

# AUGMENTED REALITY

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**Abstract:- Augmented reality mixes virtual and actual reality making available to user new tools to ensure efficiency in the transfer of knowledge for several process and several environments. This paper is intended towards the implication of augmented reality and its types. The paper also describes about the various apps of augmented reality useful for students. The paper also elaborates on various works and research done by the various researchers, papers, reports, published and unpublished reports. The paper aimed towards the future research avenue in the era of augmented reality.**

**Keywords: - Augment Reality, Virtuality, Reality, Camera, Sensor, Words/Image, Recognition, Reflection, Processing, Projection.**

## INTRODUCTION OF TECHNOLOGY

Nowadays, student have assignment or project that needs to search information on internet using virtual keyboard they can type on search machine and easy to search. Earlier various App are launched related to education. They provide teacher to teach concept or solve your doubts and communicate to each other through camera and virtual monitor so you can feel live experience. Augmented reality is the integra-tion of digital information with the user's environment in the real time.It is an enhanced version of the real physical world through the use of visual elements, sound or other sensory stimuli.It is one that combines real and virtual world that is interactive in real time that will be registered in 3D. Augmented reality (AR) is a new technology that has emerged with potential for application in education. While a lot of research has been conducted on AR, few studies have been conducted in the education field. Augmented reality (AR) is a new technology that has emerged with potential for application in education. While a lot of research has been conducted on AR, few studies have been conducted in the education fieldAugmented reality (AR) is a new technology that has emerged with potential for application in education. While a lot of research has been conducted on AR, few studies have been conducted in the education field. Augmented reality is a field that involves a combination of real-world Computer-generated data such as audio, video, graphics, GPS location information (Zachary, Ryder, Hicinbotham & Bracken, 1997).Augmented reality includes the reinforcement and support of reality by providing information that is not detectable by people's senses andCognitive processes under normal conditions (Azuma, 1999).Another

definition explains that the augmented reality is the simultaneous display of text, pictures, sounds, etc. on a real image, which allows users to view the real world as enhanced, enriched, or augmented (Gonzato et al., 2008).

This technology is used at the frequency band of 2.4 GHz.

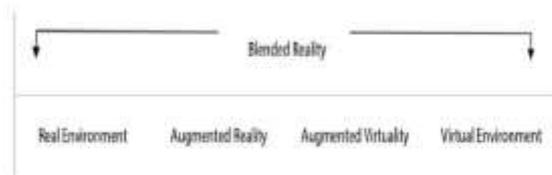


Figure 1: Milgram and Kishino's (1994) Reality - Virtuality Continuum

Types of Augmented Reality:-

- Marker Based Augmented Reality
- Marker Based Augmented Reality
- Projection Based Augmented Reality
- Superimposition Based Augmented Reality



## LITERATURE REVIEW

Fig 2.0 Augmented Reality

## AUGMENTED REALITY APPS FOR STUDENTS

Elements 4D (Android / iOS) by DAQRI studio, an app for studying chemistry. It allows combining different elements as the simulation, to see how they would react in reality. To start it special triggers on printed cards are used. On their website, you can find lessons plans suitable for high school, secondary and elementary school programs.

Anatomy 4D (iOS / Android) is best suitable for medical students. By scanning printed targets the application shows 3D models of a human body and allows to interact with it. Users may change and adjust any part of the human body, learn more about parts, joints, functions etc. Corinth Micro Anatomy, available for Windows Mobile, is another human anatomy application that may be interesting for medical staff. Or Human Heart 3D app with less content, but more specific to explore human heart in details. 3D model of a heart completed with various animations and textual tips about it. AugThat (Android / iOS), designed by a former teacher, is the application that brings AR in a classroom. AugThat mainly targets students who lack motivation with help of 360-degree virtual photos and multiple 3D experiences. Math alive, developed for kids. It is connect to a computer, a camera, and specially printed cards. Pupils under a teacher supervision place cards in front of a camera, practicing basic counting skills. Animal Alphabet AR Flashcards is a similar AR app but for learning letters, this application brings cards "into life" by showing live animals when the answer is correct. ZooKazam or Bugs 3D. ZooKazam (Android / iOS) in order to teach about animal species offers animated 3D models and various info-graphics about mammals, insects, fish, birds, and reptiles. Bugs 3D (Android) helps kids to know more about insects, placing quests and questions about them and showing descriptions and images to play with. Google Translate (Android / iOS) is just great for studying foreign languages without a dictionary. By using Google Translate special "AR mode" you may instantly check up unknown words. Works well both for students and tourists, to navigate in cities abroad. Amazing Space Journey, Sky ORB 3D, and Star Walk. All of them have one purpose which is to study the skies with all its secrets. Learn more about stars, constellations, planets of the Solar System, galaxies, etc.

The author Pagani A. & Henrique's S. (2016) describes in their research paper entitled "Sensors for location based on Augmented Reality" about location Based augmented reality. The Researcher focused on various sensor locations based virtual reality. The research aimed towards the decision of position of vehicle through camera and sensor. Also focused on various camera and sensor for guide position estimation and used Global Navigation Satellite System Information such as Galileo & EGNOS for location. [2] The author Agrawal A., Acharya G., Balasubramanian K., Agrawal N. & Chaturved R. (June 2016) describes in their research paper entitled "A Review on the use of Augmented Reality to Generate Safety Awareness & Enhance Emergency Response" about safety awareness. The research-er focused on enhancing Life Support training by projecting audio and visual content realistic scenario for the learners. Augmented reality applications are cheaper and more efficient ways to enhance human safety. The author Tiwari V., Tiwari P., Chudasama D., Prof. Bala K. (April 2016) describes in their research paper entitled "Augmented Reality & Its Technologies" about various technology which is used by augmented reality. The Researcher focused on virtual reality, 3 RD registrations and modeling. The gesture recognition technique is used to recognize the motion and act upon it. [4] The author Saidin F. N., Halim A. D. N., Yahaya N., Prof. Bala K. (June 2015) describes in their research paper entitled "A Review of Research on Augmented Reality in Education : Advantages & Applications". The researcher focused on how we can motivate the students or influence to learn actively by affecting learning by augmented reality. [5] The author ERDEM A. (May 2017) describes in their research paper entitled "Educational Importance of Augmented Reality Applica-tion" about Educational Importance. He also relates the use of A.R. with the Z-generation. Further he also tells about the Virtual Teaching material. [6]

## FUTURE SCOPE

- 1) Student can learn more with this technology with an easy manner.
- 2) There can be a great Positive change in Education System.
- 3) Use of Gamification along with augmented reality can do wonders not only in education industry but in others industries as well.
- 4) The augmented reality has a unique cognition path with immersive real-life stimulations.
- 5) The the Augmented Reality is the advanced technology that can be used to add values to teaching handle.

## CONCLUSION

- 6) From this we can easily say that augmented reality can changed the educational environment. There are many applications present for learning different things for example: science, medical science etc.

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