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Impact of technology on education

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Abstract

Technology is a great weapon that humans have created. It is a blessing in difficult times like the pandemic and a necessity to compete in today's world. Our kids are aware of this age of technology, which impacts their lives. From the kindergarten level to higher studies and research scholars, all are evolving around technology, which is a great part of students' lives. The world of education is changing every day because of the introduction of different technologies. Technology has greatly impacted school education. Now, children are using smart boards and learning things by watching and exploring. Earlier, the education system was different, but now, with dynamic conditions, everyone needs to change according to the new era. Technology has had a greater positive impact on education. With the advanced usage of the internet and the widespread use of devices such as laptops, tablets, smartphones and smart boards, students and teachers both have ample information within seconds. Technology definitely reduces the burden of manual work and increases the efficiency of students and teachers. Still, there are a few challenges to using technology that is freely accessible to young students. Where parents and teachers require strict monitoring. However, technology is important, and we can say that it has become an essential part of our lives.

Keywords: Technology, impact, dynamic, challenges, education.

Introductions

Technology has revolutionized every aspect of human life in recent decades, and education is no exception. From classrooms equipped with smart boards to online learning platforms like Zoom, Google Meet, Microsoft Teams etc., accessible worldwide, technology has transformed the way we teach and learn, and every student-teacher is influenced by this revolution.

The idea of this study is to provide insight into how technology has impacted students' and teachers' everyday lives.

Whether you are from school where animated based learning through smart boards and projector is used for students to make them understand the concept in play way or you are a graduate or post graduate student who need to understand difficult concept, they used different technology-based tools. A research scholar is privileged to have technology for completing his/her research in more effective way.

The institute like IIM and IITs are offering courses for working professionals through online mode which give them an option to have studied from prestigious institute while working.

Technology enables personalized learning experiences tailored to individual student needs. Today is the time of learning by doing and explorative way of learning. Adaptive learning platforms use algorithms to access a student's strength and weaknesses, offering customized lesson plans and feedback. This approach focusing on diverse learning styles which allowing students to move forward at their own pace and focus the areas where they need improvement.

Now artificial intelligence is one of the big sources of learning and challenge for the today's world. AI definitely ease the work of today's learning environment. With a few clicks we all got result of our requirement and every easy to access. But pose a threat to humans also who are working under system and providing data to organization.

Objective of the study

- To provide the insight how technology has impacted of everyday life as student and teacher.
- How much we have dependent on technology for education and learning.
- Role of government to encourage the technology-based learning.
- Analysis of challenges facing due to extensive use of technology.
- Analysis of positive impact of technology on education and benefits getting out of these.

Research methodology

Research question developed is that how much extent the technology impacted life of students and teachers and what are Indian government role to provide the technology to remote areas.

The Exploratory Research used in this study which is based on secondary research method.

The secondary data is collected for the study through online websites, case study, previous published research papers, government website etc.

Findings

Based on carefully collecting data from secondary research few things come into the light that technology is necessary and important for today's dynamic world of education. In elementary school education to secondary education all educators are focusing and relying on technology-based learning. Each school has adopted the approach towards technology and encouraging teachers and students to motivate on the same path. The various tools of technology are used these days for educating and learning.

Higher educational institutes are already into the technology-based learning. Whether we talk about courses from foreign universities or inland universities everyone is equipped with technology to better education system.

In this direction, the Indian government, the Ministry of Education, has taken a leap by launching various modes of learning or platforms to teach students digitally and reach the students in times of calamities.

We also find that various challenges impacted the technology-based education system. Technology has impacted life of students in major way but the extent to which is good need to be clear. the young minds are creators of new technology but if not provided the right directions they can be destructors.

Positive impacts are seen which cannot be untold. Teachers are efficiently working on better lesson plan for students. They are providing personalized lesson plans for students in special needs. Because of technology students with disabilities or special needs can be educated which is great for human kind.

Impact of technology on school education

1. **Enhanced Learning Experience:** Technology has transformed the traditional classroom into a dynamic, interactive environment. Interactive whiteboards, educational apps, and multimedia resources make learning engaging and accessible to students with diverse learning styles.
2. **Personalized Learning:** Adaptive learning platforms and educational software tailor instruction to individual student needs, allowing for personalized learning experiences. Students can progress at their own pace,

receive immediate feedback, and access supplementary materials to reinforce their understanding of concepts.

3. **Access to Resources:** Digital libraries, online databases, and educational websites provide students with access to a vast array of resources beyond traditional textbooks. This democratizes education by ensuring that students from all backgrounds have access to up-to-date information and learning materials.
4. **Collaboration and Communication:** Technology facilitates collaboration and communication among students and teachers, both inside and outside the classroom. Collaborative tools, video conferencing platforms, and online discussion forums enable students to work together on projects, share ideas, and connect with experts and peers globally.
5. **Preparation for the Future:** By integrating technology into the curriculum, schools prepare students for the digital age and the skills required in the workforce. Proficiency in digital literacy, critical thinking, problem-solving, and collaboration is essential for success in the 21st-century economy.

Impact of Technology on Higher Education

1. Accessibility and Flexibility: Online learning platforms and distance education programs make higher education more accessible to non-traditional students, including working professionals, parents, and individuals living in remote areas. Flexible schedules and asynchronous learning options accommodate diverse student needs.

2. Global Reach: Technology enables universities to reach a global audience of learners through Massive Open Online Courses (MOOCs) and virtual classrooms. Students can enroll in courses offered by prestigious institutions worldwide, expanding their academic horizons and accessing expertise that may not be available locally.

3. Innovative Teaching Methods: Higher education institutions are adopting innovative teaching methods and digital tools to enhance the learning experience. Virtual labs, simulations, and immersive technologies like virtual reality (VR) and augmented reality (AR) provide hands-on learning experiences in fields such as science, engineering, and healthcare.

