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DIGITAL EDUCATION: FUTURE OF TEACHING-LEARNING

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ABSTRACT

Modern era is era of technology. Education sector which is precursor, mediator and product of technology can not be refrained from its dynamic and fast changing effects. With passage of time, the education system all over the world has gone through a drastic change. Modern day complex needs can not be fulfilled by traditional education system where everything is dynamic and evolving at a very fast pace. Thus, to resolve the shortcomings of the traditional education system, the world is moving towards digital education which addresses all the issues and challenges of traditional education. Digital Education can be defined as the use of a combination of instruction, technology and digital content in the education system to make it more effective and efficient than the traditional education system. Power of digital education has been witnessed in these days of global lockdown which has kept the journey of teaching and learning moving by remote teaching. New ways of knowledge delivery system, collaborative learning have emerged. This article throws light on digital education and its components, emerging trends of digital education, advantages and challenges of digital education, success of digital education in india, and tools for the digital education that can be used to make digital learning environments more rich and user friendly.

I. INTRODUCTION

I dream of a digital India where quality education reaches the most inaccessible corners driven by digital learning. – Shri Narendra Modi

Education system of India is one of the largest education systems and India is known for this. We have around 1.4 million schools, 35,500 colleges, and 600 universities; still our graduate's employment rate is inadequate. This inadequacy of our graduate employability shows the lack of educational infrastructure. Our old education system lacks the capability to stand in technological age of 21st centuary. Assessing the changing requirement and the dynamic nature of the human experiences for our students, mentors, teachers, administrators, and policy makers should focus on the technologies for bringing and vital change and giving new learning experiences to our students. With the objective to make the rural India a part of digital age, Prime Minister Modi's administration has launched the Digital India campaign.

Providing broadband connectivity to a quarter of a million rural villages and making wi-fi connections available in schools are some of this campaign's targets so as to enter into world of digital education prevailing globally.

Digital Education

Digital education means digital learning. It is a type of learning that is supported by digital technology or by instructional practice that makes effective use of digital technology. All learning areas and domains can be made accessible for digital learning. Digital education gives win-win opportunities for all, at one side School, colleges and other institution finds the rapid rise in enrolments and added revenue because of digital education, and on other side students view this as a flexible and alternate option allowing them to study as per their convenient time and pace. It is convenient for teachers and professors to prepare their teaching plans aided by digital technology. Animations, gamification and audio-visual effects make teaching and learning a smoother experience. Over the last few years digital education in India is evolving at faster pace. The traditional chalk and talk method in school and colleges has been slowly changing with more interactive teaching methods as schools and colleges are increasingly adopting digital solutions. Digital learning guarantee more participation from students as the current generation of students are well-versed with laptops, I-pads, and smartphones. There are different private players in the field of digital education like Educomp, Tata Class Edge, Pearson, and Teach Next who are continuously engage and developing different interactive software to help teachers in classroom teaching.

Components of Digital Education:

Primarily Digital Education has 3 components:

1) The content
2) The technology platforms
3) The delivery infrastructure

II. EMERGING TRENDS OF DIGITAL EDUCATION

2.1. Social media

Progress of social media as a learning tool has been noticed in a big way. It has been used by many teachers and students as an integral part of the whole learning experience. Social media properties are also a great source of generating networking opportunities to build social activities and prospective employment on a cost effective basis due to ability of sharing information anywhere anytime

2.2. Digitalized classroom/Flipped Class rooms

Full classrooms can be made accessible by teachers through digital screens, enabling each

child to get the same base content. New technology called cloud technology is being used by students these days wherein they can easily submit and review their assignment regularly.

2.3. Interactive Learning Resources:

With the advent of interactive devices such as flipped classrooms, mobile apps, etc various educators are coming up with interactive learning modules using the best of technology. People can collaborate with others spread across the globe to work on assignments and projects while sitting at one location,

2.4. Video based learning.

Video-based learning as a part of digital marketing has geared up in Indian Education Sector and has made education engaging, entertaining and exploring. The wonderful apps, podcasts, videos, interactive software, e books and online interactive electronic boards enable learning out of leisure with creativity, and entertainment on cards.

2.5. Massive open online course (MOOCS) & Other distant learning programs

Unlimited participation and open access via the web is provided by massive open online course (MOOC). India is considered to be the biggest market for MOOCs in the world after the USA. High quality learning with the help of internet connectivity is provided by MOOCS. Success of MOOCS is due to two foremost reasons.

