



## Various Technological Trends and Innovations Useful In Education System

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### Abstract –

Technology has changed the way that learning and comprehension may be accessed without relying on teachers, which was the definition of a traditional school. All levels of educational system are being significantly impacted by technological advancements. Emerging technologies like online learning, teaching aids, educational software, and others are diverting the traditional classroom setting. When establishing strategies and methods for managing and utilising technology in the educational system, it is essential to comprehend the consequences that technological developments have on students, instructors, and schools. They gained considerably deeper insight from this actual contact than they would have from reading books and attending lectures. As the twenty-first century progresses, we see how essential technology has become to our daily lives. Every aspect of society has been affected by technological advancements, which have changed how we go about our daily lives. It altered the way we study, work, communicate, and shop.

Although simultaneously experiencing an output and efficiency crisis, the education sector is sometimes seen as being reluctant to change. In times of tight budgets and increased demand, innovation may serve to boost educational quality and offer more "bang for the buck." This chapter examines what innovation means in the context of the education sector and how it can be measured most effectively. It also discovers that education is more innovative than other sectors in some ways and that there has been improvement across all countries, particularly in teaching methods. It examines what abilities are required to promote innovation more generally in the economy and whether educational institutions are assisting students in acquiring those abilities.

We live in a technologically advanced world today, and we have no intention of going backwards. Using technology does not diminish the value of instructors; rather, it helps them give their students a more effective educational experience. To prepare their children for a better future, teachers must consequently establish a balance between technology-enabled and outdoor learning.

**Keywords** – Technology, Quality education, Education system etc

### I. Introduction

Only when a sovereign's education is supported by appropriate educational technologies can a nation flourish. Students today are intellectually more advanced, so the grand old 19th century model of role-based learning, the "chalk-and-talk" system, which relies on the teacher or professor talking authoritatively while the students lend their ears passively and submissively, has diminished their capacity for inquiry, discovery, and experimentation. In order to further a high quality education, educators must include innovation's power into their T&L (teaching and learning) system.

#### Regarding Innovative Education Technologies

Innovative education supports the transition from lower order teaching (LOT) to higher order teaching (HOT) productivity by substituting a creative mindset for a grand old pattern. Teachers must change since students in today's well-informed, modern age demand more engaging content from their mentors. The core of innovation is getting the most out of a small amount of sporadic resources.

The current educational environment should be properly affected and strongly directed by technology. The core of the teaching and learning system has been modified by methodological innovation in the field of education. "Innovations welcomed the growth of technology as it was occurring in education," says Prakash Menon, President, Global Retail Business, NIIT Ltd. for ENN.

It has been determined after extensive research and studies that technology can convey the knowledge that students, businesses, and professionals want to learn, leading to unprecedented investments in the global ed-tech market. Technology like on-demand films, digital readers, online courses, mobile devices, and virtual

classrooms are continuously feeding the market and sating its appetite. Entrepreneurs and educational juggernauts are working hard to identify the possibility of revolutionary technology in order to meet the rising need of the market-recognized "edu-tech" enterprises. Educational institutions are constantly incorporating ideas into the creation of technologies that satisfy millennial desires to empower cutting-edge "edu-tech" resources outside of the box.

The Indian educational system is gradually embracing technology and valuing the fun of teaching and learning. With the emergence of new teaching and learning aids and resources, corporate and professional pedagogies are gaining tremendous benefits.

According to a survey, India has the largest K–12 educational system in the world, with more than 260 million students enrolled. This is mostly due to the Indian edutech sector's significant shift in focus towards the creation of cutting-edge educational goods and the promotion of superior learning experiences starting with early schooling. There are certain areas where future growth and innovation will be visible throughout time:

**System for Managing Learning:** On this platform, a computer programme aids in the coordinated delivery of a variety of courses. This method may be used in a variety of ways both online and offline. The best LMS is cloud-based learning, which enables thousands of students to pursue courses throughout the university. Model: It is a multi-platform model that will provide the pedagogies with a variety of online courses and video lectures.

