grow in learning by their families and networks. A content that is reflected in important educational plans and materials for the obtaining of fundamental abilities, particularly in the zones of proficiency, numeracy and abilities forever, and information is achieved through instructors who use focused educating approaches. Furthermore, skilful evaluation to encourage learning and diminish variations, and results that envelop learning, aptitudes and frames of mind, and are connected to national objectives. In numerous nations, interest for college far surpasses supply and Governments and organizations are turning increasingly more to the utilization of ICTs to connect the entrance hole. It is too soon to state whether the job of ICTs in the instructing capacity of college is really transformative, or regardless of whether it is just a

repackaging of past instructional method. ICTs are a conceivably useful asset for broadening instructive chances, both formal and non-formal, bunches generally rejected from training because of social or social reasons, for example, ethnic minorities, young ladies and ladies, people with handicaps, and the older, just as all other people who for reasons of expense or on the other hand as a result of time limitations cannot select on grounds. Adequacy, cost, value, and maintainability are four wide interlaced issues which must be tended to when considering the general effect of the utilization of ICTs in improving quality training[9]. Information and communication technology plays a significant role in economy by attaining socio-economic goals in variety of domains such as healthcare, education & employment, and boosting up various private and public services. Due to this reason, nations are focusing on growth of ICT to increase their economic productivity. Furthermore, role of ICT in education is now considered as having a multiplier impact on economy by reducing the costs (utilizing e-technology) across national education system. Also, use of ICT in education will make it possible to learn anytime from anywhere in real time and access the remote learning resources across the globe, and thereby addressing some major issues. Main objective of ICT is to bring equity and access of education to all by creating and managing an efficient education system. This major transformation is occurring all over the world due to rapid technological advancements each day[2]. ICT may significantly help in improving the quality of education by helping the learners to work in information age. Besides, it may facilitate the independent learning. This paper will mainly discuss the role of ICT in education, content development and management aspect, different categories of ICT in education, benefits and challenges associated. At the same time, futuristic scope of ICT in education is also discussed in this paper.

III. ROLE OF ICT IN CONTENT DEVELOPMENT AND MANAGEMENT

For successful implementation of ICT in education sector, there is utmost need to create excellent approaches in order to achieve desired goals. Explicit activities have been taken to make advancements by several organizations such as the SakshatPortal of Govt. (GOI), the National Technology Improvement Program (NPTEL) and Multimedia Education Resources (MERLOT) for learning and on the web training. We have likewise stepped forward to guarantee straight forwardness in the training framework through ICT. It likewise made a stride further from behind by offering a

particular machine that denoted the nearness of the educator at the school. The biometric participation framework truly encourages educators to go to class, where going to is constantly a hot issue. The legislature of Delhi was a pioneer in the utilization of ICT to the training framework. Service of Delhi government has numerous schools under the managerial authority that has built up a far reaching, and powerful electronic GIS Based Management Information System (MIS). Representative Attendance Report likewise encourages target reviews, in light of the fact that the participation at all schools is appeared for the reasonableness of departmental staff. To all individuals through a straightforward framework, including residents, schools and different branches, workplaces, provincial workplaces and home office are utilizing the web-empowered programming that enables you to share data. Every one of those included - understudies, instructors and chairmen - Information about can be accessed online by means of the site of observers. This incorporates data about confirmation, marking, participation of educators, online activities, and also, installment receipts. Participation of the workers can be kept in touch with the organization on the web, data about the execution of huge declarations, distinctive government organizations can undoubtedly be applied and can be imparted to different divisions. . This sort of activity offers straightforwardness, a significant necessity for individuals in the present society. While there might be more instances of such activities, there is a requirement for time to copy pertinent interoperable tasks that significantly affect society. Customary open and separation learning frameworks utilize an assortment of mechanical alternatives for example, EDUSAT and other TV and radio channels. Every one of these alternatives use ICT. The library mechanization, office computerization, records the executives, understudy following, asset arranging, including the current ICT foundation of the web assets and improve productivity. Simultaneously you can profit by investment funds in costs, time and exertion[8].

IV. IMPACT OF ICT ON LEARNING ENVIRONMENT

Undoubtedly, ICT has created a paradigm shift in pedagogy (methods and practice of teaching) and education content. ICT focused education mainly promotes the lifelong learning for students and improves their knowledge skills by encouraging them to explore and discover, instead of just learn and remember. Also, it opens the door of enabling learner-centered pedagogy instead of traditional teacher-centered pedagogy. This not only helps the learners to work better as compared to past, in fact, it also allows teachers to modify their teaching or content-delivery options. ICT-supported learning catalyzes the effective learning process through collaborative, evaluative, creative and integrative learning approach. Therefore, due to this reason, it can be sometimes considered as student-directed learning, whereas conventional methods were more teacher-centric. This is so because, previously, the activities were mostly prescribed by the teachers. Whereas, ICT allows learners to direct their study related activities themselves^[3].

V. E-LEARNING, BLENDED LEARNING AND DISTANCE LEARNING

Under the idea of ICT, education can be mainly categorized into e-learning, blended learning and distance learning.

E-learning is often termed as electronic learning and computer enhanced learning. Most of the times, it is coupled with advanced learning technology dealing with multimedia and network technology. It helps in overcoming several challenges arising during traditional methods of learning. For example, it saves a lot of time which otherwise may get wasted in travelling. Also, it enables increased intercommunication with high participation. It involves several online repositories, which creates a digital identity for all the stakeholders involved. E-learning banishes geographical barriers by enhancing the international dimensions.

