Uses of ICT in Higher Education

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Abstract

Information and communication technology (I.C.T.) is a part of technology. ICT and its various components make our daily life easier and scientific. It has become commonplace entities in every aspect of our life. Across the last twenty (20) years, technology has been changed our mindset and lifestyle rapidly. Education is a part of society and extensively effected by the use of technology and its components very high. Information and Communication Technology enhance the education quality in high degree of personal contact with learners. The use of ICT in Higher Education lends itself to more student-centered learning setting. The teaching-learning process, students' motivation, research and scholastic performance of all the angel of the Higher Education deals with the use of Information and communication technologies various components. In this paper, trying to discuss thoroughly about the uses of ICTs in higher education system. Effective use of ICT for higher education, along with ICT use in teaching and teaching-learning process; enhancing intellectual development and value education; vocational guidance through ICT; enhancing learning environment; enhancing learning motivation in Higher Education; enhancing scholastic performance and research; use of ICT in evaluation process in higher education; proper use of leisure time through the use of ICT and enhancing distance education and online courses.
Keywords: *Information and Communication Technology (ICT), Higher Education*

1. Introduction:

Information and Communications Technology (ICT) are a diverse set of technological tools and resources used for creating, storing, managing and communicating information, and to support teaching and learning and research activities (Vajargah, Jahani & Azadmanesh, 2010)[1]. According to Daniels (2002)[2], ICTs have become, within a very short time, one of the basic building blocks of modern society. Many counties now regard understanding ICT and mastering the basic skills and concept of ICT as a part of the core of education, alongside reading, writing and numeracy. According to UNESCO (2002)[3], information and communication technology may be regarded as the combination of "informatics technology" with other related technologies, especially communication technology. The various kinds of ICT products available and having relevance to education, such as teleconferencing, email, audio conferencing, television lessons, radio broadcasts, interactive radio counseling, interactive voice response system audio cassettes and

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[1] Vajargah, K.F., Jahani, S. & Azadmanesh, N. (2010). Application of ICTS in Teaching and Learning at University Level: The Case of Shahid Beheshti University. *Turkish Online Journal of Educational Technology, 9*(2), 33-39. Retrieved on 26.01.2021 at 7.10 p.m. from https://files.eric.ed.gov/fulltext/EJ898000.pdf

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[3] UNESCO (2002). Information and Communication Technology in Education–A Curriculum for Schools and Programme for Teacher Development. Paris: UNESCO.

CD ROMs etc. have been used in education for different purposes (Sharma, 2003[4]; Sanyal,2001[5]; Bhattacharya and Sharma, 2007[6]). According to Dr. B. R. Ambedkar[7], (Bombay, Legislative Council Debate, 27 July 1927), "The university is a machinery whereby education facilities are provided to all those who are intellectually capable of using those facilities to be the best advantages but who can not avail themselves of those facilities for want of funds of for others handicaps in life. Through higher education the people can shape the behavior, minds and the social and human values of the student community. In this process the uses of ICT is playing more important role. All the areas or aspects of higher education is dependable on Information and Communication Technology (ICT). Here is in brief bellow –

2. Literature Review:

Reevs and Jonassen (1996)[8]: Researchers presented a strong rationale for the application of cognitive tools in education, describe a number of alternative approaches to using cognitive tools, and provided evidence that supports the uses of these cognitive tools. Researchers conduct a mini research and find that databases and spreadsheets have beneficial effect on the development of hogher-order thinking skills.

Long (2001)[9]: In this study researcher Long suggest that today's digital media is very helpful for visual education fore within communication. Multimedia part like visual, textual and indeed the multi-modal software are increase the learning ability among the students.

Yusuf (2005)[10]: The researcher conducted his research in Nigeria. The article was an analysing the Nigerian national policy for information technology. It reveals that the policy is inadequate to impact positively on the Nigerian education system, and that the philosophical frame of reference is market driven. The policy places little emphasis on the integration and infusion of ICT in the country's education system. Policy implications and suggestions are offered to ensure maximum use of ICT potentials in the Nigerian school system.