**AI:** The most fascinating aspect of artificial intelligence is that it automates almost all forms of educational materials; it is a great resource for the educational system. Both the teacher and the student should use cutting-edge AI products and gadgets in order to complete their work effectively.

**Enhance Virtual reality use brand-new method of using education as a tangible item.** Worldwide software giants like Google, Samsung, and HTC have made significant investments in the creation of VR-based education applications. Students can break down big issues into manageable modules, and they even get a deeper comprehension and assisting with teaching. The most common instructional aids include real-world experience, chat boats, real-time support, etc. lectures from professors all over the world are broadcast on different video platforms. Several ed-tech businesses are moving towards support tools. Traditional instructors will soon be innovators, facilitators, and leaders due to changes in teaching strategies.

The answer is in how quickly students in the futuristic community adopt new technological tools. By examining every avenue for achieving the most technically optimum learning, edu-tech companies are generating innovations and developing future leaders. The patterns presented here demonstrate how the education and training sector will keep changing, how innovation will continue, and how the market will continue to have long-term effects.

### **Concerns & Scopes**

Computers in the classroom were the first innovative technology to be used in the field of education. Then came the World Wide Web, which was immediately followed by Web 2.0 and social media, which were the Internet's second coming. Education professionals have long engaged in passionate discussions regarding the effects of technology on teaching and learning, and discussions and arguments on the use of innovative technology in education have been ongoing. The results of discussions have occasionally been tenable and occasionally had unsatisfactory effects on teaching and learning.

It wouldn't be an exaggeration to argue that there are many aspects of education that have not changed much throughout the years, including the relationships between professors and students as well as those between students themselves and knowledge. This holds true even when technology is used. For instance, an e-book can replace a text book, but do the social interactions surrounding knowledge and education change as a result? Similar to the assessment, will our assessment systems alter if the pen and paper test is automated?

Use technology to replicate and reinforce the erudite, traditional linkages between teaching and learning. Nonetheless, there are a lot of undiscovered options that could provide opportunities using information and communication technology today. The terms "new learning" and "transformative pedagogy" are used to describe these possibilities. The use of creative technologies will push the limits of the educational process, deepen student engagement, and result in learning outcomes of the highest calibre that meet the demands of 21st-century citizens, governments, and enterprises.

For this reason, we aim to emphasise educational innovations in this research project as well as the introduction of cutting-edge technology, which we anticipate will support them. The concepts and methods of "omnipresent teaching and learning" in this study offer a wide range of potential outcomes.

Shaping the traditional 3-D and time-based boundaries of education is one of the possibilities.

The second possibility is to change the balance agency.

Possibility three is to Acknowledge learner differences and make use of them as resources.

Increase the diversity and mixture of representational styles.

Development of conceptualising abilities is possibility number five.

Possibility six is to Infuse the social mind of diverse cognition and collective intelligence with customised thinking.

Collaborative knowledge culture building is possibility number seven.

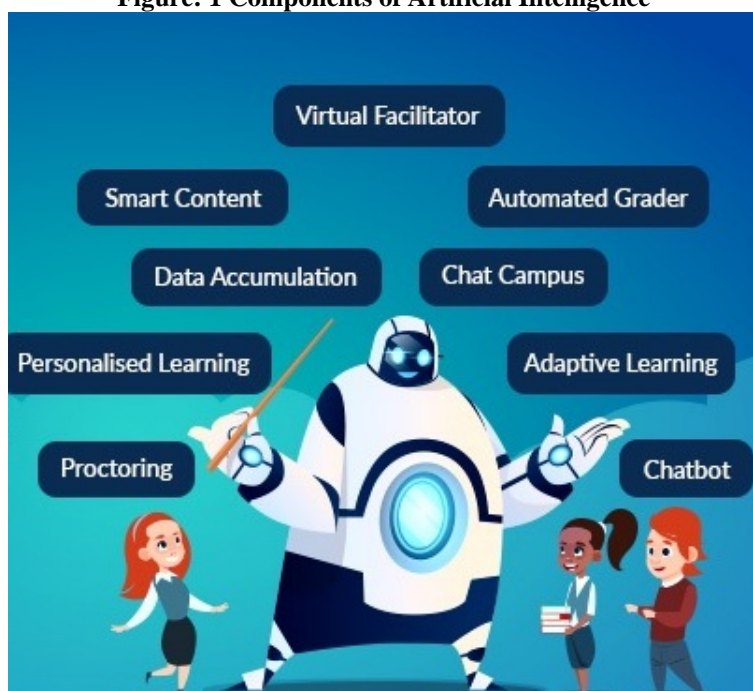
### **Some Technology Trends in Education: K-12 & Higher Education**

