ICT in Teaching Learning Process for Higher Education: Challenges and Opportunities

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Abstract: *In present trend the students of Higher Education are getting information from many sources it includes Internet, Social Media, Multimedia, Animations, Web applications and list goes on, and base for this is Information and Communication Technology (ICT) and in current trend ICT has become a common platform for majority population all over the globe. Web application and multimedia technologies have revolutionized educational field.Hence ICT plays a vital role in the field of Education especially in Higher Education, since implementation of ICT in higher Education is more student and teacher centric. Current evaluation of ICT by professionalsgave green signal to students who have constrained to learn subjects and concepts through use of technology. In recent years there is being exponent rise in number of students who are opting Higher Education in India, there should be an effective process for Teaching and learning the subject which will have more impact and increases the capability of student learning this can be implemented through use of technology in classroom nothing but ICT. This paper focus on thechallenges and opportunities for implementing ICT in classroom for teaching and learning process and also what circumstance can be converted to opportunities so it will help to implement ICT in classroom for better teaching and learning process.*
Keywords: *Higher Education,ICT,Multimedia, Technology.*

I. Introduction

EDUCATION SYSTEM -Swami Vivekananda quoted "Education is the manifestation of the perfection already in man". Principle architect of Indian Constitution Dr. B R Ambedkar says "Right to Education" means Education is the Basic Human Right of all the citizens in the nation and the primary significant factor in the development of every children, community and Nation [1]. History of Indian Education system it starts from Gurukulas, later by the invention of British rule Education system took a drastic change. These changes in higher education can be studied in three phases.

After independence till 1980 growth was not up to the mark, university and colleges which offers Higher Education was very less and Government took over some private institutions and also confined there maximum effort in setting up Universities and colleges. [2]

Development of Higher Education from 1980 to 2000, one end there was substantial increase in the population of middle class people economic feasibility was above average and they were ready to offer higher tuition fee. Another end industrial revolution ignited in faster phase which in turn started demanding the government for quality higher education to meet the challenges. During this period Government started few universities and colleges and also took few colleges under government funding. In spite of this, governmentstook over the step back and not willing to take additional responsibility in context of Higher Education in our country. [2]

Growth after 20th century, expansion took through affiliated colleges. Many private colleges established under affiliation recognized government universities started giving Higher Education along with moderate quality. In rare scenarios government were not providing proper fund and institute were not able run with government tuition fee which was impacting the quality of the education hence few colleges came out of state government and took the status of deemed university under UGC act,1956 because of this outraged effect so many colleges established between 2006-2013. In spilt of these drastic changes the Government was not able to meet the ultimatum for Higher Education hence they came up with the concept of Distance Education. To encourage students to take up Higher Education government provided scholarship and Education loan from banks at cheaper interest rate. [2]

Table I

Sl.No	Type of Institution	No.Of Institution (As on 2006)	No.Of Institution (As on 2013)
1	Central Universities	20	44
2	State Universities	217	310
3	Private Universities	8	168
4	Institutions Deemed to be Universities	104	129
	Total	349	651

(Source: UGC excluding Institutions of national Importance)

The Higher Education system in India had suffered a lot due to lack of access to the technology and discrimination. However the application of ICT in Higher Education has not only brought about divergence but also nurtured new boulevard of international kinesis for both home and overseas students. [3] The believed fact is that ICT can renovate a new view of Higher Education era in the nation. It should address and deal with the needs of multiple roles in Higher Education to gain/benefit stack holder. [4] But now the aim is on the end product than on the process behind the well-functioning model of ICT in Teaching and Learning process.