1) In India is millions of Indians live in poverty and are unable to afford or gain access to a higher education
2) There are more applicants than seats in the Indian Universities.

2.6. Interactive Software – K12 sector Game based learning

Today the world is of Y-generation people who are acquainted with the technological developments taking around them, and they are also surrounded with the required skills and abilities. K-12 creates the game based learning environment, which enables the learner to easily get the word of education in India and give us a better self-trained Y generation.

III. ADVANTAGES OF DIGITAL LEARNING

The following are the advantages of Digital Learning:

3.1 No Physical Boundaries

Digital Learning has no locational and time restrictions. In digital leaning, there is no physical restriction and the learner can attend the sessions anytime, anywhere according to his/her comfort.

3.2 More Engagement

Digital learning is a more engaging experience as compared to traditional learning. Through digital learning, a course can be designed in a way that makes it interactive and fun through

the use of multimedia.

3.3 Cost Effective

Digital learning is cost effective way of education as compared to traditional learning.

This is directed towards both learners and teachers. As textbooks often become obsolete after a certain period of time, e-learning is definitely a cost effective way of learning because of the reduced cost.

3.4. Collaborative Learning

The concept of collaborative learning is also helped by digital education where all the minds can converge to create a unique learning experience that transcends national boundaries. Digital tools have been launched by universities and colleges to foster access to education online in order to bring social inclusion. A teacher could host their asynchronous assignments on these collaborative platforms such as Google Docs, Google Drive, Google Hangouts, MS Teams, SlideShare, Minecraft, Kahoot, Mural, Voice Thread, Edmodo, Skype, etc. for students to discuss, collaborate, listen to others, assess peers, reflect, and make it an immersive learning experience

3.5. Advantages to Academic Institution

Academic activities can be easily managed by academic institutions with the help of digital education. Some of the important benefits are:

- Time and money of the Institution will be saved.
- Online exam can be conducted and publish the exam results quickly.
- Advantages over other schools and colleges which cannot provide such integrated feature-based learning and management system.

3.6. Advantages to Students:

As all the study contents will be taught in the classroom through multimedia slides, it creates interest and enthusiasm among the students.

Students who are shy and hesitant can be empowered by the teachers in classrooms with the help of web tools like message boards, forums and online lectures.

Some other benefits to them are:

- They can easily view class assignments, their daily time-table, any events planned in school etc. from home.
- They are able to prepare projects and presentation online.
- They can take online exam and view their results.
- They can easily collect teaching contents of missed lecture online.
- They can access library online.

3.7. Advantages to Parents:

Parents can view all the information of their ward from comfort of their home or office with the help of digital education. Some of the other benefits are:

- Parents can view their child's attendance record, progress in syllabus, timetable, etc.
- They can easily check the subject taught in school, homework given to their ward, any future assignments and projects and guide the ward accordingly to participate and practice.
- Easily view internal and semester exam schedule and results.
- They can easily pay the school fees and other activity charges.
- They can get information on various school events, notices, holidays and can track the presence of ward in the classroom /outside the class.

3.8. Advantages to Teachers:

The best part of digital education is that teacher can create resources just once and use it multiple times for the generations to come. Teachers can customize educational products based on the personalized need of individual learners with the help of digital education.

Some other benefits are:

- Teachers can manage their class time and teaching content effectively.
- They can easily avail the school as well as class related information through web.
- They can check daily time-table, assignments, teaching history, events and holiday list, self as well as student attendance etc.
- It will helps in explaining the difficult content easily and in effectively.

3.9. Advantages to Principals:

Some of the important benefits to principal are:

- Easy to manage all the school/college activities.
- In case if the he is on leave, he will be able to access all the school information online and manage the school easily.
- He can view teachers' teaching progress and students' performance.
- He can assign tasks to other staff members and give remarks for their works.

IV. CHALLENGES OF DIGITAL EDUCATION

Every improvement has two sides of coin, with one leading to advancement and development and other relates to certain challenges associated with the implementation of this advancement.

It has been rightly said,

Digital learning should be more about the human touch than just machines.

The following are the challenges of digital learning:

4.1. Shortage of trained teachers due to resistance to change

A major obstacle in the use of digital education in rural area is the lack of knowledge and skills. There is a shortage of teachers, formally trained on digital technology. In some of the academic institution in rural areas, school teacher and college professors are not interested in using digital tools for conducting classes.