The rise of different technological trends is forcing educators to change their teaching strategies from K-12 to higher education. With every student learning at a different pace, teachers can hone in on the unique need of each individual student. Some of the current trends in education include:

#### **1. Artificial Intelligence**

According to the Artificial Intelligence Market in the U.S. Education Sector research, personalisation is made possible by artificial intelligence, which is gradually but steadily spreading throughout the American educational system. From 2017 to 2021, the market is predicted to expand by 47.5 percent. Similar to this, adaptive learning enables students to progress through the curriculum at their own rate.

**Figure: 1 Components of Artificial Intelligence**



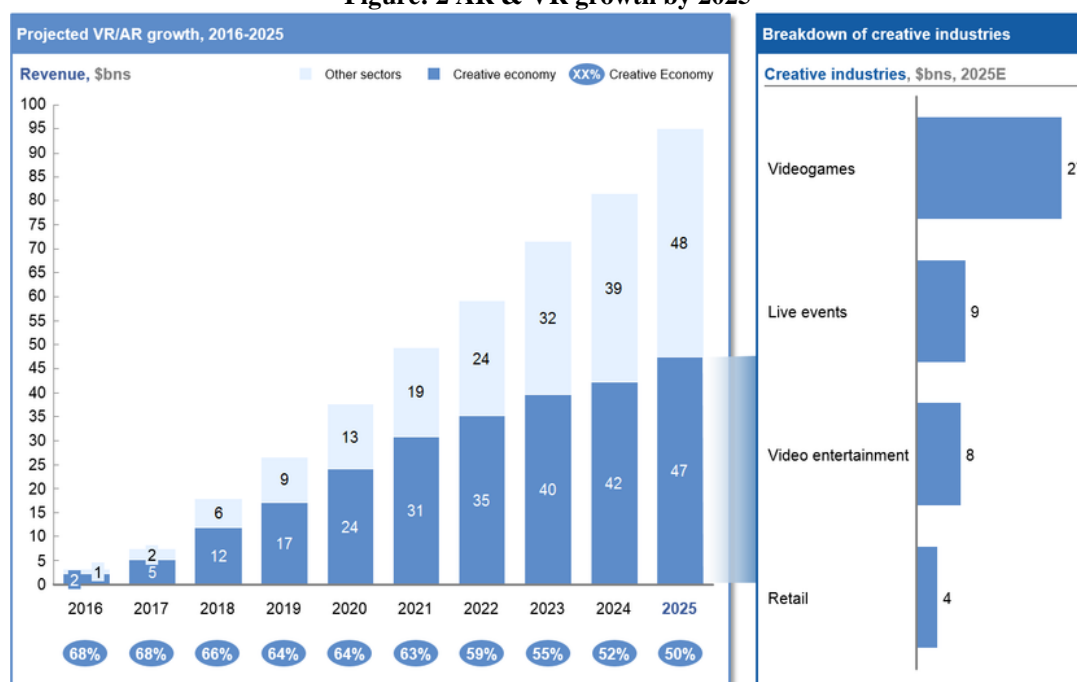
Source: Adapted from <https://ezeetest.app/9-applications-of-artificial-intelligence-in-education/>

The capacity of teachers and academics to concentrate on students' particular needs across several classrooms is a challenge. In the future, machines might be able to analyse students' facial expressions to determine whether they are having trouble understanding a concept and then modify the course accordingly. Yet, AI can free up teachers' time from administrative duties so they can spend more time with students.

