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E-LEARNING: PREPARING INDIA FOR 21ST CENTURY EDUCATION

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Abstract

Internet has marked the beginning of a new digital age. Education has crossed the four walls of the classroom and is now delivered through cloud based virtual classrooms. In developing countries like India education is getting transformed with e-learning. E-learning is at a nascent stage in India but it has a vibrant future. The present study first discusses about the online education system prevailing in India. Then the study focuses on the various initiatives taken by MHRD in partnership with public and private organizations towards the developments of online education in India. Further the study discusses about the key drivers of e-learning in India. The study also focuses on various challenges like lack of motivation and awareness, accessibility, delivery mode, quality teachers and infrastructure faced by e-learning in India. In the end few suggestions have been made regarding the successful implementation of e-learning in India.

Keywords: E-learning, Online Education, Technological Infrastructure, e-content, Information and Communication Technology.

Introduction

The accelerated advancement in information and communication technology has given space for new academic paradigm, which will have a deep impact on the social and economic development of a nation. E-learning has emerged as the most imperative competency of the 21st century. E-learning or Electronic learning refers to a learning methodology supported by information and communication technology tools like computers, multimedia and web.

E-learning has a huge potential in developing countries like India, but its adaption is very slow Pande, D., Wadhai,V.M. & Thakre, V.M. (2016). In the last few years government of India has launched several central and state specific schemes to include various internet based tools in education like cloud based virtual classrooms and universities Saxena, N. (2017). Smart boards, digital platforms, smart classrooms have almost made the chalk and duster an extinct phenomenon. The smart classroom market in India is expected to grow at a CAGR of more than 20% from 2016 to 2020 as reported by a recent research report from Technavio. Another study reports that 85% of educational institutions in India consider it important to promote an educational environment which has a proper mix of technology and education. Smart education in India is expected to escalate with a CAGR of 16.76% and the gross enrollment ration is expected to rise to 30% by 2020. These developments will boost the growth of online education in India Mohanta, N. (2017, May 11).

Objectives

To study about the status of present online educational system in India.

To study about the various initiatives taken towards the development of e-learning in India.

To focus on the key factors that helps in development of e-learning in India.

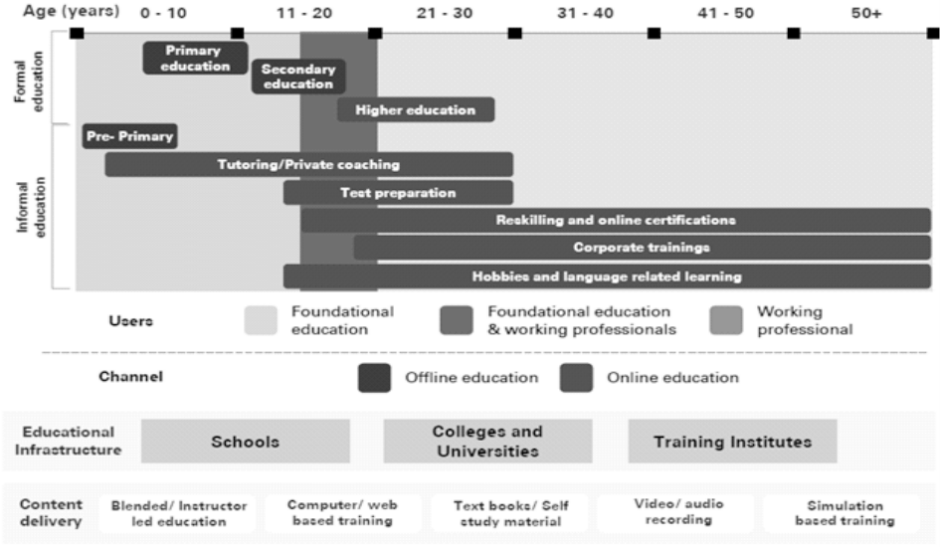
To focus on various challenges involved towards enhancing e-learning education in India.

Research Methodology

The focus of the present study is to gain an insight about e-learning trends in India. For this purpose secondary data has been collected. Secondary data comprises of collecting relevant information and data form research papers, journals, websites and published reports.

The Educational System in India

A multi-layered formal educational system prevails in India with approximately 260 million students enrolled in nearly 1.5 million schools and 39,000 colleges catering 27.5 million UG and 4 million PG students.



Source: KPMG in India's research and analysis 2017

Figure 1: Educational System

According to AISHE 2016-17 there are 864 universities in India, out of which 488 are General, 114 Technical, 67 Agriculture and Allied, 52 Medical, 19 law, 13 Sanskrit and 9 Language Universities and the remaining are other categories. In addition to one Central Open University, 13 State Open University and, one State Private Open University, there are 117 dual-mode Universities in India out of which maximum (17) are in Tamil Nadu alone.

The Indian online market is the second largest in the world, after China with about 460 million internet users. The anticipated internet users by 2021 are 635.8 million. Even with such a large base of internet users, only 26% population in India access Internet. In 2016 the internet penetration was around 31%. The online education market in India is 247 million USD in 2016. It is expected to grow to USD 1.96 billion in the next five years. Online higher education in India serves as a direct alternative to the present offline educational system. In 2016 the online higher education market in India was USD 33 million, which is expected to grow at a CAGR of 41% and become USD 184 million by 2021.

