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Technology Savvy Higher Education In India

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ABSTRACT

During the last few years an increasing number of international development agencies have embraced the potential of Information and Communication Technology to support the education sector. Teachers can utilize technology to get benefits from using these tools in the areas of content, curriculum, instruction, and assessment. The use of ICT creates an open environment which enables the storage and the reuse of information materials as also it enables the interface among the teachers as well as students. But there are certain challenges also which exist for the ICT based teaching & learning. The aim of this paper is to highlights the need and importance of ICT in growth and development in Indian higher education system.

Keywords: Indian higher education, ICT, online education, Efficiency and quality education.

JEL classifications: I21, I28.

INTRODUCTION

One of the distinctive features of human beings is the ability to acquire knowledge. Transfer of knowledge, which is one of the foundations of learning, is among the most fundamental social achievements of human beings. There is no doubt in the fact that 21st century is going to be a knowledge century. India being the nation of young people is full of aspirations and has lot to achieve in the era of knowledge. As we know that the education is vital for India's competiveness and economic growth, but also for social stability. The disparity between rich and poor is growing, and expectations on the part of young people and their parents are high. With over 600 million people in India under 25 years old, the system is under tremendous pressure to expand. Higher education in India is undergoing considerable change. India has seen a dramatic shift towards private provision across the entire education spectrum, including higher education. The private sector is already playing a significant role in the development of education in India, and its influence and presence will increase substantially. India's young population has a huge desire for education and, as the growth in the size of the middle classes escalates. However, growth is not even, there is a growing disparity between those who have access to better life chances, and those who do not. The World Bank categorises India as "an extreme dual economy". Despite huge strides in primary enrolment rates, India still has the largest number of out-of-school children in the world and 69% of

India's population still lives on less than $2 a day[1]. In the next decade, India will experience enormous growth in its middle classes: from 50 million now, to 500 million by 2025[2], so, millions are increasingly able to pay for it. By 2020, India will be the world's third largest economy. The relationship between economic growth and growth in the tertiary enrolment ratio is particularly strong for economies with lower levels of GDP (purchasing power parity) per capita. In ten years' time, 25 million households across India will have an income equivalent to $15,000 and will be able to pay fees for higher education, an increase of 15 million on today's enrolment rates[3]. Our frugal future: lessons from India's innovation system.

The Indian government is planning huge expansion at all levels of education. The education system as a whole is beset with issues of quality, access and equity, and change is happening much faster in some states than others. Government plans are in place to transform the sector over the next five years. Every aspect of higher education is being reorganised and remodelled: funding, leadership and management, quality assurance, accountability, relationships with industry, international collaboration, and the way research and teaching are conducted. If these reforms succeed, the breadth and depth of the change will be transformational.

The greatest reform in the governance and funding of state universities will come through the central government's Rashtriya Uchchatar Shiksha Abhiyan (RUSA) or National Mission for Higher Education programme, a key part of the 12th Five Year Plan. RUSA aims to "have a completely new approach towards funding, regulation and governance of higher education in state universities; it will be based on key principles of performance-based funding, incentivizing well performing institutions and decision-making through clearly defined norms"[4]. This new framework was approved, with funding, by the Indian government in October 2013. Although it is too early to make any long term predictions, the initial stages of the programme, which lay the groundwork for national implementation, have been noticeably fast.

Under RUSA, the central government has committed extra funding to most states for higher education in the ratio 65:35 central to state funding. This represents a significant increase in ring-fenced funding to state universities. However, there are conditions: state governments have to set up autonomous State Higher Education Councils (SHECs), which will be responsible for the planning, quality assurance, monitoring and evaluation of the state's higher education provision, in order to enhance quality and improve access to the sector. In effect, the governance of higher education, except for centrally-funded institutions of national importance, will be devolved almost entirely to the states.

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[1] *http://data.worldbank.org/indicator/SI.POV.2DAY*

[2] *McKinsey Report (2007) cited in 'The Emerging Middle Class in Developing Countries' OECD Development Centre, Working Paper 285,2010*

[3] *Rivers of Innovation: NESTA, 2012.*

[4] *'Rashtriya Uchchatar Shiksha Abhiyan', Ministry of Human Resource Development in association with the Tata Institute of Social Sciences ,2013*

The rapid development of Information and Communication Technology (ICT), particularly the Internet, is one of the most attractive phenomena characterizing the Information and knowledge Age. Introducing ICT as a tool to support the education sector has initiated substantial discussions since the late 1990s. A decade ago the emphasis was on Technical and Vocational Education and Training and training teachers. The concept of moving the traditional classroom of desks, notebooks, pencils, and blackboard to an online forum of computers, software, and the Internet intimidates many teachers who are accustomed to the face-to-face interaction of the traditional classroom. During the last few years an increasing number of international development agencies have embraced the potential of ICT to support the education sector.