#### **2. AR (Augmented reality) /VR (Virtual reality) / MR (Mixed reality)**

The employment of cutting-edge technology like augmented, virtual, and mixed reality is another trend in the digital transformation. Students are encouraged to collaborate and communicate with individuals around the world using these tools. Many VR programmes are available that are designed to make learning more enjoyable, alluring, and efficient.

Figure: 2 AR & VR growth by 2025



Source: Adapted from <https://www.weforum.org/agenda/2017/09/augmented-and-virtual-reality-will-change-how-we-create-and-consume-and-bring-new-risks/>

### 3. Redesigned Learning Spaces

In recent days, classroom design has undergone a significant alteration. As more and more institutions choose SMART boards, chalkboards are beginning to become outdated. Also, many classrooms now utilise SMART desks rather than traditional, individual desks to promote teamwork. As was already indicated, cutting-edge technology is escorting pupils on virtual field trips outside of the classroom and gradually displacing dull, uninteresting lessons that employ repeated learning methods.

### 4. Reversed Classrooms

The flipped classroom strategy involves teachers posting lectures for students to watch at home and having them participate in activities in class. The results are astounding and lead to better learning outcomes. The amount of knowledge that students are required to learn in a lecture limits their capacity to retain it, making homework a difficult undertaking. It is much more advantageous for students to participate in practical tasks in the classroom as opposed to listening to a lengthy lecture.

Also, pupils get the chance to ask questions right away. Any lecture that is watched at home serves as a refresher and gives students time to write down any questions they might have about the subject matter. This is only possible because to technology.

**5. Gamification:** Using it in the classroom is a certain approach to make the learning process more casual and engaging. Gamification is getting more and more popular in the education sector. Because the games frequently mimic real-world problems, gamification aids in the development of valuable skills in students. According to one study, "These virtual game worlds offer a unique opportunity to apply new knowledge and make mission-critical decisions, while detecting obstacles, taking into account multiple viewpoints, and practising various responses.

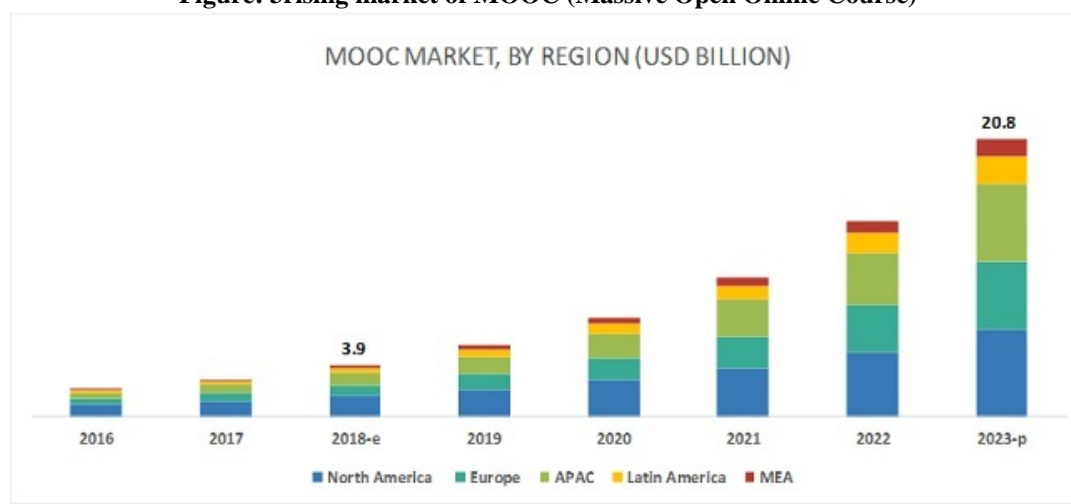
## Massive Open Online Courses (MOOCs)

MOOCs, in contrast to conventional online courses, are frequently cost-free. The most evident difference between MOOCs and conventional online classrooms is that the former have much fewer students, which makes it very difficult for instructors to cater to the needs of each individual. Students instead rely on one another by organising study groups. The brief videos in MOOCs, which last little more than 15 minutes, are lecture-based. Teaching assistants keep an eye on discussion boards as instructors provide input electronically.

