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Research Article

A study on role of ICT as a catalyst in the growth of Higher Education in India

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Abstract

Educational institutions across the world are passing through a transformation period. To meet out the social and commercial expectation of stakeholder's government took several initiatives to strengthen and fulfill the demand of technology based, futuristic and carrier-oriented education and have invested many dollars to adopt ICT within the education system during the last 20 years. Information and communication technology (ICT) has become a crucial source of innovation and improvement of efficiency for several sectors across the world. In the education sector, particularly, the appliance of ICT has become a critical a part of the training process for university students both outside and inside the classroom setting. This paper addresses the role and benefits of ICTs in various aspects of higher education in the present scenario ad defining the role of ICT as a catalyst in the growth of higher education. Further this paper critically analyzes some previous researches related to ICT in the Indian Education System. This paper has also discussed the initiatives taken by the government to implement ICT in higher education and providing them quality education. We further came up with recommendations to address the different issues of ICT.

Keywords: ICT, Higher Education, Catalyst, Innovation and Technology

Introduction

Education has vital role in building the society. For the well being of individual and the society It is one of the most important needs. There are many ways to increase the learner's knowledge, and technology is the most effective way (saravanakumar 2017). Role of ICT in higher education is for improving quality, enhancing operational efficiency and widening access all functions in higher education and to create new dynamics both at micro and macro levels (Annapurna 2012). ICT has changed many aspects of the lives and leads to rethink the roles of administrators, teachers, educational institution and vision for the future. ICT has witnessed newest challenges for quality education (jazeel 2014) among learners. Information communication technology tools such as multimedia based soft ware and sound, colorful moving images enhance motivation among students in learning process (jonnasen 1998). The introduction of the Wi-Fi system too has led to the growth of hi-tech education system, where accessibility and accountability of subject matter is made readily available to the students. The students can now study and comprehend the related information at their own convenient time (sukanta 2012).

ICT and Higher Education

The application of ICTs as a tool for effective enhancement of learning, teaching and education management covers the whole spectrum of education from infancy development, primary, secondary, tertiary, basic education and further education and training. Integrating ICT in teaching and learning is high on the tutorial reform agenda. Often ICT is seen as indispensable tool to completely participate within the knowledge society. ICTs got to be seen as "an essential aspect of teaching's cultural toolkit within the twenty-first century, affording new and transformative models of development that reach the character and reach of teacher learning wherever it takes place" (sukanta, 2012). ICT enables an educator to succeed in out

widely efficiently and effectively. It helps teachers and institutions to be more modem and dynamic. Eventually, the utilization of ICT will enhance the training experiences of scholars. It also helps for building a successful career, during a technology savvy world. The function of ICT in education is inevitable. One of the great benefits of ICTs in teaching is that they can improve quality and quantity of educational provision.

The increasing use of data and communication technologies (ICTs) has brought changes to quality enhancement in the higher education system. ICT change the concept of learning within the four walls as the introduction of technology learning breaks the boundaries of universities and colleges and offers the learners can learn irrespective of place and time. The change in professional practice during which teachers are now enabled to style to include the more complex world projects by using ICT tools and resources and develops new educational approaches.
During the last decade, higher education has gained importance in India's changing policy landscape as the government realizes that India's strength lies in education. The gap between demand and provide of upper education has necessitated the governments and institutions to formulate the policies for the higher use of ICT. And, in order to bridge the gap, it is necessary to evolve the cooperation between the public and private sectors for the
successful implementation of ICT in higher education.

The evolution of ICT into universities clearly changes the way education is conducted. Not only is it possible to work with distance learning and achieve a closer collaboration between different universities, but also paving the way for a new pedagogical approach where there is unparallel ability to spread knowledge and disseminate information. The pace of change caused by new technologies has had a big effect on the way people live, work and play worldwide.

