IJCRT.ORG ISSN : 2320-2882

INTERNATIONAL JOURNAL OF CREATIVE RESEARCH THOUGHTS (IJCRT)

An International Open Access, Peer-reviewed, Refereed Journal

# The Role Of Emerging Technology In Education AI/VR/AR And Digital Learning Platforms

**Dr. Chetna & Ms Shivani Kotwal**

**Department of Education**

**Jayoti Vidyapeeth Women's University, Jaipur**

**Abstract**

The aim of this research paper is to explore the role of virtual reality (VR), augmented reality (AR) and artificial intelligence (AI) in the transformation of the education system in India. The research objectives to study the role of emerging technologies such as Virtual Reality (VR), Augmented Reality (AR) and AI platforms in transforming the education system in India are as reasons and impact on students. Case study related to the role of emerging technologies such as virtual reality, augmented reality and AI platforms in transforming the education system in India The researcher taught 10 students for 10 days in a higher secondary school in Jaipur. In this teaching, mathematics and science subjects were taught through AI, VR and AR. For this, the help of a private NGO was taken. After 10 days of study, 10 students were interviewed. On the basis of this, conclusions were drawn based on discussion and analysis. The study shows that these technologies are having a positive impact on the learning ability, study habits, academic achievement and academic stress of students. VR and AR are proving to be very useful in understanding difficult subjects, while AI is making it easier for students to access information. Along with this, the challenges of these technologies have also been analyzed in this research paper.

**Keywords:** Virtual Reality, AI, AR, Education System, Learning Outcomes

## Introduction

At present, radical changes are taking place in the field of education in India. In such a situation, new technologies have also played an important role in this. Different from traditional teaching, these new technologies are helping students to understand quickly and easily. Due to which students are now becoming dependent on these technologies. Virtual reality, augmented reality and AI platforms are prominent among these technologies, but new types of challenges are also emerging from these technologies. These technologies offer immersive and interactive learning experiences, personalized instruction, and expanded access to educational resources. The aim of this paper is to examine the impact and potential of these technologies in shaping the future of education in India.

## Review of Literature

Osher, D. &Kidron, Y. (2022) studied the history of social emotional learning in his research. According to him, social emotional learning is more relevant in today's digital age because today the field of communication has increased a lot. People have different types of relatives, friends and colleagues; people need behavioral skills at different places. In such a situation, social emotional learning can also help people on the platform of social media.

Erin Ingram, Kristie Reddick (2022) in his research paper 'Place of Social Emotional Learning in Science Education', stated that through social emotional learning, students' interest in science can be increased. The author argued that emotions and science cannot be separated. Mental health and self-confidence prove to be helpful in increasing interest in difficult subjects.

Ye WenLing&Gurnam Kaur Sidhu (2022) in his research paper 'Teachers' perception of social emotional learning in Shanghai, China' stated that there is no difference in teachers' perception of SEL based on qualification, type of school, location of school and teaching experience.

HakanUsakli and Kubra Ekici (2022) in his research paper 'Social emotional learning in school' stated that the role of school is important in the social relations of children. School is the place where children learn social behavior skills. For this, social emotional learning in school proves to be more useful.

MansiDhata and Swati Kumar (2021) in his research paper 'Socio-Emotional Learning in India' stated that there are many challenges in implementing this type of learning in India. There is a lack of awareness among policy makers towards this. School operators also focus more on studies only. In India, the method of understanding the emotions of children and improving their emotional behavior is not adopted.

HakamUsakli& Kubra Ekici (2021) in his research paper 'School and Social Emotional Learning' stated that children who were trained through this learning are better than other children in science, mathematics

and other linguistics. They are able to communicate well with people of all ages. They stay in touch with their peers and also participate in other school activities.

**Research Gap**

There are no proper researches on the role of Emerging technology in Education AI/VR/AR and digital learning platforms.

**Research Objectives**

The research objectives to study the role of emerging technologies such as Virtual Reality (VR), Augmented Reality (AR) and AI platforms in transforming the education system in India are as follows:

- To evaluate the reasons why students are engaging with these technologies and what is its impact on the students.
- To analyse whether VR, AR and AI platforms are helping students to learn better, learn easily, provide information and increase educational achievement.
- To analyse how AI-powered algorithms in online learning platforms prepare content and recommendations for individual learning preferences and needs.

**Significance of Study**

This type of study will develop social emotional education in schools. This will help students to develop their AI skills and balance. This research will develop effective activities of AI learning and will help in the development of educational methods in the Indian context.

