# AR BOOK APPLICATION (ARed)

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## ABSTRACT

Technology in education can influence students to learn actively and can motivate them, leading to an effective process of learning. Augmented Reality (AR) in education features aspects that enhance learning of abilities like problem-solving, collaboration, and creation to better prepare students for the future. The objective of augmented reality in education is to build environments with a high degree of participation and interactivity, in which the student is able to build, design, modify, experiment and become much more actively involved in the learning process. Augmented Reality is a new medium, combining aspects from ubiquitous computing, tangible computing, and social computing[1] .This medium offers unique affordances, combining physical and virtual worlds, with continuous and implicit user control of the point of view and interactivity.

## INTRODUCTION

Augmented reality (AR) is an interactive experience of a real-world environment where the objects that reside in the real world are enhanced by computer-generated perceptual information. AR can be defined as a system that incorporates three basic features: a combination of real and virtual worlds, real-time interaction, and accurate 3D registration of virtual and real objects. The future of augmented reality is getting evident in various industries. Traveling, gaming, media, marketing, education, and entertainment are some of the major sectors where this one of the latest technology trends is creating an impact[2]. Augmented reality (AR) aims to present information that is directly registered to the physical environment. AR goes beyond mobile computing in that it bridges the gap between virtual world and real world, both spatially and cognitively. With AR, the digital information appears to become part of the real world, at least in the user's perception.

## OBJECTIVE

- ❑ To access learning materials anytime, anywhere.
- ❑ Higher student engagement and interest
- ❑ Improved collaboration capabilities.
- ❑ A faster and more effective learning process.

## RESEARCH OUTCOME

- ❖ The main difference is our education system is not mostly experiment based compared to the education system of developed countries.
- ❖ Students want internet based education system in classroom for better understanding.
- ❖ Most of the students are comfortable using handheld devices.
- ❖ While introducing new technology in our education system, the economic condition of a group of people should be taken in consideration.

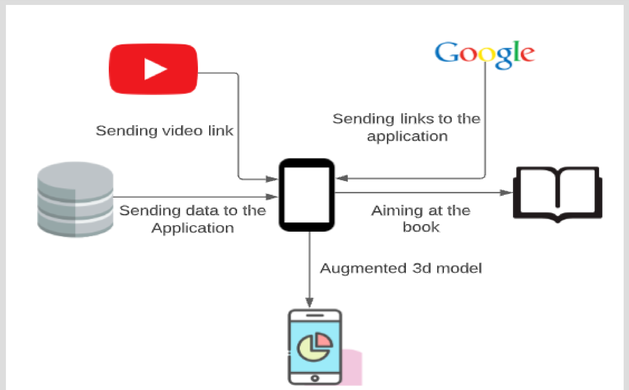
## COMPARATIVE ANALYSIS

| AR Book Application | Reformed AR Book Application |
|---|---|
| 3D model of an object can be visualized through device screen. | 3D model of an object can be visualized through device screen. |
| No important topic is marked and no google link is attached. | Important topic is marked and YouTube, Wikipedia links is attached. |
| Meaning of the words are not given here. | Important words are marks and meaning of them are given. |