E-learning in India

E-learning in India expanded with the launch of public internet access by VSNL in the year 1995. A major revolution in e-learning was marked by the formation of the National Taskforce on Information

Technology and Software Development in the year 1998, Sharma, R. C. (2005). IGNOU took several initiatives towards internet based education by launching Virtual Campus Initiative in the year 1999. Educational channels named Gyandharshan and Gyanvani were launched for students to help them explore numerous e-learning programs. eGyanKosh, a depository of course content in the form of audio, video and text was made available for students. Flexilearn, a free of cost, self-learning platform was introduced for learners. MEdRC established in 1993 and MedVarsity established in April 2000 were initiatives towards blended learning approach in the field of medicine. Computer graphics, multimedia technologies and e-lectures enabled doctors to pursue education in medicine. National Program on Technology Enhanced Learning subsidized by MHRD, Government of India and executed by seven IITs and one IIS was initiated in the year 2003. It focused on higher technical education, professional education, distance learning, open and consistent learning, Mishra, S. (2009).

The biggest accomplishment was the launch of "EduSAT", the first Indian communication satellite propelled on 20th September 2004. This was the first educational satellite which provides nationwide satellite based two way communications to classrooms for transmitting educational material. The satellite consists of one-way video and two-way audio facility. Amrita University, Yashwantrao Chavan Maharashtra Open University (YCMOU) and Visvesvaraya Technological University are the three major universities imparting satellite based distance education facility in India.

In the 11th five year plan the Department of Information Technology, Ministry of communication and IT declared various e-learning R&D activities in India. The focus was on building a progressively configurable nation-wide multi-gigabit system linking every single educational organization, Research and Development centres, hospitals, libraries and agricultural organizations. The National Knowledge Network founded in 2009, connects more than 1500 institutions including 14 IIT's, 12 NIT's, 10 IIM's, 37 DRDO establishments and various other colleges, institutions, universities and research centres through its Virtual Classroom programs. All the branches of engineering and technology at various IIT's, NIT's, IIIT's, Amrita University, Dayal Bagh University have been included in this mission of establishing virtual labs, NME-ICT (2016), VLABS, IIT Bombay (2016).

The breakthrough in the field of online education was the “Digital India Mission” launched by Prime Minister Narendra Modi in 2015. The vision of this mission is to transform India into a digitally empowered society and knowledge economy. Digital India Mission has added new dimension to the education sector in India. MHRD and AICTE in collaboration with Microsoft developed a Massive Open Online Courses (MOOCs) Platform called SWAYAM (Study Webs of Active Learning for Young Aspiring Minds). This platform enables students residing in any part of the country to take online courses taught by best teachers in the country, thus making quality education available to all. SWAYAM is developed to achieve three fundamental principles of Education policy viz. access, equity and quality. SWAYAM PRABHA is a collection of 32 DTH channels and is responsible for transmitting good quality academic programs, throughout the day using GSAT-15 satellite. Fresh content of 4 hours is available daily and is repeated six time a day. The content is provided by NPTEL, IITs, UGC, CEC, IGNOU, NCERT and NIOS and the channels are uplinked from Bhaskaracharya Satellite Application Centre and Geoinformatics (BISAG). Another innovative initiative under “Digital India” theme is National Academic Depository (NDA). NDA is a unique 24X7 online store house for academic awards viz. degrees, mark sheets, certificates etc. The platform not only authenticates the academic awards but also provides easy access and retrieval.

Apart from the above mentioned initiatives MHRD and NMEICT have undertaken several state and national level projects to support e-learning in India. According to a report on National convention on Digital Initiatives for Higher Education, 2017 major e-learning projects as follows:-

a) National Programme on Technology Enhanced Learning (NPTEL):- MHRD in collaboration with 7 IITs has undertaken this project to support continuous and open learning for underprivileged students who are deprived of higher technical and professional education.

b) National Digital Library (NDL):- NDL is a pilot project sponsored by MHRD and coordinated by IIT, Kharagpur. This virtual repository enables lifelong learning in all disciplines. It has been developed to assemble, preserve and distribute content to students of the country from school level to PG level including technical education.

c) e-Shodh Sindhu:- This portal provides access to around 15,000 international electronic journals and e-books to all the higher education institutes in India.

d) Virtual Labs:- These labs provide a platform to students to learn basic and advanced concepts of the practical subjects at UG and PG level through remote experimentation. Around 6 lakh students have access to 1515 experiments in engineering and science disciplines across 205 virtual labs established across the country.

e) e-Yantra :- The objective of this project is to create utility based robotics applications in the field of agriculture, defense, manufacturing and services industries.

f) Campus Connectivity:- Under this project 600 universities have been connected through 1 Gbps optical fiber and 22026 colleges have been connected through 10 Mbps bandwidth. Under Digital India initiative MHRD has decided to make campuses of Universities WiFi enabled. IITs, IIMs and NITs have already established WiFi Campuses.

g) Talk to a Teacher:- This project was initiated by National Mission on Education through ICT, developed by IIT Bombay and funded by MHRD for improving teaching skills of the teachers in engineering and science subjects. Almost eighty thousand teachers have been trained through virtual classroom using A-View (Amrita Virtual Interactive e-learning World).

h) e-Acharya:- Also called Integrated e-Content Portal, is the repository of NMEICT. More than 70 projects on e-content are being developed in Science, Arts, Engineering etc. through various Universities and colleges.

