Business Overview

Padhai Karli ! - An Initiative by Rachit Pankaj Lalla

Our story

I had been observing students with special learning needs in my aunt's school, where I used to volunteer and saw first hand, the challenges being faced by the caregiver, teacher & the student to learn even basic things. I wish to help them by converting mundane lectures to immersive skits / role plays using Extended Reality (XR) thus opening up a world of possibilities for them.

Why XR and Gen AI? You must have heard about AI generated images, videos, music, it's high time AI revolutionizes Education by creating immersive XR experiences dynamically based on prompts. (Welcome to the matrix, Neo)

Credibility:

My solution has been recognized by Meta, IIT Delhi (FITT), and MeitY, India, for ranking among

the top 20 in a national-level startup seed funding and business incubation initiative.

Product name: IgnitingMindsXR*

Company name: Padhai Karli !

Management team

Name	Background & Expertise
Rachit Pankaj Lalla	**Working as a Senior Data Engineer and Process Consultant @ M/S LTIMindtree (formerly M/S Larsen & Toubro Infotech) : 4 years of experience, post graduation, working in the domain of Generative AI with various programming languages & frameworks, automating resource intensive processes for clients CISCO & Paramount. In his free time, he focuses on learning about developing AR/VR/XR experiences and tries to gain insight about the life of students diagnosed with ADHD, OCD and challenges which can be special learning initiatives using tech.**

Vision

To be a Game Changer in health, mental wellbeing and education of children with special learning needs.

Mission

To help children from the initial years when they are identified with having Learning challenges, help them understand concepts they are supposed to learn (as per curriculum of Kindergarten/Playschool). Our program will help these children in increasing their focus and memory retention.

While for phase-1 we are focusing on: course curriculum of Kindergarten and playschool students like Basic Education, General Knowledge, English literature, Hindi literature and Value Education for students with special learning needs (ADHD, Dyslexia, Dyscalculia, Autism and more).

This can also be extended for English and Hindi literature for higher classes - not only for students with special learning needs but for any kid who finds a subject/course to be less interesting (so basically everyone ;)

We plan on expanding this for advanced classes curriculum as well as other subjects like Science and Math later on - post going through the learning curve of the initial phase.

Our unique value proposition:

The USP of this initiative is that it enables teachers to scan the textbook's chapters from their phone and the content of the text is then converted to 3d models/images for Meta's VR headsets which along with background narration (auto generated) as well as voice recognition help the kids be an active part of the story or the chapter being taught to them.

Opportunity	How are we utilizing it
Currently there is no platform that directly solves the problem of learning course content being faced by children of various ages, leave alone creating interactive content dynamically.	Presently (as per secondary research data : 2021) 1 in 59 students suffer from learning challenges. In absolute terms translates to > 250 mn. We will be catering to both the education and Mental healthcare needs of students (from age group 5 years to 11 years ie from grade KG to grade 5 equivalent to an average student without learning challenge) to help them learn basics and enable them take first steps towards formal learning and knowledge. We are combining the fun of XR with what kids (especially those with ADHD/learning deficit) are supposed to learn.

How we solve the problem by dynamically VRifying Education

Our Product would convert the text of the fable / folklore / short story appropriate to the age group of the child into images wherein the different characters would spring to life and play out the entire thing. This would be achieved using existing python libraries and deep learning. The dialogues of each character in the story would be converted to speech as well using appropriate text-to-speech tools.

After watching it as many times as required it would provide an option for the child to play any of the character in the same and the story would move forward only if the character played by the child says / does its part in the story (achieved using voice recognition and headset's controllers' data).

There would also be an option thru AI to measure intuitively the attentiveness / attention deficit of the child as it uses the application more through movements of their eyeball and other parts. These data points will then be assessed by the doctors to analyze the efficacy of the treatment.

