



The Impact And Challenges of Digitalization On Indian Education System

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Abstract:

In present India, digitalization is very important concept that is affecting entire world in various aspects and also in various field. In context of Indian education, digital education is developing gradually and all related aspects of education getting familiar with its ease and availability. Using technology to make access to every content , task or performance is becoming a common thing in education. Also the way education is being imparted and consumed has undergone a drastic transformation since the onset of pandemic. Learners , teachers and learning process has now moved to virtual classrooms and online learning has gained immense traction in recent years with the pandemic further accelerating its growth. Initially when simple objective of education was to develop maximum dimension of personality of a learner now it's turning into a battle ground of race and competition. In this present study , researchers have made an attempt to unveil the impact and challenges of digitalization on Indian education system.

Keywords: *Digitalization, Indian Education System***Introduction:**

Digitalization is the use of digital technologies to change a business model and provide new revenue and value producing opportunities. Digital technology such as electronic tools, systems, devices and resources that generate , store or process data , used in digitalization. Therefore digitalization in education refers to use of desktop, computers, mobile devices, the internet , software applications and other types of digital technology to teach students of all ages. The concept of digital education in India was not that much familiar before the era of 90's. it especially took shape during the pandemic of COVID , when education was totally shut off and for a long time providing education is totally stopped. Initially it was

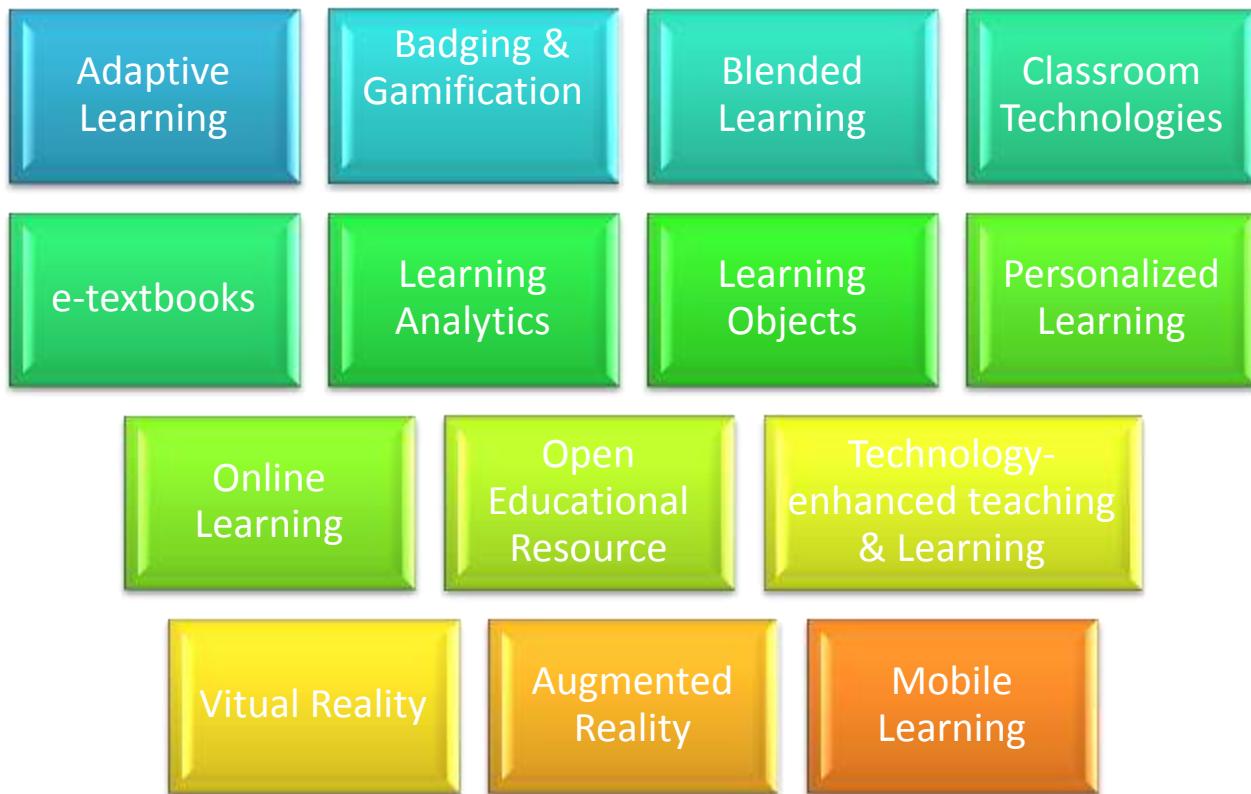
being initiated by private schools and technical higher education institutions to provide content through internet, live video classes and submission & availability of documents through online mode. Soon after , many government organization followed same concept with their additional personalized Apps. NCERT, NCTE, NIOS, Navoday Vidyalaya Samiti, Vidyalaya, Kendriya Vidyalaya Sangathan, CBSE, NEP etc. make so many efforts and contents by which students and teachers both can connect with content and can learn lively like a original experience.

