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Digitalization of higher education: Issues and challenges

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Abstract

Use of technology in education is not a recent trend. It has been gradually taking over. Today there are unprecedented institutes and students in the world, completely depending upon the digital support in developed countries. Although, the developing nations are also following the same path, yet there are some unavoidable issues which need to be resolved. Some research studies, surveys and reports have also been reviewed to gain a deeper insight of these issues and challenges coming in the way of digitalization of higher education. Some of these issues are directly related to the educators i.e. lack of digital literacy and resistance to change. Some others are linked with students, content and infrastructure like lack of equal access to digital support, development of quality content and lack of funds to build and maintain the required quality infrastructure. These challenges need a serious consideration because avoiding the digitalization will risk the speed of development and prosperity of the concerned country. Resolving these issues will open the new horizons for the students, teachers and the whole nation. Some suggestions and solutions are also given to promote the efficiency and proper implementation of digitalization in higher education in India.

Keywords: Digitalization of higher education

Introduction

Science explores, art expresses and technology facilitates life by applying science artistically. Technology is taking over every field under the sky. Laptops, smart phones, tablets are being used by a child to an old aged individual. Applying technology in the education sphere is a systematic procedure of designing, implementing and analysing the process of learning and teaching in terms of specific objectives. This is not a recent trend. It has started over nearly half century ago. Education is facilitated for the maximum possible development of learners. From being a simple venture carried out by a guru for his disciples in the primitive period, education has turned into a complex and global phenomenon providing a uniform system to a great extent in every nook and corner of the world. This is the result of the innovative techniques used in imparting the education.

Digitalization

Digitalization is the trending term, describing the contemporary period in the most appropriate manner. Digitalization refers to the process of converting information into a digital format. Digitalizing information makes it easier to preserve access and share that information. For instance, an original historical document or monument may only be accessible to people who visit its physical location, but if the document content or images or recording of that building is digitalized, it can be made available to people of the whole world. Thus, there is a trend to digitalize each and every piece of significant data. Digitalization is the integration of digital technologies into everyday life by the digitization of everything that can be digitized. It is the creation of a world dependent upon technology.

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Higher education

Higher education is a level of learning and instruction for students who complete their higher secondary education at the school. It consists of teaching, research, applied work training, etc. imparted as under graduation, post-graduation, research and diploma programmes. It also includes trade schools, vocational institutions, career colleges and institutions offering professional courses. It offers one to undertake a study of science, art, engineering, technology, medical and environment. The document of the World Bank on higher education (1994) [7] "The Lessons of Experience" justifies that "Higher education is of permanent importance for economic and social developments." This indicates that the importance of higher education is recognized in national development. The higher education system in India is the third largest system in the World, the USA being the first and China being the second. Distance education is one of the eminent features of Indian higher education system.

Higher education and digitalization

Similar to other domains of society, in practice digitisation has slowly crept into education, especially since the emergence of the World Wide Web in the 1990s. Scores of lecturers and institutions experimented with the possibilities of web-based learning, such as using instructional videos, digital tests and exercises, and gaming. Some of these experiments were successful, while some others failed or their use in any case was rather fragmented. Technology has shown far reached impact upon education system starting from the primary level to university level. Higher education is the level where all the students are equipped with relevant literacy skills and knowledge of subjects to undertake a study in a specific area. Technology has become part and parcel of higher education level in a number of ways. The students enrolled in colleges and universities, attending the lectures are making use of technology in a number of ways, while the ones involved in distance education programmes are blessed with digitalization of their whole instruction programme. Today, no education system can claim to run independent of digital technology. In the present era technology is serving in education field in an unprecedented ways. It has started a new phase of learning and it involves various advanced techniques like:

- **Online courses**

Some universities and institutes provide the facility to students to study online. If someone wants to learn a new language or to get trained in some specific course, but they have no time to cover the distance, they can easily opt for online courses developed by experts of their fields. MOOC (Massive Open Online Course) is an appropriate example here. Except providing filmed lectures, readings, it also provides interactive courses which arranges for the interactions among professors and students.

- **Online exams**

Digitalization has made the examination process very easy and convenient for both teachers and students. These are also called E-Exams or E-Assessment. In these exams students demonstrates their academic achievement using computers. For instance, UGC-NET, IELTS and many more exams are being taken with the help of computers only.

- **Digital textbooks**

The books made available in digital form fall under this

category. E-textbooks/e-texts/digital textbooks provide the students with text, images or other content such as hyperlinks, etc., readable on the mobiles and laptop or computer.

- **Animation**

It offers a visual representation of the topic through which the students learn in a better way. Hardest content learning becomes easy and interesting through this technique. It is a computer-created sensory experience that allows a participant to believe and barely distinguish a virtual experience from a real one.

- **E-journals**

An electronic journal is a periodical publication, which is published in electronic format. These are far more superior over traditional published journals. They provide the latest data on certain subjects. For example, some of the e-journals are Review of Educational Research, Journal of Research in Science Teaching, International Journal of Economics & Management Sciences, etc.