**Research Methodology and Sampling**

Case study related to the role of emerging technologies such as virtual reality, augmented reality and AI platforms in transforming the education system in India

The researcher taught 10 students for 10 days in a higher secondary school in Jaipur. In this teaching, mathematics and science subjects were taught through AI, VR and AR. For this, the help of a private NGO was taken. After 10 days of study, 10 students were interviewed. On the basis of this, conclusions were drawn based on discussion and analysis.

**Data analysis**

Virtual Reality for Science Education: It was found that AI, VR and AR play an effective role in enhancing understanding of complex scientific concepts and improving student engagement and learning outcomes. The case study on the use of virtual reality (VR) for science education highlights the significant impact of this technology in enhancing students' understanding of complex scientific concepts and improving their

engagement and learning outcomes. By providing immersive and interactive experiences, VR provides students with a unique opportunity to explore and manipulate scientific phenomena;The case study findings suggest that the integration of AI, VR and AR in science education has increased students' interest, motivation and retention of scientific knowledge. The ability to visualize and interact with abstract concepts has made science more accessible and relatable to students, resulting in increased enthusiasm and curiosity. Through AI, VR and AR simulations and experiments, students have been able to develop a deeper understanding of scientific principles and apply them to real-world scenarios. Furthermore, the case study highlights the potential of AI, VR, and AR to facilitate inquiry-based learning and critical thinking skills. The interactive nature of AI, VR, and AR experiences encourages students to actively explore, ask questions, and analyze data, thereby promoting deeper levels of engagement and intellectual involvement. This hands-on approach to learning fosters problem-solving skills and nurtures a scientific mindset among students.

The implications of this case study are significant. The integration of AI, VR and AR in science education has the potential to transform traditional teaching methods and revolutionize the way students learn and engage with scientific concepts. It provides a platform for personalized and immersive learning experiences that cater to diverse learning styles and preferences. By harnessing the power of AI, VR and AR, educators can create dynamic and interactive learning environments that inspire curiosity, promote scientific inquiry and prepare students for the demands of the 21st century workforce. However, challenges such as cost, access and technical infrastructure must be addressed for the widespread implementation of VR in science education. Investment in AI, VR and AR tools, content development and teacher training are essential to ensure equitable access and effective use of this technology. In conclusion, the case study on the use of AI, VR and AR for science education highlights its transformative potential in enhancing students' learning experiences and outcomes. By leveraging the immersive and interactive nature of VR, educators can create engaging and impactful science lessons that ignite curiosity, deepen understanding and inspire the next generation of scientists and innovators. Continued research, collaboration and investments in AI, VR and AR technology are critical to realizing the full potential of this tool in science education and preparing students for a future driven by scientific advancements.

## Results and Findings

### Results

Improved student engagement and learning outcomes: Emerging technologies including augmented reality and AI operations Integrate to increase student engagement and improve learning outcomes. These technologies attract students' attention and active participation. Provide motivating and stimulating learning experiences. Students engaged in these technologies achieve greater levels of understanding, retention and Studies show that critical thinking skills are demonstrated.

Personalized and Adaptive Learning: Emerging Technologies provide the potential for personalized and customizable learning experiences. AI sites powered by artificial intelligence Student performance data can be analyzed and based on individual needs and learning styles can provide tailored recommendations and content. This individualized approach addresses students' specific strengths and weaknesses. Investing helps they progress at their own pace.

Expanded Access to Quality Education: AI platforms also digital Resources have expanded access to quality education, especially distance or Students in backward areas. These technologies have made educational content available anytime, anywhere. Reduces barriers to learning and enables lifelong learning. Bridging the gap between real-world experiences and access to traditional classrooms Provides students with opportunities to explore unlikely environments and skills.

Collaboration and Global Connectivity: Emerging Technologies in the Education System Facilitating collaboration and global connectivity. AI operating systems and video conferencing tools, across multiple geographic locations Connect students and collaborate with experts Helps in solving comprehension and collaboration problems. These technologies provide access to global educational resources and perspectives have been implemented, it enriches the learning experience and makes it accessible to the global world.

**Discussion:**

The integration of emerging technologies into the education system in India has the potential to transform teaching and learning practices, address educational disparities, and prepare students for the demands of the digital age. Results show that these technologies improve student engagement, personalize learning experiences, expand access to education, and improve collaboration and global connectivity. However, there are challenges in effectively integrating emerging technologies into the Indian education system. These challenges include structural constraints, accessibility issues, teacher training, and ensuring equitable access to technology across diverse socio-economic backgrounds. Policymakers and educational institutions should prioritize investments in infrastructure, technology training for teachers, and the development of quality digital content. In addition, a comprehensive approach is needed to ensure the ethical and responsible use of emerging technologies in education. Privacy and data security measures should be taken to protect students' personal information and focus on promoting digital literacy and responsible online behavior among students.