Impact of Digitalization On Indian Education System-

Positive Impacts of Digitalization on Indian Education System:

- In Context of teaching learning experiences

Common Digital Learning Tools



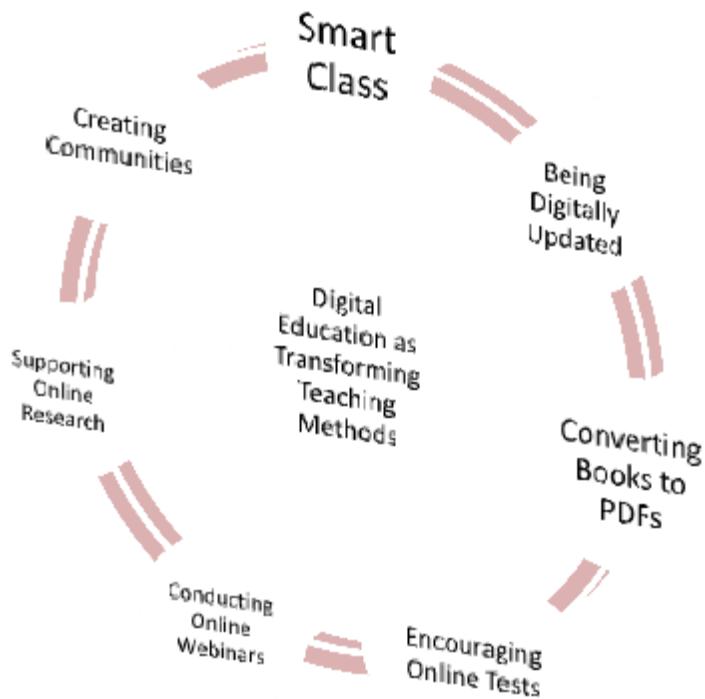
- **Adaptive Learning:** it is learning technology that utilizes the latest AI advances to measure, and analyze a learner's comprehension of a subject.

- **Badging And Gamification:** Badging & Gamification is a motivational tool that rewards the learner through the use of digital badges. The badges are obtained as a reward of achieving a certain level of difficulty. The collection of badges turns the learning process into a gamification process that helps to motivate a learner to attempt to conquer new learning material.
- **Blended Learning:** In blended learning both teachers and students meet for physical classroom training and also online through the use of interactive chat and virtual classrooms.
- **Classroom Technologies:** it refers to becoming classrooms modernized with help from virtual reality, 3D printing, cloud computing and social networking.
- **e-textbooks:** E-textbooks are electronic version of traditional textbooks. E-books are less expensive than traditional textbooks, are easier to update and more cost efficient.
- **Learning Analytics:** Learning analytics introduces data mining to the learning experiences. The analytics process involves the collection, measurement and analysis of data.
- **Learning Objects:** Learning objects help relate information, content and practice assessment into an easy to use collection. The collection focus is usually based on singular learning objective.
- **Personalized Learning:** it is a custom-tailored learning process that is created to help an individual learner. It is targeted for personal learning and teaching experiences.
- **Online Learning:** it is common platform which enables learners to advance their knowledge through the internet.
- **Open Educational Resource:** OERS are free, openly licensed , publicly assessable resources that can be used for educational purposes.
- **Technology enhanced teaching & learning:** it is basic use of technology by means during interactive teaching – learning experiences.
- **Virtual Reality:** Virtual reality learning allows learner to experience a first hand learning experience where the learner is able to interact inside the learning environment through the use of either a desktop computer, virtual learning glasses or head mounted display (HMD).
- **Augmented Reality:** Augmented reality (AR) offers learner an interactive experience that enhances certain aspects of the real world through computer generated