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[4] Sharma, R. (2003). Barriers in Using Technology for Education in Developing Countries, IEEE0-7803-7724-9103.Singapore schools', Computers & Education. 41(1). pp 49-63.

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[9] Long, S. (2001), "Multimedia in the art curriculum: Crossing boundaries". Journal of Art and Design Education. 20(3). pp 255-263.

[10] Yusuf, M. O. (2005). Information and communication technologies and education: Analyzing the Nigerian national policy for information technology. International Education Journal, 6(3), pp 316-321

New Media Consortium (2007)[11]: The core of the report describes six areas of emerging technology that impact in higher education. these are user created content, social networking, mobile phones, virtual worlds, the new scholarship and emerging forms of publication and massively multiplayer educational gaming. The focus of the Horizon Project centres on the applications of emerging technologies to teaching, learning, and creative expression, and the format of the Horizon Report reflects that focus. Each topic includes an overview to familiarize readers with the concept or technology at hand, a discussion of the particular relevance of the topic to those activities, and examples of how the technology is being or could be applied. Each description is followed by an annotated list of additional examples and readings which expand on the discussion in the Report.

Valasidou and Bousiou (2005)[12]: In this study researchers found that student of Pol. Sc. and Social Science were generally favorable to ICTs usage. No significant difference in students referring internet and email usage with regard to gender basis, but using computer makes difference in the study. Researchers recommended for the academic and admistrative faculty to motivate student to use ICT in order to support their studies.

National Curriculum Framework (2005)[13]: National Curriculum Framework (NCF) recommended to provide more direct access to multimedia equipment and information Communication Technology (ICT) and allowing them to mix and make their own production and to present their own experience, that could provide them with new opportunities to explore their own creative imagination. NCF give an active role of ET or ICT component rather than watching and listening in traditional way. NCF recommended NET based audio or video material, website, film, interactive, NET-enabled Computer etc. for acquiring knowledge and practice.

National Education Policy 2020: In National Education Policy (2020) briefly describe that The Digital India Campaign is helping to transform the entire nation into a digitally empowered society and knowledge economy. While education will play a critical role in this transformation, technology itself will play an important role. In the improvement of educational processes and outcome teacher and student both will be tech-savvy and entrepreneurs. New current technologies like artificial intelligence, machine learning, block chains, smart boards, hand held computing devices, adaptive testing for student development, and other forms of educational software and hardware etc. will not just use to learn the students, beyond they will conduct research both technological as well as educational fronts. NEP (2020) recommended that National Educational Technology Forum (NETF)[14], will be created to provide a platform for free exchange of ideas on the use of technology to enhance learning, assessment, administration, so

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[11] New Media Consortium (2007). Retrieved 25.01.2007 at 10.00 a.m. from https://library.educause.edu/-/media/files/library/2007/1/csd4781-pdf.pdf

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[14] National Education Policy (2020). Retrieved on 16.01.2021 at 11.30 a.m. from https://ncert.nic.in/pdf/nep//NEP_2020.pdf

on higher education. the NETF will organise multiple regional technology researchers, entrepreneurs and practitioners.

3. Objectives of the studies as follows: -
   ➢ To know the various uses of ICT with regard to the areas or aspects of higher education.
   ➢ To understands the merits or advantages of ICT that make the qualitative Higher Education.
   ➢ To know the limitations of uses of ICTs in Higher Education.

4. Methodology:

The methodology of this paper is descriptive type with regard to higher education. Various national and international journals, websites, books, reports and articles from secondary sources are searched and used to collect data for the current study. The collected data are qualitative in nature.