4.2 Learners Motivation

Classroom which are run in the form of a seminar and discussion have the advantage of accountability and supervision. Therefore, it becomes rather important and a big challenge on how can we keep students motivated enough to complete the course.

4.3. Technological Skills of Learners

The Digital Learning implementation will be dependent upon the computer literacy of the users. The ability of the learner's to access and interact with the course material dictates the utility he will get out of the program.

4.4. IT Resource and internet connectivity related challenges.

Poor internet connectivity in rural areas and some part of urban areas is one of the main challenges for digital education in India. Majority of population across India has still no access to internet and a large population in rural areas is still illiterate in the field of digital technology.

4.5. Language and content related Challenge.

Languages is one of the main barriers for the development of digital education in India. There are several different languages in different states that have been spoken all across country. Providing all the digital content in all these regional languages some time becomes cumbersome for the agencies.

4.6. Poor maintenance and upgradation of digital equipment.

In rural areas maintenance and upgradation of digital equipment is one of the major challenge. This is largely due to budgetary constraints by government. The digital education projects in rural schools are not self-sufficient.

4.7. Insufficient funds

In developing countries like India, digital technology implementation into education systems is a difficult task as it requires huge funds and infrastructure.

4.8. Technology continuously changing

Unfortunately, technology is always changing, so one should not expect to be using the same tools forever. Instead, one should have a plan and budget in place for upgrading technology.

4.9. Not a substitute for human interaction

Although humans have started using virtual assistants more regularly, they are still not substitutes for human interaction. As is evident from the following saying

Technology can never replace great teachers but technology in the hands of great teachers is transformational ~George Couro

Teachers should not let the digital tools "take over" and step aside Instead, teachers should use digital resources as supplemental and complementary tools for the classroom.

4.10. Unequal access for all students in and out of school

Despite having school WIFI and a great collection of digital tools, does not mean the student population has these devices (or WIFI) when they go home. Some schools are providing students with laptops or tablets to overcome this challenge.

4.11. Software is not optimized for mobile devices

Mostly students use their cell phones (and data) for internet access as they do not have internet access at home, Therefore, it is important to make sure all digital resources are optimized for mobile devices.

4.12. Security Issues

More activity online leads to more security issues. To combat security issues, school should invest in security. The basics of internet safety and security issues need to be taught to students and teachers.

V. Tools for Digital Education

Following tools of digital education can be used for encouraging, enhancing, and managing learning.

5.1. Moodle: The name Moodle is an acronym for Modular Object Oriented term Development Learning Environment and is a course management system through the internet The Moodle learning platform is based on strong pedagogical principles, providing private learning space.

What teachers can do with Moodle:

Teachers can create online courses, Open forums, Upload files and lessons, Create online tests and examinations, Chat sessions can be organized, Online quiz, You Tube recordings can be embedded on linked in the moodle, Self and peer assessment and Upload online notices.

What students can do with Moodle:

Students can chat with other students, upload homework and test, download files and lessons see online notices and news, take part into forums, instant messages

available at www.nuepa.org or www.moodle.org

5.2. Prezi

Prezi is cloud-based presentation software which helps in creating, giving, and tracking beautiful interactive presentations. Prezi is a novelty tool that leads to all the content in one slide instead of single slide. One can put content on a large canvas.

5.3. Self CAD

Self CAD is a cloud-based 3D CAD free software package for students. It provides an authentic, 'real world' 3D design experience and very easy to use. Self CAD provides a database of already completed 3D printable designs, making thousands of 3D objects available for immediate 3D printing.

5.4. Google Forms

It is a web based app. Google forms app is used to create forms for data collection purposes. Students and teachers can use google forms for surveys, quizzes and event registration.

5.4. Quizlet / Quizlet Live

Students and teachers can create and share their own learning materials, including flashcards and diagrams using quizlet platform. Free in-class quiz game, produced by Quizlet, that can then bring these learning materials to life through Quizlet Live.

5.5. Google Classroom

A powerful community based social tool for learning is provided by Google Classroom. Students can post questions and receive answers from their teachers and fellow students. Furthermore, It allows teachers to post intriguing questions and lesson materials for review at home. After being integrated with other Google products such as Google Forms, can be a great way to get feedback from students.