- **Digital libraries**

Several libraries offer a wide range of on-line services to their users. Students from all over the world can explore any content available in the libraries without leaving his or her home. National Digital Library of India works to integrate a number of national and international digital libraries in one single web-portal. For instance, INFLINET is involved in modernising university libraries in India and connecting them as well as information centres in the country through a nationwide high speed data network using the state-of-art technologies for the optimum utilization of information. INFLINET is an autonomous Inter-University Centre of the University Grants Commission of India.

These services of this digital world are a few to list. So, digital learning is the learning facilitated by technology that gives learners some element of control over time, place, path and pace. They can learn at anytime, anywhere following their own style and at their own speed of learning. Thus, digitalization is serving our higher education system in countless ways. Digitalization brings both opportunities and threats for the quality, efficiency, innovation, positioning and visibility of higher education. This article will focus on the major issues and challenges that digitalization of higher education has posed so far, in order to gain a deep insight to realise the importance of solving these issues.

Issues and challenges

Although digitalization is a phenomenon ruling the world, yet there are some hurdles in the smooth running of this trend in developing nations. Digital revolution in education is also accompanied with some unavoidable issues. These can be broadly categorised in three categories:-

- A. Challenges related to educators
- B. Challenges related to students
- C. Other challenges

Challenges related to educators

Comfort with status quo

Teachers trained in traditional teaching methods are comfortable in teaching their subject with age old methods. They hardly opt for innovations. Majority of the teachers

prefer to teach their students using the methods used during their own education. They find it a challenge to go with dynamic teaching techniques and use of technology.

Lack of digital literacy among educators

There are radical developments in the way of use of technology in education. But the faculty is lagging behind in expertise for implementing these developments. They are not as efficient in handling the new devices as the modern children. In India, higher education teachers are hardly getting any training or workshops to develop their digital literacy.

Organizing information from the internet

It refers to the skill of downloading texts and pictures. Organizing these according to the requirements of curricula, needs and level of the students is again perceived as a burden by some educators. They prefer to deliver lectures regarding the content in spite of exploring the internet for updated information of the subject or the topic under study.

Lack of adequate ICT support, infrastructure and time
Not all the higher education institutes are equipped with adequate ICT support. Access to technical support in classrooms, availability of infrastructure (computer labs, software), policies (whether to administer digital assignments or not) and time allocated to hook in new technologies are main challenges for educators.

Challenges related to students

Advancing digital equity

It is still an unsolved problem and social justice issue. Lacking digital equity means unequal access to technology, particularly broadband internet. UNESCO reports that while 3.2 billion people across the globe are using the internet, only 41% of those that live in developing countries are online. So, not all the students have easy access to internet and digital devices and gadgets.

Managing knowledge obsolescence

In the distance education, digitalization has hardly left any scope for the educator. In the absence of teacher, staying organised and on the track is not every student's cup of tea. They are disrupted time and again due to the informal environment.

Achievement gap

The Horizon report (2017) reported that the achievement gap represents a disparity in the enrolment and academic performance between the student groups, defined by socio-economic status, race, ethnicity or gender. While the digitalization has made it easy for students from these groups to engage with learning resources online, the technology is still not capable to cater all learners' needs. Digitalization is delivering education to a diverse student population. So, more flexible plans are yet to be developed to curb this issue.

Other challenges

Unrealistic expectations

These constitute the third type of risk. Mudler (2017) ^[5] reported that online education is a relatively new evolution involving experimentation, where things may from time to time turn out differently than expected. MOOCs are a good example of this. Millions of people undertake online

courses, yet currently only a minor percentage actually completes them.

Radical changes in technology

It is unfortunate that technology is always changing. So the institutes will not be able to use the same tools forever. They need to have a plan and budget in place for upgrading technology. Students enrolled in distance education also need to use updated versions of software.

Failed to substitute human interaction

Although teachers and students are using virtual assistant on frequent bases, yet there is no replacement for human interaction. So, teachers should never step aside and let the technology take over. Digital resources can better be used as supplemental and complementary tools in the classrooms.

Some software systems are not optimized for mobile devices
In India, not all the students have computers and laptops at their homes, so they use their mobile phones and data for internet access. Therefore, it is crucial to make sure that all the digital resources are optimized for mobile devices.

Lack of quality content

A collection of high quality digital learning content is still needed to be developed by the institutes. This area need thorough research to be carried out. All the curricula developed till date is the one to be studied with the mentoring and assistance of teachers, the self-study material to be provided to the students must be the one making them learn effectively at their own.

Thus, the above discussed issues need quick resolution. Educators should come forward to make maximum productive use of digital support in their teaching for attaining dynamic goals of education. Although, some challenges are almost impossible to be resolved i.e. substitution of human interaction, yet the others can be resolved with joint efforts of education authorities, educators and students.

Conclusion

In contemporary period, no student or higher education institute can depend upon merely books and traditional methods of teaching and learning. Homavajir and Gopal (2018) ^[4] studied digitalization of higher education and reported that digitalization improves the teaching style, proves to be more practical approach and the enthusiasm in students is also determined to be higher. Although, teachers found it disrupting their existent style of teaching, yet they found it a necessity to sustain. Therefore, for promoting digitalization in higher education, educators must be trained in digital literacy skills. Further, raising funds for updated versions of technological support by government, securing mass access to internet, lower costs of gadgets, development of quality content and combining digitalization with mentoring by experts will go a long way in attaining successful and productive outcomes of digitalization of university and higher education.

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