II.   ICT In Higher Education And Integration

Since there has been an exponential growth of studentsapproaching Higher Education, concentration should not be focused on establishing more institutes and university, along with that focus mainly should also be in quality and making student to understand the subject and concept in a better way by using technology and ICT in classrooms. Information and Communication Technology (ICT) comprises of many technologies for tracing, collecting, arranging, sorting and effective way of transmitting information. This includes Internet, wireless technology, mobiles and other communication medium which includes audio, videos and animations also [5]. Web and multimedia have totally hanged and improved the field of education. According to psychology, Research outcome shows that below senses plays vital role in grabbing/analyzing information via brain (eyes = 82%, ears = 9% and other senses = 4%).Pictorial informationachievespeak attention of student more than verbal teaching [6]. This shows that trend of gaining knowledge and information in Higher Education has changed. Internet and multimedia has occupied the current education system. Students entering Higher Education also have expectations like 76% students looks for global work opportunity, 67%colleges should teach entrepreneurship skills, 84% looks for better that online course alone [14] . So all these challenge cannot be fulfilled alone by traditional education system so there is a need of implementing ICT in Higher Education for better quality education and effective teaching and learning process.

ICT role in higher Education is obtained for quality enhancement, flared access and improve the operational proficiency of all functional modules related to Higher Educational sector and to create a novel dynamics in Higher Education both Macro and Micro levels. [7]

Technology in Higher Education has benefits like Future Forecasting; Learning becomes motivating/exiting, Improves Skills, UpturnsAssociation and Reduces paper based education.
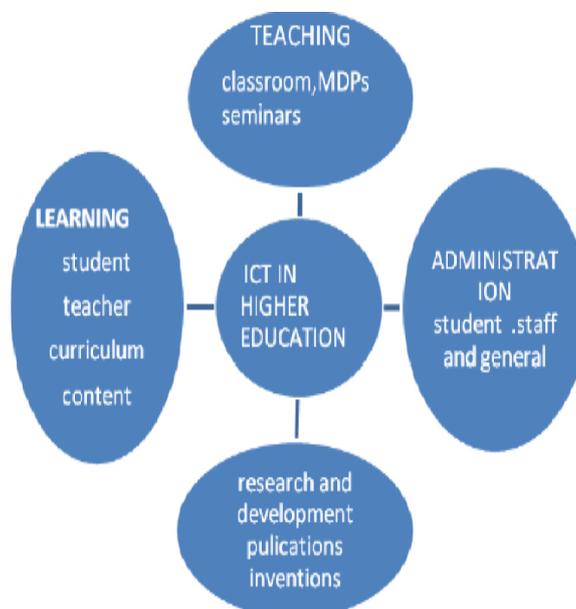

Fig 1: Integration of ICT in Higher Education[8]

III.   ICT Advantage In Higher Education

After knowing real facts of ICT, entire globe accepted the use and implementation of ICT in Higher Education. Since there is raise in volume of majority of people towards ICT obviously there will be many advantages in teaching and learning and keep also responsible for better quality output. ICT is basically the use of technology and provide a basic idea on how to use the technology and gives idea where it can be applied also helps to analyses impact of that technology in classroom. This technology is all about how the teacher and student communicate with each other, inquire about doubts, helps is making decisions and provide proper road map to understand and solve particular problem. This cannot be only applied in classroom it can also be implied in our daily life.

* Gathering information.
* Categorizing and consolidating.
* Summarizing and combining.
* Examining and assessing.
* Speculating and forecasting. [9]

The main advantages of ICT in Education

* Enables students to learn round the clock.Affords coaching to the requirements/necessity of the student
* Provides educational activities in geographic areas larger
* Offers Committed teaching through individual communication.
* Empowers effective education.
* Deliver instructions according to the student necessities.
* Offers educational activities covering large geographical areas.
* Boost the individual learning habit.[10]

From Student Perspective:

* Increased access to tool or site.
* Content rigidity is eradicated hence effective delivery is achieved.
* Amalgamation of work and edificationwhich student can map to real time scenario.
* Learner-centered approach, allows you to learn effectively and also come up with new things.
* Drastic improvement in the quality of Highereducation leading to innovative way of collaboration.

From Teacher Perspective:

* Innovatingpresent-day/modern learning modules.
* Easier use of multimedia or simulation tools.
* Helps to focus ICTs on eminence research through utilization of diligent research procedure and comprehensiveexploration.
* Improves the quality and helps to attract the students.