5.6. Adobe Spark Video

Spark Video belongs to Adobe Spark suite. With the help of this application students can produce short, animated, narrated explainer videos. Students can easily add video clips, icons, and voice, photos as well as professional-quality soundtracks and cinematic motion to their video creations. Video and blog

making is a great way to engage students creatively, and an 'out of the box' approach to class projects or reviewing learning materials.

5.7. Khan Academy

With Khan Academy one can learn anything; all for free. Videos, interactive activities, and other challenges are the ways of presenting lessons. Khan Academy is a great way to supplement teaching, provide extra work to gifted and talented students or help those who are struggling with certain content.

5.8. Seesaw

Students can document, showcase and reflect on what they are learning at school with the help of learning portfolio application Seesaw. Parents can access to the work of students as well. Seesaw is the tool that is incredibly popular with teachers and a great way to motivate students due to collective monitoring of learning by students, teachers, and parents.

5.9. Edmodo

Edmodo is an educational tool that connects teachers and students and is assimilated into social network. In this online collaborative groups can be created by one teacher and he can administer and provide educational materials, measure student performance and communicate with parents.

5.10. Wikispaces

Wikispaces is a great web based resource that allows us to store links, photos, videos and we can ask others to share files, videos, photos and other educational resources. Teachers and students can use wiki for schools and colleges to upload resources based on the subject matter and material they teach in the classroom.

VI. SUCCESS OF DIGITAL EDUCATION IN INDIA

Globally India holds a significant place in the field of education. More than 1.4 million schools exist all over the country having over 227 million students enrolled across different fields and more than 36,000 higher education institutes. India has become the second largest market for digital education after the US. There are some major investment and developments that have taken place to promote the digital education in India. Some of them are:

- Training and skills development institute NIIT is planning to offer online courses from leading international universities to about 5 lakh people over the next three years with US-based edX.
- Byju's, which is also a digital education start-up, has raised US$ 50 million from the Chan Zuckerberg Initiative, founded by facebook founder Mark Zuckerberg for the development of digital education in India.

• Online and classroom-based certification courses offered by Neev Knowledge Management Pvt. Ltd under the brand name Edu Pristine has raised US$ 10 million from Kaizen Management Advisors and DeVry Inc for the development of digital education in 15 cities across the country.

• Intel Corporation, a US based multinational technology firm is planning to provide optimised learning solutions and extended computing technologies to students and schools across the country.

- In the field of information technology, the Cisco Systems plans to invest US$ 100 million in India for the development of digital education which will include opening of six new innovation labs, which will help to train around 250,000 students by 2020.
- Tata Trusts which is the part of the Tata Group and Khan Academy are starting web based free learning portal to provide free digital education in India.
- Ignis Careers and SEED, Hyderabad-based education start-ups are working to provide low-cost school education with the help of digital technology.

VII. WHY DIGITAL EDUCATION IS THE FUTURE OF LEARNING IN INDIA

"Technology can become the 'wings' that will allow the educational world to fly farther and faster than ever before; if we will allow it." – Jenny Arledge

There will be greater convergence of digital and traditional teaching-learning mediums with the internet becoming far more affordable and accessible. The education sector will witness the proliferation of small, medium and large scale edutech start-ups who will offer a variety of innovative digital products to academic institutions in days to come.

The government is also taking radical steps to come up with policies that will help boost the digital education in the country. Efforts are being made by govt to improve the quality of digital infrastructure across the country and to help facilitate the use of innovative educational tools.

In the days to come, like all other professions digital education will see noteworthy changes in the way universities and colleges provide education.

The design and delivery of educational courses being offered by universities and colleges in India will be improved by knowledge management tools of advance Learning Management Systems (LMS) .

All language barriers are also being overcome by digital technology. Now learning resources can digitally be made available in regional languages as well. Through e-learning and m-learning students and teachers can get access to the vast pool of knowledge content. Freely accessible media are being offered for learning, teaching and research purposes by online education. Students can engage with a wide spectrum of study material freely available on the internet thus creating an ecosystem of self-learning.

Indian youth is preparing itself to the learning needs and challenges of globalized economy. The education sector in the country is bound to re-adjust itself profoundly both in terms of how we learn and what we learn in view of digital transformation. Today's youth can be encouraged by digital education in many ways to learn and engage themselves in the vast sea of knowledge being freely made available to them through the digital revolution. If the benefits of technology are made available to every doorstep of the country's household, our nation's young population will certainly prove to be a demographic dividend.

