VenturAR

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Revolutionizing STEM Education with AR Innovation

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INTRODUCTION

STEM education frequently entails hazardous or expensive activities, posing challenges for both students and instructors. Regardless the ubiquity of AR applications, immersive STEM education often encounters considerable obstacles, including substantial hardware prerequisites, costly software, and the want for proficient educators. This poster presents VenturAR, an augmented reality application that mitigates these issues by providing a more accessible and economical solution. It exemplifies John Dewey's "learn by doing" philosophy, emphasizing active participation over passive learning to improve STEM education[1].

AIMS

APPROACH

01

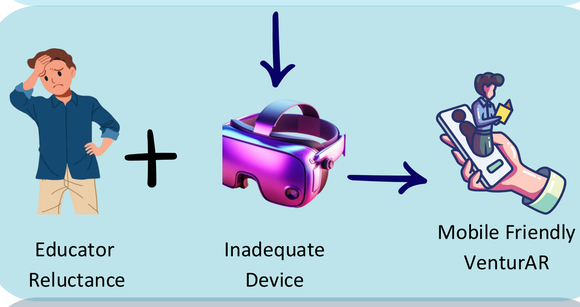
Strong efficacy will be guaranteed by ensuring seamless integration between Unity, ARCore, Blender & Mockplus through real-time testing & user feedback.

tech Stack

Mockplus | Blender | Unity App | AR Core

02

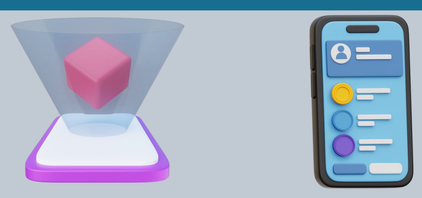
Tackling significant obstacles such educator reluctance[2], tedious production of content, inadequate device support [3], by using guided tutorials with mobile-friendly technology



03

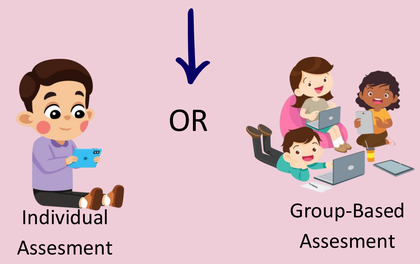
VenturAR assures high realism by emulating real-world processes, decision-making, and interactions, facilitating effective skill transmission along with multiple learning styles such as visual, kinesthetic

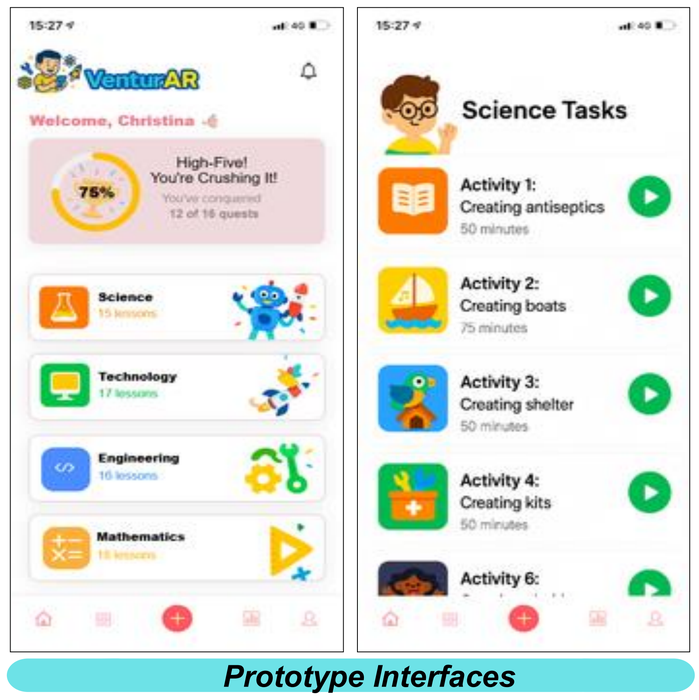
Combination of AR & text based UI



04

Following Gardner's theory of Multiple Intellingence[4], lets students showcase knowledge via AR, text, and both group & individual post assessments





Prototype Interfaces

Factors	Require Hardware	Contains only **AR**	Paid Software	Subscription Based	STEM HUB
zSpace	✓	✗	✓	✓	✗
Assemblr	✗	✓	✗	✓	✗
Merge EDU	✓	✗	✗	✓	✓
JigSpace	✗	✗	✓	✓	✗
CoSpaces Edu	✓	✗	✓	✓	✓
VenturAR	✓	✓	✓	✓	✓

Table 1. Comparison between various existing AR Apps

FUTURE WORK

Expanding into new STEM fields will provide a wider array of subjects Comprehensive device support guarantees uninterrupted access, while AI-enhanced adaptive learning along with Integration withLearning Management Systems (LMS) improves accessibility, while multi-user collaborative environments will foster teamwork and participation.

CLOSURE

VenturAR redefines STEM education by providing an accessible, economical augmented reality experience that mitigates safety hazards, decreases dependence on costly technology, and fosters cooperation. It integrates theoretical knowledge with practical application, equipping students for STEM jobs. Effectiveness is assessed using feedback and performance metrics, monitoring enhancements in retention and task completion.

REFERENCE

1. *Dewey, J. (1897). My Pedagogic Creed. Ann Arbor, Mi: Scholarly Publishing Office, Univ. Of Michigan Univ. Library.*
2. *Chin, K.Y., Wang, C.S. and Chen, Y.L., 2019. Effects of an augmented reality-based mobile system on students' learning achievements and motivation for a liberal arts course. Interactive Learning Environments, 27(7), pp.927-941.*
3. *Hsiao, K.-F., Chen, N.-S., & Huang, S.-Y. (2012). Learning while exercising for science education in augmented reality among adolescents. Interactive Learning Environments, 20(4), 331–349.*
4. *Feldman, H.G., Perkins, D., Robinson, R., Winner, E. and Wolf, D., 1986. Howard Gardner. Art and Science, 115(3), p.105.*

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