🧠⚡ Customer segments, their needs and How are we addressing it:

	Customer type	Customer need	Product, feature, or service	Our Solution
1	Parents/Caregivers of the student facing Learning Challenges	Wish to understand the child's educational needs, fulfil them in the fastest possible means, and see the child succeeds in learning basic things that are precursor to formal studies of grade 1 as well as basic social skills of interacting in a group.	**IgnitingMindsXR** provides a feature to track various parameters like child's attention level, interest, challenging areas. Thus, provides constructive feedback of the efficacy of current methods being used to help him/her.	Our product will be providing feedback of child's learning while helping them learn what they are supposed to, hence easing the work of parents while enabling them to analyze the kid's progress, continually over an extended period of time.
2	Doctors/Therapists/Psychologists	They wish to better understand the problem areas of the kid and collect various data points to measure the efficacy of the treatment they are providing.	**IgnitingMindsXR** in collaboration with Doctors and Therapists, figures out ways to collect datapoints like the child's learning speed in different areas, his/her area of interest (increase and decrease in it)	Enables monitoring of progress over time - suggesting which treatment is helping and which isn't, thus providing them data to tweak the approach / medications appropriately.
3	Teachers	Wish to ease the pressure on kid when it comes to studies and want to help the kid complete the basic learning curriculum at a customised pace as per specific need of the individual child.	**IgnitingMindsXR's** main functionality is to dynamically create engaging, immersive, interactive and relatable XR experiences from the piece of text fed to it.	Our product will make the process of learning immersive, interactive, quicker and interesting to understand without increasing pressure either on the teacher / caregiver as well as the student since they just have to scan the text they wish to teach / learn and then we are good to go.

And of course -

4	Children with special learning needs	Want to quickly finish studying sessions and go out and play! Also, If possible, want learning to be interesting.	**IgnitingMindsXR's** primary purpose is to make studying easier, quicker and interesting for them.	Boring chapters in the form of text converted to personalized interactive experiences while creating safe space, eliminating distractions, reducing procrastination and the tendency to pretend to be paying attention.

🏅 Competitive landscape

Competitor/Product available	Solution they offer	What differentiates us?
VEATIVE	Veative Labs has developed the world's first XR CHIP enabled VR Headset that comes with preloaded AR content. It also comes up with a hand-held controller that allows navigation and engages the students in the immersive learning environment of AR. Teachers can blank the screen of the students' headsets to grab their attention. They can even install, uninstall, and launch VR modules remotely on students' headsets. The startup has made 670+ interactive VR modules that cover subjects like Biology, Chemistry, Physics, and Maths. Using AR students can get inside the human heart to understand how the heart coordinates with other organs or get inside a plant to learn about photosynthesis. Students can interact with the objects and organize their VR modules as per their requirements. They can even create their own VR projects. The in-built feedback and assessment tracker make sure that the learner stays on track. The startup has developed its own proprietary reporting system which allows students, teachers, and parents to view the data. Students can also learn how to speak English. The AR brings various situations in front of the learners that allow them to speak English. Using voice recognition the AR will understand if the students are actually speaking or not. It then provides instant feedback on pronunciation and speech. Teachers can also virtually transport students to the world's great locations. Students with special needs can learn in a judgment free environment at their own pace using AR.	Solutions offered are near to what we are proposing, the key differentiation of our product being: 1. Our solution allows the child learning to be an active part of the story/content being taught. 2. We are currently focusing on Beginner level concepts enabling the kid with learning challenges to get started with basic necessary education, we can then later scale our solution to incorporate advanced concepts. 3. Our solution is not a preloaded thing and does not require teachers/students to learn VR concepts. It enables students and teachers to create their own content and feed it to the app and get dynamically created Virtual reality experiences. This means that the kid will not only be confined to the imagination of the Author of the story, but he/she can create their own content in relevance with the subject matter and experience it / be a part of it. 4. With time, textbooks and assigned curriculum will keep changing, we cannot expect the same level of effort to be put in by content creators each and every time, leave alone creating personalized content for each student - which our app will address by making the process of VRizing the text content automated.

