

Opportunities and challenges of technology in higher education
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Abstract:

The entire world came to a standstill during the Covid-19 pandemic. No region in the world was an exception. During that time, the education sector was affected to a great extent. Therefore, there was a need for major changes in the education sector. So many educational institutions had to turn to online education. Various educational institutions, teachers, students had to face many challenges in the beginning. There are so many technology trends in higher education includes e-learning, block chain, VR/AR, and Artificial intelligence(AI), etc which will affect the next generation of students. Along with this, government policies supporting higher education and technological innovation brought about by widespread internet access and the advent of 5G have further accelerated the transformation of the higher education. There is no doubt that the New National Education Policy (NEP) 2020 will definitely bring significant educational reforms in higher education. An attempt has been made in these research papers to highlight the importance or opportunities and challenges of technology in higher education.

Keyword: Technological innovation, Artificial intelligence (AI), National education policy, Higher education, Skill-based education.

Introduction:

Technology is the application of scientific knowledge and skills to solve problems and achieve desired goals. We see that technology has made great strides in the last few decades in the field of information and communication technology (ICT), in various sectors of society such as business, health, entertainment and education. We see that in the 21st century, technology is emerging as an important factor in higher education. By using the changed technology, the usual traditional old education methods have changed and new technology has emerged. Due to this, we can see a radical change in the way of learning and mindset of students, the way of imparting knowledge of teachers, and the overall changed approach of educational institutions. Undoubtedly we can say that technology is an integral part of everyone's lifestyle and plays a very important role in higher education.

The nature of higher education is constantly changing according to the needs of the society all over the world. Keeping in view the needs and demands of the society, several emerging trends are shaping the higher education system. In the 21st century, technology has advanced rapidly in all fields.

The education sector is no exception to technology. Indian education system has undergone significant changes in recent times. There have been significant changes in schools. Higher education is increasingly being updated through technology.

The use of technology in higher education has many benefits for students. All in all, higher education is creating a lot of opportunities. It also supports personalized learning and facilitates communication and collaboration. Through technology, online learning platforms can make learning more accessible for students living in rural or remote areas. It allows students living in remote areas to learn and understand at a distance similar to physical methods. Along with this, students can collaborate through social media platforms

There are so many technical trends in higher education which are being used in education sector with high proficiency namely, E-learning, virtual reality and augmented reality, Artificial Intelligence(AI),Internet of things (IOT), Cloud

computing, Catboats, Gamification, Blockchain etc. By using these trends educational technology growing up rapidly.

Objectives:

1. To examine role of technology in higher education system in India.
2. To assess opportunities and challenges of technology in higher education.

Hypothesis:

1. Emerging technology is advancing and supportive to higher education.

Method of Data Collection:

This research paper is completely based on secondary data. The data for this paper is collected from Internet, books, newspapers, research papers, research journals, articles etc.

Opportunities of Technology in Higher Education

1. Accessible learning:

In fact we can say that technology has truly democratized education, as a student can access any education anywhere in the world at any time. With the influence of technology in the education sector, through online courses and virtual classrooms, students can access top-tier institutions and renowned teachers without geographical barriers.

2. Personalized learning:

Through adaptive learning platforms, students can use artificial intelligence to create educational content according to their needs. Students can learn according to their intellectual ability, receiving customized feedback and resources to enhance their understanding.

3. Engaging multimedia:

The traditional way of learning is now disappearing due to advanced technology. The days of boring lectures are now disappearing. As new technologies have entered the field of education, learning has become dynamic and engaging for students due to engaging multimedia elements such as videos, simulations and interactive content. Technology is now creating many opportunities for students to bring new ideas to reality.

4. Global collaboration:

Any student from any corner of the world is always ready and able to seamlessly collaborate on projects through virtual collaboration tools. Student can share their thoughts, ideas; fix their problems regarding any kind of project and share their view from any corner of world. Some universities have even adopted Google Classroom for seamless online learning for students (Arizona State University). Therefore, in the era of modern technology, every student has the opportunity to become a global student. Students can make their ideas public through online discussions. Also they can use video conferencing tools and collaboration platforms. Overall collaborative learning environment encourages the development of critical thinking, problem solving and essential teamwork skills.

5. Data driven insights:

In the era of modern technology, teachers can now monitor the individual performance of students. So if a student has any problem, it can be identified early and his doubts can be resolved quickly. It can be used to dramatically improve student performance, save time and make positive changes in learning based on the data obtained by providing them with appropriate instruction.