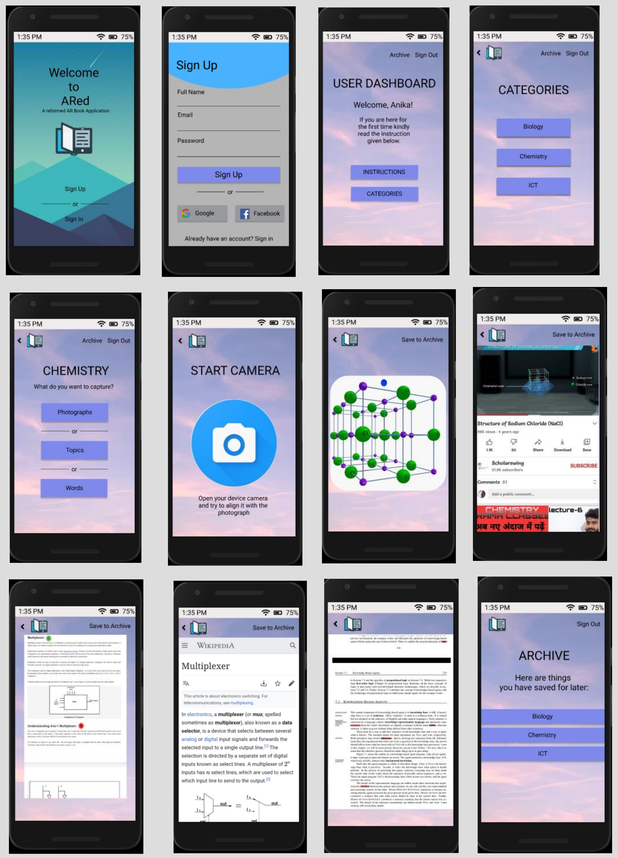
## FEATURE

- ➢ The system will include illustrations with additional supplementary information that will be visible when the smartphone screen is hold in front of the book.
- ➢ There will be photographs that will be marked and it will be displayed as three-dimensional virtual models.
- ➢ There will be other required links provided such as Wikipedia, YouTube or Google links that will demonstrate the object or topic well.
- ➢ The marker will be able to work as a dictionary.

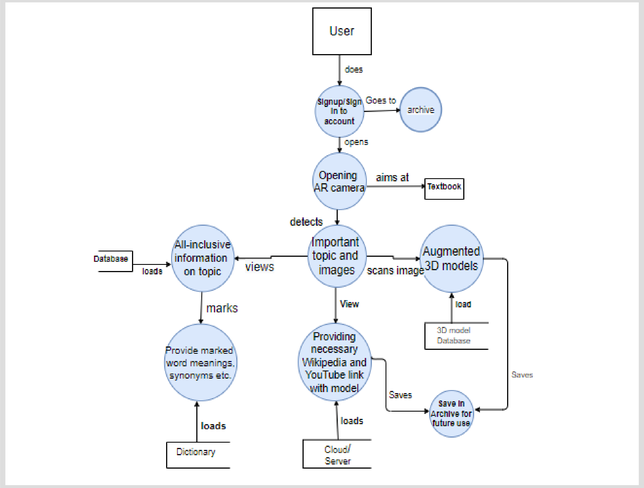
## SYSTEM ARCHITECTURE




## PROTOTYPE




## DATA FLOW DIAGRAM




## COST ANALYSIS

| No | Cost | |
|---|---|---|
| 1 | System Development | 8000tk. Approx. |
| 2 | User Training | Not required |

## DISCUSSION & CONCLUSION

In our country the education system is bookish and often students find it hard and boring. They find it hard to visualize things and fail to understand which is why they might not find science or any other subjects interesting. Due to the lack of experimental apparatus, the teachers try to explain different topics students using daily life examples.
The combination of AR technology with the educational content creates new type of automated applications and acts to enhance the effectiveness and attractiveness of teaching and learning for students in real life scenarios. Our proposed system offers vast opportunities to diversify and shake up boring classes. Students will improve their understanding of abstract, spatial geometric concepts through manipulation and multi-angle observation of virtual 3D objects. The system will allow students to experiment in a safer environment than handling the situation such as chemical in real life.

## FUTURE WORKS

- In future, smart glass feature can be added if it's cost could be reduced according to parents' financial ability.
- Classrooms can be turned into smart classrooms with AR technology and app's features can be improved accordingly if the Government's funding increases in this sector.

## REFERENCES

[1]Nor Farhah Saidin, Noor Dayana Abd halim and Noraffandy Yahaya."A Review of Research on Augmented Reality in Education: Advantages and Applications".Researchgate, Available: https://www.researchgate.net/publication/281336331_A_Review_of_Research_on_Augmented_Reality_in_Education_Advantages_and_Applications.
[2]Pallikonda Subhashini, Raqshanda Siddiqua, Keerthana Aitha and Pamu Pavani."Augmented Reality in Education".Researchgate,Available: https://www.researchgate.net/publication/348113047_Augmented_Reality_in_Education?_sg=2io8bJU499fFuo7rHyG8VNsiIgPjWrqtfy3pYjyoI2oGC2BXOOtbEPfJeATyl5UDrgr5uTP 8VaDez-0.