5. Uses of ICT in Higher Education.

5.1 Use of ICT enhancing teaching and teaching-learning process in Higher Education:

The field of education has been affected by ICTs, which have undoubtedly affected Teaching, learning and research (Yusuf, 2005)[15]. ICTs have the potential to accelerate, enrich and deepen skills, to motivate and engage students in teaching-learning process in Higher Education. In traditional teaching and teaching-learning process there only lecture method and presentation are used. Textbook-based learning was greatly emphasized. But in the contemporary setting, using endless learning resources in higher education promote competency and performance-based education. With the help of various EdTech tools, educational software or applications, internet and ICT tools students can access a variety of sources of information including videos, documents, podcasts and speeches by experts. The use of information and communication technology is improving the teacher-student relation and develops the process of teaching learning. Effective classroom teaching has become more attractive and alive than before with the help of ICT. The importance of individual difference on the part of education highly achieved through the use of information and communication technology. With the use of audio, visual and audio-visual components on different imagery and delicacy subjects have made it easier and easier to present. As a result, both teacher and students become more attentive and active in classroom teaching.

5.2 Enhancing intellectual development and value education through ICT in Higher Education:

ICT's contribution is outstanding in the development and value education. Increasing the use of information and communication technology in the field of higher education to develop the intellectual knowledge and values of the students. By accessing Internet, online instructional programs, online training courses, videos, online workshop and presentation students can

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[15] Yusuf, M. O. (2005). Information and communication technologies and education: Analyzing the Nigerian national policy for information technology. International Education Journal, 6(3), pp 316-321

increase skills, on the other hand, he can easily acquire, retain and improve and transfer the knowledge through the use of technology. As a result, a lot of loyalty and new values are being developed for the subject and subject matter in higher education.

5.3 Using ICT for enhancing the vocational guidance in Higher Education:

Now a day's vocational guidance is a most important type of guidance for higher education students. Vocational guidance or training is now playing an important role along with education. Thorough online courses, seminar, video conference, voice call, internet, newspaper, television students can know about the demand the vacancies and aimed profession. Students can easily get knowledge or guidance about his area of interest and vocational eligibility. Using ICT tools vocational guidance in higher education made easier and more acceptable.

5.4 Use of ICT in learning environment in Higher Education:

ICT presents an entirely new learning environment for students, thus requiring a different skill set to be successful. Critical thinking research, and education skills are growing in importance as students have increasing volume of information from a variety of source to sort through (New Media Consortium, 2007)[16]. ICT is changing process of teaching learning by using different elements of ICT for including virtual environment in Learning environment. Use of computer, T.V., projector, microphone and sound system. ICT may also make complex processes easier to understand through simulations that, again, contribute to authentic learning environments. Thus, ICT may function as a facilitator of active learning and higher order thinking (Alexander, 1999; Jonassen,1999)[17].

5.5 Use of ICT for Enhancing learning motivation in Higher Education:

ICT provides motivation to learn. ICTs such as videos, T.V. and multimedia coputer softweres that combine text, sounds and colorful moving images can be use to provide challenging and authentic content that will engage the student in learning process. Interactive radio like wise makes use of sound effects, songs, dramatisations, comic skits and other performance conventions to compel the students to listen and become more involved in the lesson being delivered. Student using ICTs for learning purposes become immersed in the process of learning and as more and more students use computers as information sources and cognitive tools (Reevs and Jonassen, 1996)[18], the influence of technology on supporting how student learn will continue to increase. ICT can engage and inspire students, and this has been cited as a factor influencing adoptors of ICT (Long, 2001; Wood, 2004)[19].

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[16] New Media Consortium (2007). Retrieved 25.01.2007 at 10.00 a.m. from https://library.educause.edu/-/media/files/library/2007/1/csd4781-pdf.pdf

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[19] Long, S. (2001), "Multimedia in the art curriculum: Crossing boundaries". Journal of Art and Design Education. 20(3). pp 255-263.

5.6 Use of ICT in scholastic performance and research in Higher Education:

The use of information and communication technology has a broad impact on students accademic performance. ICT use and students scholastic performance has been focus of extensive literature during the last two decades. ICT helps students to their learning by improving the communication between them and instructors (Valasidou and Bousiou, 2005)[20]. In research methodolgy, ICT fulfill the all technological requirements in higher education. Verious computer applications and softwares are used in reasearch fields. Online questionaire, survey,census are make easier to conduct research. Selecting research problem, formulating hypothesis, resaeach design, population and sample selection, methodology, data collection, data analysis and interpretation, and conclusion – all the steps in research steps are done by the use of ICTs components. Use of internet, conference, projector, printer, online libraries make the research process easier and simplest.