Conclusion

To sum up, it can be said that despite certain challenges future of India is being determined by digital education that will take the country to a new pedestal of socio-economic growth and prosperity. The way education is being imparted in schools and colleges has been transformed with the advent of new technology-aided learning tools such as smartboards, MOOCs, tablets, and laptops, etc. The role of teachers today is to provide comprehensive feedback and high-quality assessment of the students rather than simply distributing knowledge. We can notice a drastic change in educational set ups and application of digital education in these days of pandemic. Real spirit of digital education was observed by plenty of webinars, live interactive classes by Zoom, Google Classroom, Webix etc. As this medium gained popularity no educational activity was stopped even in past two months of lockdown globally and people truly could feel the blessing of digital education. Lets pledge to make this blessing an inevitable part of our education system.

REFERENCES

1) Chauhan A. Eleven Digital Education Tools For Teachers And Students. Weblog Retrieved from http://elearningindustry.com/tools-for-the-digital-classroom-top-10 (Accessed June 11, 2020)

2) Dua S, Wadhawan S, Gupta S. Issues, Trends & Challenges Of Digital Education: An Empowering Innovative Classroom Model For Learning. *International Journal Of Science Technology and Management*. 2016; 5(5): 1537 Retrieved from http://www.ijstm.com/images/short_pdf/1463159589_1593ijstm.pdf (Accessed 12, June2020)

3) Gond R. A study on digital education in india: scope and challenges of an indian society. *Anveshana's International Journal of Research In Regional Studies, Law, Social Sciences, Journalism And Management Practices.* 2017; 2(3): 12-18 Retrieved from www.anveshanaindia.com (Accessed 8 June 2020)

4) Kaur N. Higher education: Challenges, trends and issues in digitalization *International Journal of Applied Research* 2019; 5(SP 4): 68-71 One Day National Seminar Digitalization of Higher Education (2nd March, 2019) Retrieved from http://www.allresearchjournal.com/archives/2019/vol5issue4S/PartC/Sp-5-4-25-609.pdf (Accessed 12 June, 2020)

5) Kaur H. Emerging issues and challenges in digitalization of higher education International. *Journal of Applied Research* 2019; SP4: 218-221 Retrieved from http://www.allresearchjournal.com/archives/2019/vol5issue4S/PartG/SP-5-4-79-379.pdf (Accessed 14 June, 2020)

6) Kulkarni S. Future Perspective of Digital Education In India. Adoption of social media in academia. (Asma) blog Available from https://www.asmaindia.in/blog/future-perspective-of-digital-education-in-india (Accessed 13 june, 2020)

7) Lakshmi N. V. Digital Education In India International. *Journal Of Innovative Research In Information Security (Ijiris)* 2016; 9(3) : 62-68 Retrieved from www.Ijiris.Com (Accessed 11 June, 2020)

8) Lynch M. How to overcome 10 digital learning challenges (May 12, 2018) The Tech Edvocates Weblog Retrieved from https://www.thetechedvocate.org › how-to-overcome-10-digital-learning-c.. (Accessed 10 June,2020)

9) Patel J. M. Web based tools of technology in future teaching learning strategies. *International Education & Research Journal [IERJ]*. 2017; 3(1): Retrieved from ierj.in › journal › index.php › ierj › article › download (Accessed 10 June, 2020)

10) Raja B, Kishore R. Innovative Initiatives of Digitalization and Obstacles in Indian Education Sector in_ Saileela S and S. Kalaivani S. (Eds) *Education on Digital Cultural and Social Media* ICSSR Sponsored National Seminar Annamalai University, Tamilnadu Retrieved from https://books.google.co.in/books?id=53zCDwAAQBAJ&pg=PA52&source=gbs sele cted pages&cad=2=v=onepage&q&f=false 12 (Accessed 12 June 2020)

11) Ralhan, B. Dev. Future trends of digital education in India by CEO, Next Education www.nextlab.in › online_coverage › Future_trends_of_digital_education_i...

12) http://www.educationinsider.net/detail_news.php?id=1326 (Accessed 12 June, 2020)

13) https://elearningindustry.com/digital-education-scope-challenges-developing-society (Accessed 14 June, 2020)