Management institutes and educators have attempted an increased incorporation of collaborative group work, problem-solving and decision-making through technology. No doubt, if used appropriately, technology-based tools can enhance student's cognitive performance.

Information and Communication Technologies can be classified into two major components, Information and Communication Infrastructure (ICI) – refers to physical telecommunications systems and networks like cellular, broadcast, cable, satellite, postal. The services that utilize those, like Internet, voice, mail, radio, and television.

Information Technology (IT) – refers to the hardware and software of information collection, storage, processing, and presentation.

Integrating ICT in teaching and learning is high on the educational reform agenda. Often ICT is seen as indispensable tool to fully participate in the knowledge society. ICT brings revolutionary change in teaching methodologies. ICTs will be an essential aspect of cultural & environment of teaching in the twenty-first century, by adopting transformative models of development which extend the nature and reach of teacher learning. ICT is a potentially powerful tool for extending educational opportunities, both formal and non-formal, to previously underserved constituencies like rural populations, groups traditionally excluded from education due to cultural or social reasons such as ethnic minorities, girls and women, persons with disabilities, and the elderly, as well as all others who for reasons of cost or because of time constraints are unable to enrol in any course. In India, ICT can moreover be seen as a way to enter into a globalizing world and make valuable identification.

TOOLS OF INFORMATION AND COMMUNICATION TECHNOLOGY

There are various ICT tools available which can be utilized for the knowledge creation and dissemination in the modern world. Tools include Radio, T.V, Internet, Mobile phone, Computer, laptop, tablets and many other hardware and software applications. Certain ICT tools like laptops, PCs, mobile phones, and PDAs have their own implication in Education. These devices can be used in imparting education and training for teachers and students. Many of the ICT tools are much hyped but have not given fruitful results till now. Use of radio for pedagogical practices has been very much popular in past and is still in use in India by IGNOU. But One-to-many broadcast technologies like radio and television are seen as less revolutionary ICTs in education, as their usage is seen as reinforcing of traditional instructor-centric learning models, unlike computers, which many see as important tools in fostering more learner-centric instructional models. Successful ICT initiatives meet three intertwined

objectives: availability, access, and demand. Educational ICT tools are not for making educators master ICT skills themselves, but for making educators create a more effective learning environment via ICT. Teachers can utilize ICT tools to get benefits from using these tools in the areas of content, curriculum, instruction, and assessment.

ICT IN HIGHER EDUCATION

Academics have taken to the use of computer in teaching much more readily than they adopted earlier audio-visual media. There is a trend to introduce eLearning or online learning in all courses whether in campus or in distance learning. ICTs in general and eLearning in particular have reduced. In many countries, demand for higher education far outstrips supply and Governments and institutions are turning more and more to the use of ICTs to bridge the access gap. It is too early to say whether the role of ICTs in the teaching function of higher education is truly transformative, or whether it is simply a repackaging of previous pedagogy.

ICTs make possible learning characterized by a time lag between the delivery of instruction and its reception by learners. For example, online course materials, may be accessed 24 hours a day, 7 days a week.

Teachers and learners no longer have to rely exclusively on printed books and other materials available in limited quantities in libraries for their educational needs. With the Internet and the World Wide Web, a wealth of learning materials in almost every subject and in a variety of media can now be accessed from anywhere at any time of the day and by an unlimited number of people. ICT is both driving and enabling the processes toward a knowledge-driven global economy. It allows higher education providers to accommodate the specific needs of students in terms of mode, pace, place and time of study and to cater to different and new target groups and (niche) markets both locally and globally.

The growth of mass higher education has made large classes a widespread feature of several courses at higher education institutions. Large class sizes make it difficult for teachers to employ interactive teaching strategies or to gain insight into the difficulties experienced by students. Large classes pose problems for all students but students who are under-prepared are particularly affected. It is these contexts that provide useful opportunities for educational technologies. ICTs are a prospectively prevailing tool for developing educational opportunities, both prescribed and non-prescribed.

One important characteristic of ICTs is their capability to go beyond time and space. ICTs make it feasible to achieve learning which is exemplified by time delay involving the deliverance of instruction and its receipt by students which is termed as asynchronous learning. Course materials can be retrieved and used 24 x 7.

With the advent of the internet and the World Wide Web, it is now possible to gain access to an unlimited amount of data and educational materials. Data in almost any subject and in diverse forms of media can be accessed from any place at different times of the day and by an unrestricted number of individuals. This is predominantly important for various educational institutions that have restricted and outdated material in their libraries. ICTs, also enable access to the opinions of professionals, experts and researchers all over the world and allows one to be in direct communication with them.