IV.   Challenges In Implementing ICT

Instant advancement of ICT is taking place all over the globe. ICT had become authoritative instrument for circulation/transmission of knowledge and information. Arrival and intense use of ICT in Higher Education has generated diverse retort. This will leads a potential challenge in using ICT in Education.

Use of ICT in Education has obvious benefits and also brings challenges.

* Primary challenge is expensive cost which will come to know while performing feasibility study which will incur acquiring, installing, Operating, Maintaining and replacing ICT's in Traditional/Manual process institution.
* Another challenging/hectic process is integration of ICT into teaching is still in initial stages/phases.
* Speed up Higher Education capability to innovate and adopt technology rapidly and effectively.
* Helping Higher Education Institutions to find and use technology in reduced cost.
* Imposing technological system without involving faculty and student, Automation of manual process from top to down hierarchy of the ladder will create a mesh and progressive expected result will not be achieved.
* Contents are region specific customization is mandatory before using same content in other regions, since it will not have at most impact while delivering.
* Providing an efficient technical manual and training should be provided after implementing technology in class rooms else not adjusted to the technology which currently in use. [11]
* Innovating new model with the help of technology and collaborating with existing one or using it independently which will be competitor globally in ICT age.

- Transformation of pedagogy by using technology and learning and make it more affordable and accessible.

In spite, lack of infrastructure and interest from management to implement technology in Higher Education, regional problems like Power outage (Electricity), Internet Service Provider (ISP)and net availability and lack of awareness towards proficientuse of technology with inadequateunderstanding/information were key factors for inevitable complexities for the successful execution of ICT in educational institutions. [12]

V.   ICT Opportunities

Higher Education and Technology both are reached the inflection point that will head the potential way which will change in upcoming years and decades. According to EDUCAUSE, Higher Education industry is under massive pressure to reduce the cost and develop the graduates and post graduates who are fully willing and well equipped to enter the corporate work force which is the prime opportunity.

It is only through Education and integration of ICT in education that create wide opportunity for teacher and student to participate in advance progressive era of swift change. Since this allows the creation of digital library with the help of digital resources which will help the students, teachers and professionals to access anytime. [13]Along with proliferation use of ICT brought massive changes in teaching and learning style at each hierarchical level of Higher Education System (HES) which will focus and concentrate on quality enhancement.

ICT implementation in educational institutions has brought the professional practice in teachers which enables and creates opportunities to take up more complex real time problem and provide a solution by using ICT tools and resources. Need to make faculty/teacher to get involve and support this new initiative rather than to resist and hamper the present coming changes.

Likewise there are so many other challenges in the way of implementing ICT in developing countries like basic need is electricity/power and telephone network which even till today many places which is not available. In addition to this many colleges not have enough classroom or infrastructure like building to incorporate technology in classroom. One more challenge is that teachers should adapt to ICT and develop their own passion forefficient use of the different ICTs in different circumstances.

Using unlicensed/cracked version of software downloaded from internet can cause problems lawfully which will lead and end up in paying huge penalty. Especially pirated software varies in standard format and functionalities.

VI.   Concluding Observations

The aggregate and immense use of information and communication technologies (ICTs) has conveyed deviationin modern education. Trend forecast will be major focus in the field of education that too Higher Education which involves the way it is adopted and delivered as a consequence of opportunities and affordance which will head towards the quality enhancement.

Traditional method of teaching and learning are widely being converted to various methods like online and virtual environments. In addition it will also increase the flexibility and provide options to access information regardless to time and geographical limit.Usage of ICT provides facility of e-learning (Distance Learning and Online Learning) which makes course material available which can be shared by means of ICT can nurture better delivering of concepts.

ICT enabled teaching and learning will proceed towards influencing and empowering teachers and students should join hands with teacher's new initiatives methods in order to acquire knowledge. ICT lead an innovation of Open Educational Resource (OERs) which enables storing and reuse of information materials enables the interface among the teachers as well as students. ICT empowered education will eventually lead to right to education for all citizens.

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