perceptual information. It includes learning and teaching experience through multiple sensory modalities such as visual, auditory, haptic somatosensory and olfactory.

- **Mobile Learning:** Mobile learning or M – learning is a term used for learning processes that can be engaged across multiple platforms in addition with both social and contextual interactions with videos and digital learning applications.

➤ **In context of teaching methods (An overview):**



➤ **Various efforts from Government of India:**

Common Education Portals	NCERT Initiatives	NIOS Initiatives
<ul style="list-style-type: none"> PM eVidya DIKSHA NISHTHA on DIKSHA Access through TV Channels on Air (Radio Broadcasting) Samagra Shiksha ICT Schemes 	<ul style="list-style-type: none"> Manodarpan And Sahyog : For mental health SWAYAM : Courses for XI & XII class subjects E Pathshala : Learning through App. ISL videos on PM eVidya DTH Tv Channel for Divyang students. Online Quizes 	<ul style="list-style-type: none"> E Content on SWAYAM Platform Online worksheets for secondary and senior secondary classes. Learner's Guide: for completing unfinished learning classes. Digital ly Accessible Information System(DAISY): For special need children. Web radio & community radio programmes Vocational courses, solving queries through mobile app, e-services for correcting learner's document

Navoday Vidyalaya Samiti Initiatives	NCTE Initiatives	CBSE Initiatives	Kendriya Vidyalaya Sangathan Initiatives
<ul style="list-style-type: none"> Online Classes for every class. Development of digital infrastructure like smart class,ICT tools, graphic tablets etc. Creation of e-content Online training 	<ul style="list-style-type: none"> Launched "Open Education Resources" (OERs) Developing study material by OERs. suggestion and adaptation of experts in study material by OERs. Received study material from different institution and groups under OERs. 	<ul style="list-style-type: none"> Online training, webinars and conferences Modules with activity learning. Online Virtual Labs (Olabs) for teaching lab experiments. Aryabhata Ganit Challenge : For testing competency in maths. Various online celebration like constitution day, fit india school week Various online competition like storytelling, international yoga day,reading challenge Various online mental health and well being sessions & online counselling. Online handbooks, Teachers Energized Resource Material (TERM), Online curriculum , Cyber safety handbooks etc. 	<ul style="list-style-type: none"> Online TLMs Academic Transactions such as PTM, Personal classes , assignments, projects, evaluation Teacher's Blogs Using Augmented classes Classes for remote areas like CABLE CONNECT Cahupal concept: for students not accessible on internet Online live classes and various social media platforms connecting with grandparents through folktales. Laboratory guidance classes Mental health and guidance programme Physical fitness and Yoga Ek Bharat Shreshtha Bharat: for common portal of study material SPICMACY classes: for awareness about Indian heritage, work art and culture. E - Library

Negative Impacts of Digitalization on Indian Education System:

There are major points which are listed below about negative impacts of digitalization on Indian education system-

- Online student feedback is limited: In traditional classrooms, teachers can give students immediate face-to-face feedback. Students who are experiencing problems in the curriculum can resolve them quickly and directly either during the lecture or during the dedicated office hours. Personalized feedback has a positive impact on

students, as it makes learning processes easier, richer, and more significant, all the while raising the motivation levels of the students. In digitalization procedure, on the other hand, still tends to struggle with student feedback. Students completing regular assessments become dissatisfied when they experience a lack of personalized feedback. The traditional methods of providing student feedback don't always work in an E-Learning environment, and because of this, online education providers are forced to look towards alternative methods for providing feedback. Providing student feedback in an online setting is still a relatively unresearched topic area, and it might take a while for any specific strategies to become fully research-based and proven to be effective.