6. AI and automation:

AI-driven chatbots and virtual assistants are offering 24/7 support for students, answering queries and offering guidance, which is particularly valuable for remote and online learners.

Artificial intelligence (AI) is a high-tech computer technology that complements the cognitive functions of the human mind. These include reasoning, understanding, and learning. By using this technology we can communicate and solve different problems. AI has revolutionized traditional teaching and learning methods, helping to bridge the education and skills gap. With the use of automation we can carry out administrative and educational activities in less time.

7. Virtual reality (vr) and augmented reality (ar):

Extended reality consists of virtual reality (VR) and augmented reality (AR). A computer can simulate the illusion of reality. It can be done using special devices and systems like headsets and gloves. Augmented reality combines the real and digital worlds that do not need special equipment. From medical students practicing medical surgery in a virtual environment to history students exploring ancient civilizations through AR, all types of students can use this technology with confidence. Medical students can perform surgery in a risk-free virtual environment before operating on real patients.

8. Digital credentials:

So far only the traditional degrees obtained by the students were considered, but now if the education is done through online courses, its certificate, and micro-credentials earned through online courses are gaining recognition, allowing students to demonstrate their skills and knowledge.

9. Cost-efficiency:

Online education can be completed at a lower cost than education offered through traditional institutions. Therefore, poor students can get quality education on a large scale.

Challenges in Technology Adoption:

Although technology in education has many benefits, it faces many challenges in its implementation. Following are some major challenges for adopting technology in higher education;

1. Budget limitation:

There is a cost constraint when using new advanced technologies. Because it can cost more. And not every educational institution can afford the cost. Therefore, many organizations may find it difficult to reconcile the cost calculations in this regard. Financial constraints are the biggest obstacle to better access to educational technology for students. Lack of budget is a major challenge faced by educational institutions in the age of technology. Because not all educational institutions can be financially strong. Tools like Google Cloud can be a powerful tool for education, but not every educational institution can afford it financially. Hence, finding funding to implement and sustain technology for higher education can be a major barrier to its adoption

2. Lack of professional training:

Institutions sometimes struggle to find the skilled people required to properly implement and maintain the existing technology infrastructure in educational institutions. Technology is constantly changing. Therefore, it is feasible to advance the field of education by making more use of new tools, as the teachers are expected to do, and the students also have a big role in it. Although professional training for teachers, faculty, and staff requires time and money, it is essential if students are to expect the desired results from their technical experience.

3. Poor network infrastructure:

A robust network infrastructure, including fast, high-quality Wi-Fi at school and at home, as well as data privacy and security, access to digital resources, are essential if technology is to be used effectively in education. All students never get equal access to technology and high-speed internet which creates educational disparities and excludes vulnerable groups.

4. Resistance to change:

Both teachers and students need to be positive about adopting new Technologies and technological changes. Comprehensive change management strategies with training programs and support systems are needed to encourage them in technology. Many a times it is seen that teachers and students show reluctance to accept and implement technological changes. It doesn't mean that teachers don't like technological change, but they think it is a dangerous approach and also they are not trained enough. Moreover, many educational institutions cannot convince the importance of this technology

5. Unreliable devices and software:

Although technology is important in the field of education, reliability and consistency of equipment and software are essential to maintain its reliability and use in the future. It is very important for any educational sector to include a strong infrastructure for the use of technology. Because the success or failure of technology in the field of education depends on this facility.

6. Administrators unwillingness:

Although technology is important and necessary, many educational institutions find that administrators are unwilling or reluctant to embrace it immediately. Perhaps this is because the benefits of educational technology are not well defined. But as distance education grows and educational technology becomes more widespread, administrators are likely to change their role to complement technology.

7. No system in place to utilize technology in curriculum:

sometimes it observe that even though teachers are equipped with new technological tools such as tablets and smartboards, many teachers do not know exactly how to use technology in the curriculum or They show disinterest in it.

Not every organization can use the same technology as their needs may be different. So finding a technology solution that meets all of its specific needs is challenging.

Conclusion:

Due to the increasing use of technology, huge revolutionary changes are taking place at all levels of the higher education system. The quality of education is increasing to a great extent. Students no longer need to depend on the traditional education system for learning, as technology has changed the education system tremendously. Traditional forms of teaching and learning are being transformed into online and virtual environments. Although technology creates an effective environment in the field of education, it is very important to have the proper balance of trained teachers, management and students along with technology.

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