5.7 Use of ICT in evaluation process in Higher Education:

There are so many aspects of ICTs components used in evaluation process in Higher Education. Measuring student competency, measures of educational progress, students biological and mental health above all of evaluation related correct and accurate information gain able through the use of ICTs various components. Currently there are several online tests in the study has been started. For example, online entrance test for admission and interview for admission in various courses, online examination etc. also ICTs online selection test used for various professional job. In a word, now a day's, the extensive use of ICT has been given the transparent neutral form of the evaluation system.

5.8 Proper use of leisure time through the use of ICT in Higher Education:

Use of ICT makes the students deep respect for time and work to make leisure time worthy and valuable. Students enhance the technological skills and subject knowledge through the use of ICTs various new and concurrent inventions. In leisure time students put him into acquiring knowledge and theory by the use of internet, email, messenger, YouTube, etc. As a result, ICT makes the education continuous and dynamic among the students.

5.9 Use of ICT in Enhancing distance education and online courses in Higher Education:

In distance education, where students work on their own at home or at the office and communicate with faculty and their students via email, electronic forums, videoconferencing, chat room, instant messaging and other forms of computer-based communication. Most distance learning programs include a computer-based training (C.B.T.) system and communication tool to produce vital classroom with the help of internet. ICT also allow for the creation of digital resources like digital libraries where students teachers and professionals can

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Wood, J. (2004). Open minds and a sense of adventure: How teachers of art & design approach technology. The International Journal of Art & Design Education. 23(2), 179-191.

[20] Valasidou, A., Sidiropoulos, D., Hatzis, T., & Bousiou-Makridou, D. (2005, June 27- 30). Guidelines for the Design and Implementation of E-Learning Programmes, Proceedings of the IADIS International Conference IADIS E-Society, Qawra, Malta.

access research material and course material from any place at any time. Such facilities allow the networking of academics and researchers and hence sharing of scholarly material and leads to quality enhancement in teaching and learning.

6. Advantages of uses of ICTs in Higher Education:

➢ Uses of ICT makes the teaching-learning process easy and simple.
➢ It increases and improves the technological skills.
➢ Proper use of leisure time.
➢ Uses of ICT make the teaching-learning process attractive and alive.
➢ Full and proper use of time in classroom teaching.
➢ It makes the process easier for collecting, gathering and analyzing the data or information in research process.
➢ ICT gives us the opportunity to gain up to date knowledge about higher education though its components.

7. Limitations of uses of ICTs in Higher Education:

➢ Lack of proper infrastructure.
➢ Lack of knowledge for proper use of ICTs components.
➢ Lack of ICTs various components such as computer hardware, software, applications, projectors, camera, light pen etc.
➢ Antipathy of teacher for using ICT components in teaching process.
➢ Most of the students misuse the technological components only for entertainment.
➢ Too much expensive or costly for implement.
➢ Lack of training for using ICT components.

8. Conclusion:

After conducting this descriptive study, at the conclusion we must say that every stages of education process, mainly Higher Education must go on through the use of ICTs various components. In the era of current globalization of population, information and knowledge, use of technology make us comfortable and adjustable with the society and so on. Without use of technology we can't survive in our daily life. Education is not exceptional. Though the primary and secondary level are not so fair-able for use of technology, but the higher education level must depend on it. Without the use of technology, we can't complete out journey of higher education. Research evaluation and teaching learning process will be uncompleted and doubtful. The system of management, classroom interaction, environment of the institution, overall growth of education will be downstream. As a result, as the education system is backward the country and the nation will fall behind. That's why the use of technology is most important and essential part in higher education system. Without use of Information and Communication Technology (ICT) we can't move forward scientifically in higher education system.

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