### Innovative Practices Fields

Planning for the company is another name for this. It looks into the issue and seeks agreement from the "top people" within the company on how the business should proceed over a specific time period.

**Figure: 3**rising market of MOOC (Massive Open Online Course)



e: estimated; p: projected

Source: Adapted from <https://www.marketsandmarkets.com/Market-Reports/massive-open-online-course-market-237288995.html>

The school administrator, vice and deputy heads, head of units, and a few qualified and technical instructors are referred to as the top persons in this context. They gather at the request of the organization's leader to create the school's guiding principles, mission statement, and goals that will guide the organization's operations in the medium- to long-term. These rules, which outline the course the institution will take and how each component of the institution fits into the overall plan, must be presented to all committee members. The following activities are carried out during strategic planning:

- I. Goals are established for utilising the abundance of resources
- II. The activities are separated into groups or categories

- IV. Provision for encouraging and enabling staff to start working.
- IV. Including incentives to motivate employees

## II. Conclusion:

In addition, technology is continually evolving, being employed in all aspects of life, and bringing about different developments. Studies have demonstrated to the world that modern technology allows for instructional and administrative tasks to be completed more quickly and safely. The demands that students and their parents have of institutions and educational systems are increasing at an exponential rate. Parents and pedagogies prefer the use of technological tools in a learning environment so that students can acquire more valuable education.

We must adopt cutting-edge & effective technology in order to manage and offer education in any educational institution. Before implementing any novel technology, the organization's culture must evolve. It probably helps to learn more about what is involved if we are serious about fostering an innovation culture. There aren't many products with expertise that provide you with administrative support. Today's highly successful administrative assistants often have sway on organizational behaviour. Education urgently needs large-scale, effective innovations that can contribute to the achievement of high-quality learning outcomes for

all students and across the structure. We can get started by stepping up the integration of effective global learning models and by setting up an environment in our schools, colleges, and universities that encourages and supports educational entrepreneurs and innovators. Also, these changes ought to target many important facets of education in a variety of methodical yet distinct ways. Deep, complex, and all-encompassing ideas that are concrete and intangible can produce scalable benefits quickly.

**Reference –**

- [1]. Stefanini(2019) the future of education: The 21<sup>st</sup> century reinvention. <https://stefanini.com/-en/trends/news/the-future-of-education-the-21st-century-reinvention> Retrieved on 16.7.2019
- [2]. OECT (2016). Innovating Education and Educating for Innovation THE POWER OF DIGITAL TECHNOLOGIES AND SKILLS.
- [3]. Technological Innovations in Education (2019).<https://cepa.stanford.edu/research-areas/technological-innovations-education> Retrieved on 10.07.2019
- [4]. Innovation in education: what works, what doesn't, and what to do about it? (2019). <https://www.emerald.com/insight/content/doi/10.1108/JRIT-10-2016-0007/full/html> Retrieved on 09.07.2019
- [5]. Technology Innovation in school Education (2019). <https://fourthambit.com/fa/blogs/102428> retrieved on 10.07.2019
- [6]. Innovative technology in teaching and learning process (2018).<http://fedena.com/-blog/2018/07/innovative-technology-in-teaching-and-learning-process.html> retrieved on 14.07.2019
- [7]. Applications of Artificial Intelligence in Education (2018). <https://ezeetest.app/9-applications-of-artificial-intelligence-in-education/> Retrieved from on 07.07.2019

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