I e-Kalpa:- Another MHRD/NMEICT project for creating a digital learning environment for design students in India.

j) The free and Open Source Software for Education (FOSSEE) :- It is an initiative by IIT Bombay for encouraging the use of open source software in educational institutes.

k) e-Vidwan:- It is an expert database of profiles of scientists/researchers and other faculty members employed at various educational institutions and Research & Development organizations in India. It is maintained by INFLIBNET and NMEICT.

Various learning approaches have been made available to boost e-learning in India. These approaches can only yield fruitful results when their aims and objectives are precisely defined, Rawal, S. Pandey, U. S. (2013). The wave of e-learning is spreading at a fast pace in India.

Key Drivers of e-Learning in India

India is the second largest e-learning market after US. Many factors like rapid internet penetration,

availability of low-cost mobile phones, young and tech savvy workforce have opened huge opportunities for e-learning platform in India, Nag, Arindam. (2015). The e-learning sector in India is expected to reach $ 1.29 billion by the end of 2018, growing at a CAGR of 17%, which is twice as fast as the global growth. According to a recent McKinsey research, the Digital India initiative if executed properly will increase the Indian GDP by 20-30% in the next 10 years, Krishnakumar, P. (2017). This is just the beginning of a new digital age.

The main drivers of e-learning in India are as follows:-

- E-learning provides a low cost alternative to education in developing countries like India.
- E-learning provides quality education to budding learners or students.
- The increase in smart phone base drives technology adoption among masses on India.
- Government is taking various digital initiatives for the adoption of e-learning in India.
- In the last few years there is a significant increase in the disposable income of the Indian households.
- Growing demand for industry relevant training by the young job seeking population of India.

Challenges (Findings of the study)

E-learning is a buzzword around the world, but in India it has gained momentum a decade ago. In-spite of several initiatives taken by government and several private players the growth of e-learning is slow and steady because of various challenges faced by online education in India. Some of the challenges are:-

1. Lack of awareness: - Making students aware about the benefits of online education is a big challenge. E-learning can be more engaging and effective than traditional or distance learning.
2. Unavailability of qualified teachers: - Lack of trained and experienced teachers who can engage students in multimedia teaching tools like smartboards, audio-visual aids is another challenge for online education in India. Further, the availability of skilled teachers in rural India is much more challenging.
3. Accessibility to digital infrastructure: - More than half of the Indian population (67%) resides in rural areas. Lack of technological infrastructure, poor internet connectivity, accessibility to appropriate mobile devices is still major issues in rural India. Internet penetration in India is just 15%. Absence of digital tools hampers the reliability of online courses.
4. Lack of good quality e-content: - Converting books into e-books is just not sufficient for enhancing the quality of e-content. Lack of expertise and shortage of finance towards developing e-content is one of the most challenging tasks for education providers.

Lack of motivation among students, absence of a country wide policy for online education, insufficient private players and digital illiteracy are various other challenges for the adoption of e-learning in India.

Suggestions

The future of Indian education will depend on e-learning, but it has a long way to go. Integration of technology and education is just not the solution for the successful implementation of e-learning. The government of India along with private organizations needs to work towards creating awareness

among students and teachers about the benefits offered by new learning methodologies like personalized learning, gamification etc. E-learning is a powerful tool to bridge the educational gap between rural and urban India.

1. Workshops, seminars and training programs on using digital tools and technology in education needs to be conducted by public and private organizations to create awareness and motivation among rural and urban masses.
2. The teachers and trainers of the 21st century have to become learners i.e. they must empower themselves with modern ways of teaching. Teachers need to become flexible, forward-looking and curious like their students.
3. Computer and internet is still a luxury for majority of the Indian population living in rural areas. The brick and mortar infrastructure needs to be equipped with modern technological infrastructure.
4. The e-books or the e-course material needs to focus on interactivity along with quality. The government needs to collaborate with IITs, NITs, other leading universities and the corporate sector to develop high quality e-learning content.

Conclusion

The students of the 21st century can be divided into two groups: Generation Z (born between 1995 and 2009) and Generation Alpha (born since 2010). India has the world's largest Gen Z and Gen Alpha population in the world i.e. the youngest population of about 356 million between the age group of 10 to 24 years, Nair, D. (2016). So transforming educational system through e-learning is the need of the hour as it is estimated that India will face a shortage of 250 million skilled workers by 2022. Various public and private organizations are heading towards this transformation. Government is investing huge sums of money towards distance learning providers and e-teachers in order to educate India smartly.

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