Major ICT Initiatives in Higher Education
Various initiatives within the recent past portrayed the many roles that ICT plays within the realm of upper education development. Several projects have reduced the prices, and it also has increased transparency. India has haunted major initiatives in terms of content delivery and furthering education through Information and Communication technology. For example Gyan Darshan was launched in 2000 in broadcast educational programs for college kids, university students and adults. Similarly Gyan Vani was another such important step with broadscast programs contributed by institution like IGNOU and IITs .Under the UGC country wise classroom intiative, education schemes are broadcast on Gyan Darshan and Doordarshan national channel a day. E-Gyankosh which aims at preserving digital learning resources may be a knowledge repository launched by IGNOU in 2005.Almost 95% of IGNOU's printed material has been digitized by uploaded on the repository. The national programme for technology enhanced learning (NPTEL) launched in 2001 is another joint initiative of IITS and IISC which education through technology. Sristi, the society for research and initiatives for sustainable technologies and institutions is facilitating the utilization of ICT for strengthening the capacity of grass roots inventors, innovations and entrepreneurs engaged in conserving bio diversity and developing eco- friendly solutions to the local problems

Literature Review

- **Lynne & Nigel (2005)** proposed that all pupils will be able to realize their potential ensuring that the experience gained through learning using ICT is more suitable and precise. In this respect the existing facilities are to be reinvestigated and new strategies are to be formulated to modify them. Although, the overall capability of ICT can provide specialized educational tools to form learning simpler among the pupils, but the precise technology concerned to include such tools are not under the purview of ICT. ICT has enormous potential for skill development among wider range of pupils.
- **Andersson S. B. (2006)** recommended that another method called "crossing points imagining" is changing the situation for educating learning procedure and information coordinated effort between peers. The importance of a systematized ICT on scholarly advancement of the instructors can change their jobs. Present day encouraging experts are particularly sharp about the use of different devices and systems of ICT in the instructing learning process.

- **Machin S. et. al (2007)** explained the cause-effect relationship between ICT investment and academic performance in his study conducted within the primary schools. In contrast to his previous literature surveys that could not find any benefit among the students and their related contribution to the firms, this

study shows a positive effect of ICT investment towards academic performance of the students that enhances the firm's productivity.

- **Ozdmemir and Abrevaya (2007)** asserted that ICT is reducing the value per students and expanding the enrolments and makes the provisions for employers and supports enduring learners.

- **Nisar, Munir & Shafqat (2011)** led an investigation to know the impingement of ICT in scholastic arrangement of Pakistan and the results uncovered that among the four variables – accessibility, use, information and viability of ICT; accessibility and use of ICT have higher effect in improving information and learning aptitudes of understudies. This shows change in scholarly proficiency and in addition commitment for the scholastic framework to gadget new approaches relating to the utilization and advantages of ICT.

- **Sarkar (2012)** in his examination featured the job of ICT in advanced education in India in the 21st century. The investigation uncovers that the organization of ICT in scholastics is expanding at a quicker pace crosswise over different territories of the state. One of the often-happening issues of utilizing ICT in scholastics is to organize the decision of innovation as opposed to instructive necessities. Different learning openings are often opened by using ICT to upgrade the character of coaching with enhanced showing techniques and better learning results. Utilization of ICT in advanced education may prompt scholastic improvement and also financial advancement of the nation.

- **Meenakshi (2013)** recommended that if instructive establishments are to completely misuse the capability of ICT as instructive devices, spotlight ought to be given on both instructive improvement and in addition proficient advancement of the trainer as per his scholarly administrations. The paper uncovered that every one among those instructors who aren't well conversant in PCs and other innovation, communicated unmistakable fascination in experiencing and preparing for an equivalent and they are often did to form full use of accessible assets. Notwithstanding the above both regulatory and specialized help within the instructive establishment are required for full working of the framework involving PCs and different advancements to form ICT more successful.

- **Ellis and Loveless (2013)** indicate that higher education pedagogy can neither be isolated from academic achievement nor from the teaching process and innovation. ,E- study affirms that the potential role of information and communication technology in higher education cannot be overlooked.

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- **Chan et al. (2013)** in another study make an identical observation and assign great significance to the critical function of ICT in democratizing the university education and meeting new and dynamic demands of graduate students.

- **Sari and Mahmutoglu (2013)** observe that in order to bring a change in teaching methodology in a university, a paradigm shift is required that would recommend adoption of student-centered approaches. New methodology, consistent with the authors, should aim at making the scholar a lively element within the learning process, instead of passive through an adequate and effective guidance from the tutorial team.

- **Iniesta-Bonillo et al. (2013)** find out that the use of information and communication technology is significant in placing students in an active position and in enhancing the effectiveness and efficiency of the tutorial support.

- **Lalitbhushan S Waghmare, et-al (2014)** studied "Role of Information and communication technology in Higher education: learner's perspective in rural medical schools". They concluded that there is a need to foresee the role of technology in education and take appropriate measures to equip the stakeholders for adequate and optimum application of an equivalent.