- It can cause social Isolation: Digitalization methods currently practiced in education tend to make participating students undergo contemplation, remoteness and a lack of interaction. As a result, many of the students and teachers who inevitably spend much of their time online can start experiencing signs of social isolation, due to the lack of human communication in their lives. Social isolation coupled with a lack of communication often leads to several mental health issues such as heightened stress, anxiety, and negative thoughts.
- Requires strong self-motivation and time management skills :Lack of self-motivation among students continues to be one of the primary reasons why students fail to complete online courses. In traditional classrooms, there are numerous factors which constantly push students towards their learning goals. Face-to-face communication with professors, peer-to-peer activities, and strict schedules all work in unison to keep the students from falling off track during their studies. In the setting of an online learning environment, however, there are fewer external factors which push the students to perform well. In many cases, the students are left to fend for themselves during their learning activities, without anyone constantly urging them on towards their learning goals. Students taking online courses will find that they are often required to learn difficult materials in a comfortable home setting without any of the added pressure normally associated with traditional colleges. As a result, keeping up with regular deadlines during online studies can become difficult for those students who lack strong self-motivation and time management skills.
- Lack of communicational skill development in online students: Education through digitalization proven to be highly effective at improving the academic knowledge of the students. However, developing the communicational skills of the students is an area often neglected during online lessons. Due to the lack of face-to-face communication between peers, students and teachers in an online setting, the students might find that they are unable to work effectively in a team setting. Neglecting the communicational skills of the students will inevitably lead to many

graduates who excel in theoretical knowledge, but who fail to pass their knowledge on to others.

- Cheating prevention during online assessments is complicated: One of the biggest disadvantages of it continues to be cheating through various methods. Compared to on-campus students, online students can cheat on assessments more easily as they take assessments in their own environment and while using their personal computer. The students cannot be directly observed during assessments without a video feed, making cheat detection during online assessments more complicated than for traditional testing procedures. Additionally, without a proper identity verification system in place, students taking online assessments might be able to let a third party take the assessment instead of themselves, resulting in a wholly fraudulent test result.
- Online instructors tend to focus on theory rather than practice: Although this drawback of using digital platform is starting to be addressed and fixed by some of the more innovative digital platforms, the problem has yet to disappear completely. The problem is that a large portion of digital training providers choose to focus largely (in many cases entirely) on developing theoretical knowledge, rather than practical skills. The reason for this is evident – theoretical lectures are considerably easier to implement in an online learning environment than practical lectures. After all, without face-to-face communication and physical classrooms to use as a workshop, implementing practical projects in an online course requires significantly more prior planning than theoretical training.
- Lacks face-to-face communication: The lack of face-to-face communication ties together with many of the previously mentioned disadvantages of digital education. A lack of any kind of face-to-face communication with the instructor inhibits student feedback, causes social isolation, and could cause students to feel a lack of pressure. A lack of pressure is a disadvantage in the sense that it causes students to abandon their studies more easily. Constant nudging by professors may be undesirable for many, but it's an effective method for improving student retention.
- It is limited to certain disciplines: All educational disciplines are not created equal, and not all study fields can be effectively used in digital portals. For now, at least. It tends to be more suitable for social science and humanities, rather than scientific fields such as medical science and engineering which require a certain degree of hands-on practical experience. No amounts of online lectures can substitute an autopsy for medical students or real-life industrial training for a budding engineer. While this could change in the future, we are currently not yet a point where we can fully teach all professions solely through digital technology.
- Online learning is inaccessible to the computer illiterate population: In India very few number of population have knowledge about computer and having tools related to

digital world. Therefore, it would be easy to argue that online education is easily accessible to most people. A large number of population will have major trouble in accessing E-Learning as an educational method. In India, despite the country being one of the major players in the world of digitalization, there is still a large gap in computer literacy in the population. Until such gaps in society exist, online education will not be able to reach all citizens. Therefore, it's highly important that we look at online learning as an addition, rather than as a replacement to traditional education.