The use of ICT creates an open environment which enables the storage and the reuse of information materials as also it enables the interface among the teachers as well as students. It

is believed that the use of ICT in education can increase access to learning opportunities. It can help to enhance the quality of education with advanced teaching methods, improve learning outcomes and enable reform or better management of education systems. The continued use and development of ICTs within education will have a strong impact on: What is learned, how it is learned, when and where learning takes place, & who is learning and who is teaching.

Wider availability of best practices and best course material in education, which can be shared by means of ICT, can foster better teaching. ICT also allows the academic institutions to reach disadvantaged groups and new international educational markets. Thus, ICT enabled education will ultimately lead to the democratization of education.

DRAWBACKS OF USING ICT in HIGHER EDUCATION

Although ICT offers a whole lot of benefits there are some risks of using ICT in Higher education which have to be mitigated through proper mechanisms. They are:

1. Also since not all teachers are experts with ICT they may be careless in updating the course content online which can slow down the learning among students.
2. It can affect the bonding process between the teacher and the student as ICT becomes a communication tool rather than face to face conversation and thus the transactional distance is increased.
3. It may create a digital divide within class as students who are more familiar with ICT will reap more benefits and learn faster than those who are not as technology savvy.
4. It may shift the attention from the primary goal of the learning process to developing ICT skills, which is the secondary goal.
5. The cost of hardware and software can be very high.
6. The potential of plagiarism is high as student can copy information rather than learning and developing their own skills.

CHALLENGES OF APPLYING ICT FOR TEACHING & LEARNING

Certain challenges also exist for the ICT enabled teaching & learning.

1. A lot of information available online may dissuade student learning.
2. There is lack of trained teachers to exploit ICT proficiently. Most of the teachers are not willing to introduce new technologies to themselves first and subsequently to their students. There is resistant from teachers, basically from older teachers as compared to younger ones, to apply ICT in their subject.
3. The teachers need to develop their own capacity so as to efficiently make use of the different ICTs in different situations.
4. There is costly supportive infrastructure. Developing online material can be expensive, time consuming.
5. English language is also a problem for many teachers. English being the dominant language most of the online content is in English. This causes problems as in many nations the people are not conversant or comfortable with English.

6. Major challenge for educators and trainers is how to develop learning materials for delivery on available ICT tools including mobile devices. The learning materials should be in manageable learning chunks and should make use of multimedia.
7. In term of quality control in education, there is lack of standards for parameters to measure the quality of education.
8. The implementation of ICT in education is the initial thinking that is based on the technology. ICT hardware and software are not designed as per educational purposes rather they are designed for general purpose. One first thinks about the available technology and then a try is being made to apply it into education field, but if we look at in reverse way then possible outcomes may be more useful and may give good results.
9. Students can feel isolated in absence of classroom like environment.
10. Teachers lack adequate qualification and training and their lesson plans are most often outdated or irrelevant. Setting up the ICT devices can be very troublesome. It is expensive to afford it is hard for teachers to use with a lack of experience using ICT tools.
11. The four most common mistakes in introducing ICTs into teaching are:
    i. installing learning technology without reviewing student needs and content availability;
    ii. imposing technological systems from the top down without involving faculty and students;
    iii. using inappropriate content from other regions of the world without customizing it appropriately; and
    iv. producing low quality content that has poor instructional design and is not adapted to the technology in use.
12. The other challenge faced is that in many developing nations the basic requirement of electricity and telephone networks is not available. Also many collages do not have proper rooms or buildings so as to accommodate the technology.
13. Using unlicensed software can be very problematic, not only legally but in the costs of maintenance, particularly if the pirated software varies in standard formats.

CONCLUSION

The educational effectiveness of ICTs depends on how they are used and for what purpose. And like any other educational tool or mode of educational delivery, ICTs do not work for everyone, everywhere in the same way. ICT can be helpful in quality and standards of education by implementing it in various phases of education. ICT can be employed in formal and Non-formal types of education and would eventually make the learners employable and socially useful part of the society. In India, there is a lack of standards for parameters to measure the quality of education. For the solution of this all the accreditation bodies like NAAC, NBA, AICTE, CBSE and other authorities must sit together and circulate a standard list of parameters to decide the quality of education. Good quality content is one of the major issues and directly affects the standards of education and quality. By overcoming the certain challenges involved in the process of education can help a lot in this side. Conclusively a lot

of quality improvement is possible after careful and planned implementation of ICT in education.

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