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An Interactive Learning Platform by Providing Engagement and Entertainment

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Abstract: Nowadays we suffer from distraction and difficulty in the learning process. We focus on problems that some people face in the process of learning. We propose a new learning system based on Augmented Reality that overlays digital objects on top of physical cards/pages captured through camera and rendering them as a 3D object with text-note with information about that object on the mobile devices. We can also provide phrases and sounds related to the object which will improve the learning abilities to make it more interactive and enhanced.
We aim to use the inseparable relationship between students and their mobile phones to create new options for education, converting their smartphones into study buddies.

Keywords: Augmented Reality, Education, Learning, Marker-based Augmented Reality, Mobile Device, Android Application, Object Rendering, 3D Objects.

I. INTRODUCTION

We are aware that making kids study is a cumbersome task. Even more so in this pandemic. Covid has made schooling online which seems to be a nightmare for parents and teachers alike, children can't focus and they easily get distracted while studying. The main reason for this kind of distraction is smartphones/laptops, as they allow easy access to other things that could be present on those devices, like games, YouTube, etc. For some children they can't memorize the lessons, just by reading, they might need to visualize the concept to remember it properly. And this visualization is not a very optimal approach using just a static image.

We propose a new learning system based on Augmented Reality that overlays digital objects on top of physical cards/pages captured through camera and rendering them as a 3D object with text-note with information about that object on the mobile devices. We can also provide phrases and sounds related to the object which will improve the learning abilities to make it more interactive and enhanced.

We aim to use the inseparable relationship between students and their mobile phones to create new options for education, converting their smartphones into study buddies. We focus on problems that some people face in the process of learning. We propose a new learning system based on Augmented Reality that overlays digital objects on top of physical cards/pages captured through camera and rendering them as a 3D object with text-note with information about that object on the mobile devices.
We can also provide phrases and sounds related to the object which will improve the learning abilities to make it more interactive and enhanced. We aim to build an application which helps students concentrate on the studies while also enjoying the process at the same time.

II. WORKING

Initially the user of the application has to simply scan the given marker. After the marker is recognized by Vuforia SDK, the 3D model associated with that marker is rendered on the user's screen. While rendering the object system will also load and play animation and sound related to that 3D model. Quiz related to the topic will also be shown to the user. there should be multiple questions and each of them should have multiple options with one correct answer. After the user chooses the correct answer, the next question will be displayed with 4 options.

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III. RELATED WORK

Flashcards are one of the most famous and efficient ways to learn and improve memory performance. Students of the modern age, who use smart technology and smartphones in their daily lives, often don't have time and motivation to make and use flash-cards properly.

Interactive learning gives value, richness and meaning to the information gained with the use of more than one learning medium. It helps the user to understand the concepts in a visualized manner. It provides more flexibility and helps in creating a personalized environment for the student/user. Interactive learning is more healthy and can be updated regularly and easily, whereas non-interactive learning follows a fixed-pattern from ages. Content such as, motion graphics, animation, sound effects, video FX, and games which are available and usually considered as interactive learning.

eBased on the data above, we can see the difference with respect to interactive and non-interactive learning.

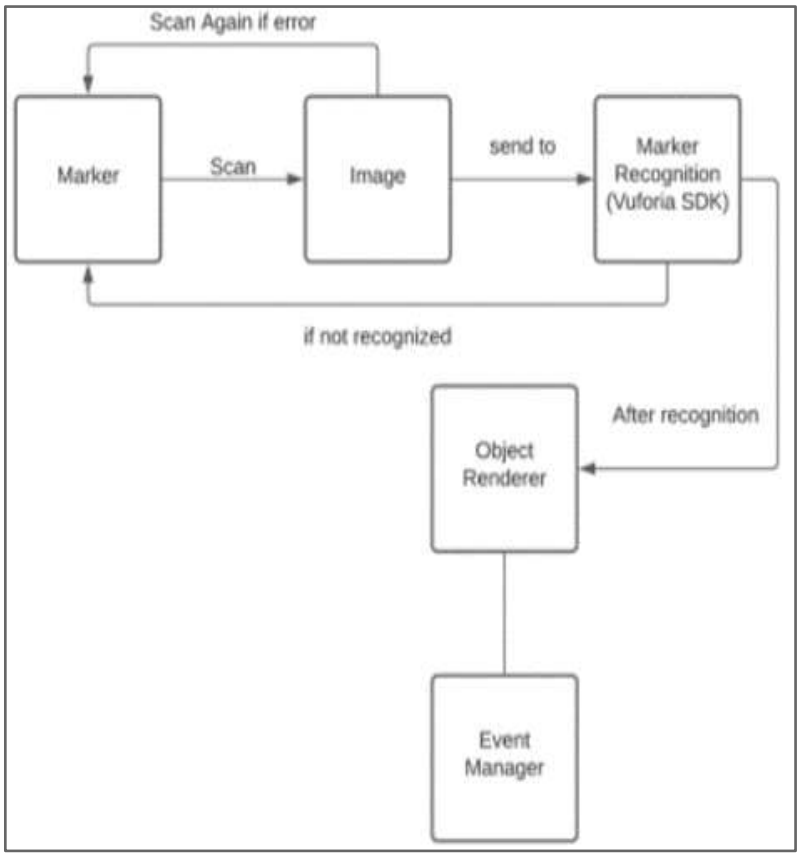

Fig.1. System Block Diagram

IV. CONCLUSION

Thus we aim to improve the learning process of students by implementing an interactive learning platform / application which engages the students to study in a fun way, which will in turn enhance their education. There are phrases and sounds available related to the object or a 3D model which is visible on the smartphone which will improve the learning abilities to make it more interactive and enhanced.

This will also make education accessible to a wider variety of audiences/students

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