- Lack of accreditation & quality assurance in online education: If education through digitalization is to be considered as effective and authentic as traditional learning, it must be ensured that all online schools, colleges and institutions are qualified and accredited. Unfortunately, at the current point in time, there are still a vast number of online learning platforms which are unaccredited and where all the materials are quality checked by no one besides the instructors themselves. As such, poor quality assurance and a lack of accredited online learning providers continue to weaken the legitimacy of online education.

Suggestions to overcome problems:

Following suggestion can be taken to overcome the problems being faced in Indian education system-

- Researchers have demonstrated successful examples of peer feedback systems in online learning, which could be a potential solution to the problem of limited student feedback.. Additionally, this disadvantage is sometimes solved through video chats with professors, which function similarly to the professor's office hours during on-campus training.
- Some of the ways to combat loneliness and social isolation could be: Promoting increased interaction between online students, utilizing blended learning environments, monitoring the students for signs of social isolation.
- Building strong self-motivation and disciplinary skills is key to succeeding in an online learning environment. Additionally, face-to-face communication with professors can be substituted with online communication, and peer-to-peer activities should be promoted between online students similarly as it would be in traditional classrooms.
- Peer-to-peer group activities and online lectures which require communication must be used even in an online learning environment. In doing so, we can ensure that E-Learning does not fail to teach students the communicational skills necessary to succeed in real working environments.

- In order to protect the authenticity of digital education, anti-cheating measures must be put in place by any online education institution. The most popular anti-cheating tools currently used in digital learning platform are online proctoring systems such as Examity, which use various anti-cheating measures such as automated ID verification and machine learning to detect fraudulent test-takers.
- Implementing hands-on student projects in conjunction with 1:1 mentorship are some of the most effective ways of developing practical skills in online students. There are several examples of successful practice-based online courses on platforms such as Udacity and Springboard.
- Face-to-face communication must be substituted with another method of communication. For example, video chats, discussion boards, and chatrooms could help deal with the negative effects associated with a lack of face-to-face communication during online interactions.
- For some disciplines such as medical education, blended learning could serve as an excellent alternative to fully online learning. In the case of nursing students, research showed that blended learning courses achieved similar posttest results as traditional course formats while increasing the satisfaction ratings of the participating students significantly.
- Finding a solution to the complex problem of raising computer literacy is no easy task. However, initiatives such as Digital India show promise in improving the computer literacy rates amongst the population.
- There are numerous considerations for quality assurance of learning through digital mode, and they must be followed in order to ensure the authenticity of digitalization. Additionally, there are accreditation management systems such as Creatrix which provide a centralized solution for the accreditation process.

Conclusion:

The purpose of digitalization in education is to accessibility of education for everyone without any hindrance and flexibility of place so that learner and teacher both are comfortable on their working zones. This concept in modern era of Indian education system brings so many bright parts for learning platform such as big knowledge span, availability of many options of knowledge providers, individual and self pace learning, economic and time saving, easy handling and free from keeping so many binding hard copies, effective working strategies, attractive and sustainable content etc. but also on the other hand, India is under developing country where most of the population lies under

very less facilities and dealing struggles with daily life activities. For those, it is very tough task to make these population firstly available of tools related to their learning and secondly make them comfortable with its usage and functions. It is also undeniable that in past few years digitalization in education spread so fast in India. Young and teenagers specially find themselves comfortable with digital education. Therefore , it is obvious that digitalization in education system is working at some points but there are lots of thing to improve and to add in context of learner, teacher and learning process.

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