As the name indicates, blended learning involves the combination of several methods of teaching such as traditional methods (face to face interaction), and online classes.

Distance learning is also known as open learning. It enables students to manage their study-hours from home. They can access their content online and can communicate with instructors and their class-mates through computer-based sources of communication. Some other important components of distance learning are digital libraries.

VI. BENEFITS, CHALLENGES AND RISKS OF ICT IN EDUCATION

Internet and communication devices are the world of endless possibilities. Utilizing online resources in education, students may become independent learners. At the same time, instructors may also use this platform to make their content delivery more interesting. In the global platform, students may have the chance to get aware about different opportunities across the globe, via network communication. Furthermore, e-learning offers eco-friendly benefits too, because computers will reduce the usage of books and notebooks to a great extent. Hence, it will help in minimising deforestation. Besides, ICT may act as a critical success component in lives of disabled students because it offers distance learning. Due to this, they can learn from their homes. Students will no longer remain limited to borders across the countries because ICT offers equal platform for all. This may also help in learning different languages by using communication technologies because several websites provide translation tools. New methods incorporated by teachers to make their students understand better holds huge potential in achieving effective learning process[4].

It clearly demonstrates that ICT is beneficial for students as well as for teachers. But, it is to be mentioned explicitly that governments are also impacted by the use of ICT in education because it raises the cost-effectiveness of education training system.

Although ICT offers great benefits in education, but at the same time, some challenges are also associated with this. Information and communication technology is still in its early stage in teaching. One of the prime challenge arises for

developing nations because as compared to developed countries, installing e-learning usually has high opportunity cost, hence may be an expensive investment. On the other hand, other investments such as buildings etc. cost less. Similarly, there are some mistakes identified in incorporating ICT into teaching. Firstly, installation of learning technologies, without assessing student needs. Secondly, customization of the content, making faculty & staff about using different technologies are also some challenges to overcome. At the end, failure to produce high quality content having poor instructional design may also act as a barrier. Along with this, some potential risks to be considered are shifting the focus from providing quality education to develop ICT skills in students. Further, it may act as a barrier by creating a digital divide within the classroom because some of the students may not be tech-savvy. Also, it may lead to decrease in face to face interaction between students and teachers, which may ultimately impact the bonding between both. Apart from this, providing training to all the stakeholders involved, plagiarism and high cost software & hardware are some other risks which cannot be ignored[5].

VII. FUTURISTIC SCOPE

With the progression of time, ICT is becoming an important tool of today's education environment. In the nearest future, increased number of educational institutes, teachers and students are expected to embrace information and communication technology, which ultimately may result in an optimized teaching & learning procedures. Similarly, collaborative learning may get increase due to improvement in technologies. It is also mentioned in researches that traditional methods of teaching cannot be left behind easily. Therefore, ICT is assumed to support the conventional educational system by making it more adaptive in the learning environment. Different educational institutes will use various resources to incorporate ICT in their organization, which will depend upon the advanced technologies to transform their training an education system. To maintain a seamless implementation of ICT in education, various approaches are suggested by the researchers, such as some researchers put emphasis on developing a series of guidelines for effective decision making in order to guide towards the effective actions required to be taken during the implementation process[6]. The thoughts that have been talked about in this paper propose that while ICTs might not have had a huge effect to date, their utilization will develop to assume a noteworthy growth in numerous parts of the design, development and conveyance of instructive projects in the coming years. The different impacts that have been examined give instances of a specialist that has the ability to impact training at all levels and consequently to be an operator supporting and empowering change. When the fate of instruction is considered along these lines, it is fascinating to estimate among the partners, for whom the change will be the best. While, establishments are contemplating how they will

be affected in years to come, whatever the results, the recipients of the movement and change will be the understudies. This would appear to be the result everybody would need to see. This paper has looked to investigate the significance of ICT as well as its progress into the 21st century. In specific, the paper has contended that ICTs have affected on instructive practices in very little ways, yet, that the effect will develop significantly in years to come and that ICT will turn into a solid specialist for change among numerous instructive practices. Extrapolating current exercises and practices, the proceeded with use and advancement of ICTs inside in higher education will have a solid effect about what, how, when and where is learned and also who is teaching. The consequences of this movement is that we should see checked upgrades in numerous zones of instructive undertaking. Learning ought to turn out to be increasingly applicable to partners' needs, learning results ought to turn out to be progressively intentional and focused on, and learning openings should decent variety in what is discovered and who is learning. Simultaneously, nature of projects as estimated by readiness for reason should keep on developing as partner gatherings discover the contributions coordinated to their needs and expectations. To guarantee that, the chances and points of interest are acknowledged and exercises in various organizations and areas can educate and control others without the consistent requirement for re-creation of the wheel. Hence, ICT holds huge potential to revolutionize the education system in upcoming years.

VIII. CONCLUSION

Undoubtedly, ICT is ready to transform the traditional education and teaching methods, which will be mainly focused on learner-centered approaches. ICT may not only impact the school education, but at the same time, it may potentially improve the learning outcomes. Although, several resources are available for educational institutes to successfully implement ICT. Further, it may build new models of communication by breaching the conventional classroom environment. Within increasingly changing environment, ICT is contributing in building the foundation of more adaptive and knowledge-based society. However, successful ICT incorporation in education requires teachers to be equipped with efficient skillset to direct their teaching strategies. Associated with numerous benefits, such as improved education system, some challenges are also needed to be addressed. Resistance to change (in associated stakeholders) and poorly trained staff due to lack of technical skills may also act as a barrier in the path of efficient ICT implementation within the education system.

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