- **Uttam kr Pegu (2014)** studied "Information and communication technology in higher education in India: challenges and opportunities". The study revealed that ICT enabled education will ultimately cause the democratization of education and it's the potential for transforming education in India.

- **Mahisa and Anju (2014)** studied "The role of ICT in higher education in India". The study revealed that ICT play vital role as a robust agent for change among many educational practices.

- **Saravanakumar (2018)** use of ICT has fundamentally changed the practices and procedures of nearly all forms of endeavor within the all forms of educational institutions for providing quality education. Especially ICT have a greater place within the field of Education within the forthcoming years. Therefore, it's adoptable for each situation within the classroom environment to making the motivation among the learners.

Objective

- To study the role of information and communication technology (ICT) in promoting higher education.

Research Methodology

The present study is an empirical study based on Secondary data. The secondary data have been collected from various websites, published books, Journals, Periodicals etc. after extensive literature survey and analyzing the research work of eminent researchers and thinkers, it is systematically arranged, and appropriate analysis is carried out to justify the role and impact of ICT. The analysis has been done in contextual setting and focuses on the evaluation of ICT strategies and theories which were collected from different literature of previous research work.

Findings

- The study found that ICT have played a catalyst role in promoting the education. It has casted profound impact on the process of learning by offering new opportunities to learners and educators.

- The study found that ICT has enabled and improved learning at all levels, in all places and for all people of all backgrounds.

- The study found that ICT has transformed education from traditional to knowledge economy and fostered the professional learning by supporting educators and making them catalyst to serve the underserved. It has made educators more creative and collaborative problem solvers and adoptive and socially aware experts by fluently using innovative technology.
- The study found that due to growing competition in education sector and market demand, it is showing progress and educational institutions are gradually adopting ICTs into classroom, learning setting, for developing efficiencies and flexibility in terms of delivery of information's and to provide support for customized educational programs to meet the need of individuals learners.

- The future of education is in the hand of educational technology and we must support, coordinate and integrate our efforts to build progressive techno civilization.

- The way ICT is utilized during the time spent on advanced education framework can be a key achievement factor for development, instructing and change of learning forms which can inspire the educators, chairmen and understudies.

- Teaching with educational ICT can enhance student's active learning only through joint, coherent and multi-level efforts.

- Rapid changes in technologies are indicating that the role of educational ICT in future will grow tremendously in the education.

Recommendations

1. Adequate funding is important for tertiary education generally and development of ICT especially. To this end, government should increase funding for the whole educational sector.

2. Additionally to improved funding by the govt and revenue generation drives by individual institutions, government must implement policies which can draw the private sector into ICT development. Government should work with the private sector and civil society to make sure affordable and sustainable access to ICT infrastructure.

3. There should be frequent workshops and training programs to train the teaching and non-teaching staff of higher learning institutions in order to make them competent to handle and operate the ICT infrastructure and services.

4. There should be clear cut instructions from the concerned authority regarding the validity and recognition of online degree courses being offered by institutions across India.

5. Adequate funds must be provided to initiate, develop, promote, review and implement ICT policies in the educational sector to bring about an improvement on ICT utilization.

6 Keeping nation interest in view the carried-out study recommends that educational institutions must adopt technology for its collective growth, but its implementation must follow scholarly approach. It must focus on training teachers in advance skills and introducing creative and innovative pedagogies, developing ICT infrastructure and establishing institutional network, improvising collective standard of education by minimizing the digital gap and in quality of education between rural and urban populace.

7 Objectivity of ICT must be to foster self-paced, self-assessed and self-directed learning and developing futuristic policies for academic growth and social equity.

8 There should be frequent workshops and training programs to train the teaching and non-teaching staff of higher learning institutions in order to make them competent to handle and operate the ICT infrastructure and services.

Conclusion

Higher education systems have grown exponentially within the last five decades to satisfy the stress of quality education for all. This aspect has further gained momentum thanks to swift advancements in Information and Communication Technology (ICT). Information and Communication Technology has no doubt brought about tremendous change in education and act as catalyst in the growth of higher education, but we are yet to achieve the desired level of IT adoption in education within the country. ICT enabled education will ultimately cause the democratization of education and it's the potential for transforming education in India.

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