



Bharatiya Vidya Bhavan's
Sardar Patel College of Engineering

(A Government Aided Autonomous Institute)

Munshi Nagar, Andheri (West), Mumbai – 400058.



**AUGMENTED REALITY(AR) BASED INNOVATIVE TEACHING LEARNING
FOR THE SUBJECT OF ENGINEERING GRAPHICS IN FIRST YEAR CURRICULUM**

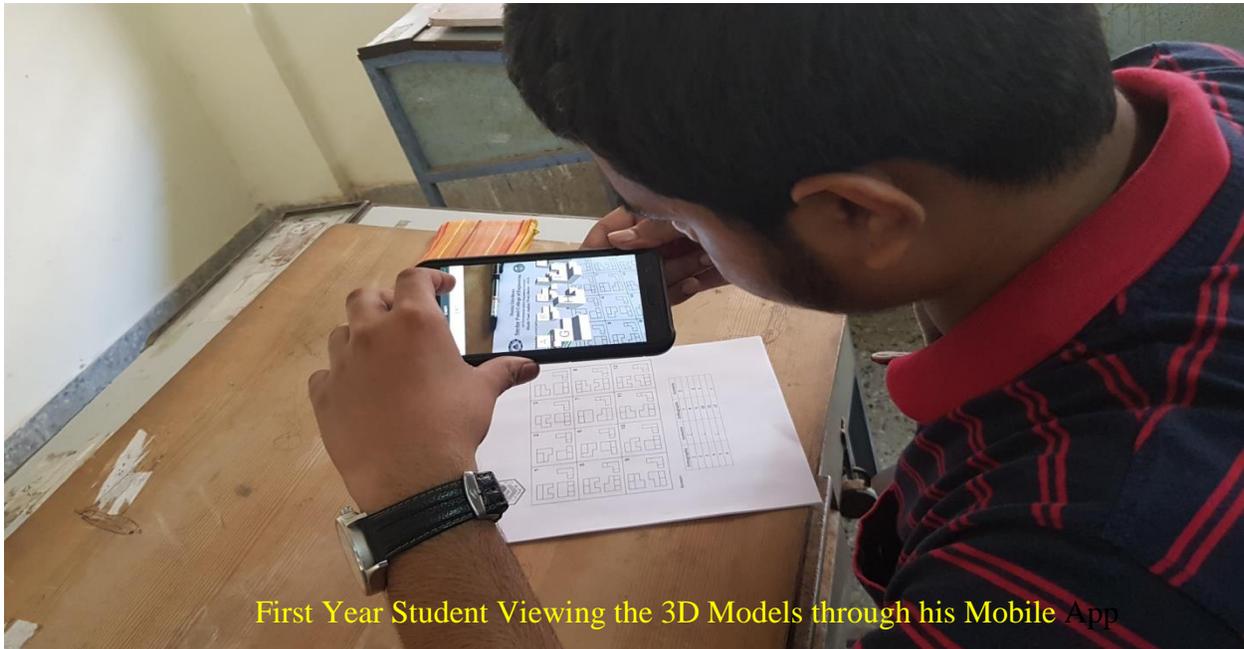


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Dr.P.H.Sawant

Principal

Sardar Patel College of Engineering, (SPCE) has developed an Innovative Teaching Learning Method based on Augmented Reality (AR) which is presently a latest / emerging technology. Institute has successfully implemented this method in the First Year Curriculum for the subject of Engineering Graphics. This technique is developed with a motive of **“ENGAGE & EMPOWER STUDENTS WITH AUGMENTED REALITY (AR)”**.



First Year Student Viewing the 3D Models through his Mobile App

First Year students commonly have many difficulties in understanding and visualizing the shape of three-dimensional (3D) objects from two-dimensional (2D) representations. In order to cater to this problem institute had developed this innovative teaching learning method using Augmented Reality Technology. Students can access 3D models from any device at any time. Whether they are at home or in the classroom, students can study and interact with the course materials.



Dr.M.M.Murudi
Vice Principal
& HOD Civil Engg. Dept.

PORTABLE AND LESS EXPENSIVE LEARNING MATERIALS

Prototypes, physical models, and detailed illustrations and posters are all expensive. More often than not, these learning materials get worn down, lose their relevance, and get misplaced over time. The enhancement of visualization and thinking skill of engineering students entering in first year is very essential in various engineering fields. Augmented reality technology can provide solution by making student visualize the actual virtual object in three dimensions to match their imagination with augmented object. Tablets and smartphones are becoming less expensive and many students already bring them to classes, which can be used for this purpose.



Dr.R.B.Buktar
Dean Academics.

EYE-CATCHING PRESENTATIONS

By integrating augmented reality into the lectures, the faculties will be able to capture the attention of their students. They will have student's undivided attention. When students start learning Engineering Graphics, they commonly have many difficulties in understanding and visualizing the shape of three-dimensional (3D) objects. However, most mechanical engineers need to make and understand 2D drawings & 3D Model, which is a fundamental skill that allows them to create designs and work with manufacturers. I believe Augmented Reality Technology can really help them to improve their visualization Power & performance in a much better manner



Dr.A.A.Bage
First Year Coordinator

HIGHER RETENTION

With a simple a scan, students can access augmented models representing anything from a part of the human anatomy to a famous monument to a molecule. Also, students can access websites directly from the Augment Reality app. Incorporating Augment Reality into classroom lessons will make the students excited about learning. Born in the digital era, students will be continuously stimulated with augmented reality. They will be excited by new ideas and think critically about the world around them.



Dr.Nilesh Raykar
HOD Mech. Engg. Dept.

INTERACTIVE CLASSROOM LESSONS

The enhancement of visualization and thinking skill of engineering students entering in first year is essential for provoking the design and development skill in various engineering field. These student faced the difficulty in understanding in developing the orthographic isometric and section view of a model. Augmented reality can provide solution by making student visualise the actual virtual object in three dimensions to match their imagination with augmented object.



Dr.Anupa Sabnis
HOD Elect. Engg. Dept.

FOSTER INTELLECTUAL CURIOSITY

In the classroom, where time is limited, it is very difficult to explain 3D geometry using only drawings on the black board or explaining them with wooden models/cardboard models. This innovative teaching learning method developed using Augmented Reality help students better understand the relationship between 3D objects and their projections. It is observed that students demonstrated higher engagement with the AR model during the learning process compared to the conventional method of Blackboard teaching. Introducing augmented reality to the students, will enable them to discover unknown passions and inspire their future endeavors.