4. Lifelong Learning Opportunities: Technology facilitates lifelong learning and professional development by offering a wide range of online courses, webinars, and micro-credentialing programs. Individuals can acquire new skills, earn certifications, and stay abreast of industry trends to advance their careers and remain competitive in the job market.

5. Data Analytics and Personalization: Learning analytics platforms analyze student data to identify patterns, trends, and areas for improvement. Educators can use this information to personalize instruction, provide targeted interventions, and support student success. Predictive analytics also help institutions identify students at risk of dropping out and intervene proactively to improve retention rates.

Tools that help in learning for students

Learning Management Systems (LMS): LMS platforms like Moodle, Blackboard, Canvas, and Google Classroom

serve as centralized hubs for managing course materials, assignments, grades, and communication between students and instructors. They provide a digital space for organizing content, facilitating discussions, and tracking student progress.

Educational Apps and Software: A wide range of educational apps and software cater to various subjects and learning styles. These include interactive textbooks, language learning apps like Duolingo, math and science simulations, coding platforms like Scratch and Codecademy, and productivity tools such as Evernote and Microsoft Office.

Online Courses and MOOCs: Massive Open Online Courses (MOOCs) offered by platforms like Coursera, edX, and Khan Academy, LinkedIn learning, Udemy provide access to courses from leading universities and institutions worldwide. These self-paced or instructor-led courses cover diverse topics and enable learners to acquire new skills and knowledge from anywhere with an internet connection.

Multimedia Content and E-Learning Resources: Multimedia-rich content such as videos, animations, podcasts, and interactive tutorials enhance traditional learning materials. Platforms like YouTube, TED-Ed, and Khan Academy offer a wealth of educational content curated by experts in various fields, making learning engaging and accessible.

Collaboration Tools and Communication Platforms: Collaborative tools such as Google Workspace (formerly G Suite), Microsoft Teams, and Slack facilitate communication and collaboration among students and educators. These platforms enable real-time messaging, file sharing, video conferencing, and collaborative document editing, enhancing teamwork and interaction in both synchronous and asynchronous learning environments.

Adaptive Learning Platforms: Adaptive learning platforms use artificial intelligence (AI) algorithms to personalize learning experiences based on individual student needs and preferences. These platforms assess student performance, adapt lesson content and difficulty levels accordingly, and provide targeted feedback to optimize learning outcomes.

Online Assessment and Feedback Tools: Online assessment platforms like Quizizz, Kahoot! and Google Forms allow educators to create quizzes, surveys, and assignments for formative and summative assessment.

Digital Libraries and Open Educational Resources (OER): Digital libraries and OER repositories offer a wealth of free and openly licensed educational resources, including textbooks, articles, videos, and lesson plans. Platforms like Project Gutenberg, OpenStax, and OER Commons provide educators and learners with access to high-quality educational materials that can be customized and adapted to suit their needs.

Positive impact of technology on education

- Technology makes the teaching and learning process more interactive because digital cameras, projectors,

power point presentation. All these sources help students to understand any concept easily.

- It has globalized the teaching and learning process because schools are situated in different states or with the help of technology students can participate in video conferences even in any school.
- It has removed geographical boundaries. Students or teachers can get information from all over the world or improve their skills by sitting at one place.
- It has provided many information options to the students which improve the skills of the students.
- Technology helps students to be creative.
- Technology helps students to learn with fun and enjoyment.
- With the internet, learners can now access lectures, videos, and other educational materials from some of the world's top experts and institutions.
- Now teachers have become facilitators to students and they provide guidance to reach their full potentiality.

Challenges of Technology

- Technology distracts students because most of the time they use technology to entertain themselves.
- It costs a lot to install the technology that is why many students are not able to afford it.
- The institution must face the problem of space because a proper computer lab has to be set up to use the technology but due to lack of space only some students get computers for study.
- Due to technology, students and teachers must face health issues. Using the computer for a long time also causes poor eyesight and back pain.
- Due to technology, students are losing their confidence, they feel very shy in communicating face to face.
- It is very important to upgrade technology timely.
- Students and teachers must face a lot of problems while using technology due to poor network infrastructure

Efforts of government to introduce technology-based learning (Indian context)

The ministry of education, government of India has taken many steps to make the education system more technological and efficient. In this regard few initiatives are taken mentioning here.

SWAYAM: Massive Open Online courses

SWAYAMPARBHA: View digital courses on TV

National Digital Library: E-Content

E-PG Pathshala: Gateway for e-books up to PG

Shodhganga: A reservoir of Indian Theses

E-ShodhSindhu: E-Journals

E-Yantra: Engineering for better tomorrow

FOSSEE: Free/Liber and Open-source software for education

Spoken Tutorial: Tutorial in IT application

Virtual Labs: Web-enabled experiments designed for remote operation

National internship portal, National educational alliance for technology

VIDWAN: Expert database and national research network

Shodh Shuddhi (PDS): Plagiarism Detection Software

Academic Banks of Credits

Conclusion and Suggestions

As reviewed many researches and data, it can be said that technology has impacted students' and teachers' life in a great way. The role of the teacher has changed now, and students are becoming self-learners through the help of technology. It is the need of the hour to learn and use technology in education and make an education system a technology-based learning system.

Around the globe, many universities have introduced courses to engage students, which is excellent for self-paced learners. The Indian government has taken a leap into this area and introduced many learning platforms through technology.

But the challenges of using technology cannot be ignored. Multiple challenges can be big hurdles in the future. For that, humans need to be prepared. One big question that has come up is the role of AI.

Will AI be a challenge for humans in the near future, or will it be a helping tool for learners? This should be handled properly without any harm to mankind.

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