**Conclusion**

The convergence of emerging technologies, including virtual reality, augmented reality and AI platforms, has brought significant changes to the education system in India. The results and discussion presented in this study demonstrate the positive impact of these technologies on student engagement, learning outcomes, personalized learning, expanded access to education, and collaboration. By providing immersive

and interactive learning experiences, AI, VR and AR technologies have increased student engagement and understanding of complex concepts. They bridge the gap between theory and practice, giving students the opportunity to explore and manipulate abstract ideas in concrete and experimental ways.

**Summary**

In conclusion, the integration of emerging technologies like VR, AR and AI platforms has revolutionized the education system in India. These technologies have enabled improved student engagement, personalized learning experiences, expanded access to education, and expanded collaboration and global connectivity. By meeting the challenges and investing in infrastructure, teacher training and digital inclusion, India can harness the transformative power of emerging technologies to create a more inclusive, dynamic and effective education system that prepares students to succeed in the digital age.

**Suggestion and recommendations**

The future scope of the role of emerging technologies such as virtual reality, augmented reality and AI platforms in transforming the education system in India is promising and holds significant potential. As technology advances, these emerging technologies are expected to play a major role in shaping the future of education in the country. Some aspects of future space are as follows-

In conclusion, the future of the role of emerging technologies in changing the education system in India is promising and dynamic. These technologies have the potential to revolutionize teaching and learning, increase student engagement and outcomes, and prepare students for success in a technologically driven world. Realizing this potential will require continued research, investment, and collaborative efforts among policymakers, educators, and technology providers to ensure effective and equitable integration of these technologies into the education system.

**References**


- Mishra, S., & Yadav, S. (2017). Virtual reality in education: A tool for learning in the experience age. Journal of Educational Technology, 13(2), 1-8.
- Sivasankar, K., &Arulchelvan, S. (2019). Augmented reality in education - a systematic review. International Journal of Interactive Mobile Technologies, 13(3), 136-145.
- Prensky, M. (2001). Digital natives, digital immigrants part 1. On the Horizon, 9(5), 1-6.
- Srivastava, M., & Mishra, P. (2019). Online education in India: Trends, opportunities, and challenges. International Journal of Educational Technology in Higher Education, 16(1), 1-18.
- Wankhade, A., &Gabhane, B. (2019). Virtual reality: A new era of learning. International Journal of Innovative Technology and Exploring Engineering, 9(3), 3302-3305.

- Chaudhary, S., & Jain, S. (2020). Augmented reality and its applications in education: A systematic literature review. Education and Information Technologies, 25(6), 5495-5531.
- Mishra SK and Singh, RD (1998) Personality adjustment of graduates with reference to their socio-economic status prachi Journal of psycho cultural Dimension 14, 43-44
- Morgan, CT. Introduction to Psychology, New York McGraw – Hill 1961p143
- Punia, S. and Sangwan, S. (2011). Emotional Intelligence and Adjustment of 9 th Standard Students. International Journal for Research in Education, Vol 2. No.6 pp 24-25
- Panwar P. and Sharma S. (2020), "Social Emotional Learning as Predictor of Academic Achievement among Adolescents" published in The Pharma Innovation Journal, 9(7).
- Sinha, U.K. Sharma.V. and Nepal, M.K (2003) Scale for assessing academic stress. Journal of Mental Health and Human Behaviour 6,35-42
- Sinha, A.K.P and Singh, R.P. (1971). Adjustment Inventory for school students. National Psychological Corporation, Agra, India
- Stokols, D. and Altman, I. (Eds.) (1987). Handbook of Environmental psychology; New York: Wiley.
- Sahaya Mary, R. and Paul Raj, I. (2005). Environmental Awareness among High School students. Edutracks. Vol. 5(4). December 33-35.
- Sidana, Ashok and Paree, M. 1996. A Study of environmental interests towards environmental education among secondary school students. The Progress of education, Vol.LXXI(5), 113-117.
- Sharma, R.A. (2003).Fundamentals of Research, International Publishing House.
- Stokols, D. and Altman, I. (Eds.) (1987). Handbook of Environmental psychology;New York: Wiley.
- Thialagavathy, T.(2013). Adjustment and Emotional Intelligence of High School Teacheres in Tiruvarur District, International Journal of Teacher Educational Research, Vol.2 No.5