PlayShifu	PlayShifu develops AR toys that make education fun for children of ages 4-12 years. Children need to download an app on their iPad and scan the globe to interact with 3D models. In total, the startup has made 16 products. Their 3 popular AR lineups include: Orboot Earth gives the children access to 400+ highlights and 1000+ cool facts across 6 categories - cultures, cuisines, monuments, inventions, animals, and maps. While with Orboot Dinos children can see how the earth looked 250 million years ago and discover 50+ 3D dinosaurs. Orbit Mars allows children to explore the red planet and learn about orbiters, landers, and rovers in 3D. Children can discover 1000+ cool facts and 20+ spacecraft.	PlayShifu indeed bridges the gap between theory and practical understanding, however only for the content is covers. It however, like other competitors is limited by the content it has created, or will need to create - which like any field requires a lot of manhours and the end result is confined to the video/AR model creator's perspective. Today's educational system is such that it involves everchanging content (regularly updated) and building AR models manually for each of the subject, post understanding it' s content is difficult and time consuming. We are targeting students with learning challenges who need learning experience to be personalized/customized as per the pace of the kid. Also, we are focused on building a solution which will measure the kid's attention level and capture other data points relevant to learning and provide feedback to Caregivers /Doctors/Parents/Teachers.
TutAR	TutAR comes with preloaded AR content for science subjects for kindergarten and from grades 1 to 12th. Teachers can access these VR models via any video conferencing software. They can then record videos interacting with the augmented objects and share them on social media.	The experience is not customized as per pace of the individual student. The videos even though interesting are passive form of learning. It offers predefined content, teacher can build videos but efforts from her/his side are required. Flexibility for the child to be a part is not there. Our product enables Doctors to play an active part in analyzing the progress of the student with learning disorder from the data points we gather.
Zspace	zSpace provides a Windows-based AR/VR laptop that comes with glasses and a stylus. Once you turn on the system and wear the glasses the animation is played. Using the stylus students can bring objects out of the screen in 3D space. They can then rotate the virtual objects or move them up or down or dissect them. Students can move their heads around the object and see its intricate details.	Currently, zSpace is only focused on science and math. In order to teach other subjects they will need to put in hours of efforts to study concepts and build their AR models. What differentiates our solution from theirs is that ultimately, we are trying to address this problem by enabling teachers to feed any text (of any subject) to the VR and dynamically create Virtual reality experiences as well as enabling the kid to play a part of the concept.

Disney	Disney's Byjus provides videos of course curriculum for the kid to look at to make studying interesting with cartoons and animes.	This solution while helpful for kids who don't find difficulty in paying attention at will, is still a passive form of learning, requires (rather than enabling) students to pay attention to those videos. Also, a lot of human effort needs to be put in terms of creating videos, editing them - and the end result will be confined to the video creator's perspective.

Implementation Plan

(steps for solution development)

Development Point	**Phases/Timeline**	**Measures to examine success rate / Efficacy of IgnitINGMindsXR***	**Tools/Tech. being used**
TEXT to Dialogue Based screenplay	20 Days	Software's Unit tests analyzing and accordingly grading the accuracy of the converted content and similarity between the original and resulting text.	metaNLP, python code
Extracting and Creating 3d Models of the characters / environment	45 days	Vigorous semi-automated QA Testing to assess the generated Model's relevance to the described character / environment along with User feedback	Meta's BuilderBot, Meta's PIFuHD, Meta AI's MAV3D or OpenAI's Open source GPT 3.5, DallE-2 and Point-E
Voice Narration and Lip Syncing of Characters	35 days	Tests to check the lip movement and phonetics of the language in which the dialogues are.	Meta's Patented Lip-syncing algorithm, open source text-to speech and lip-syncing models /libraries like Wav2Lip, Meta's GSLMs(textless language processing)
Involving the learner in what's to be learnt and Measuring Participation level of the learner	45 days	User/caregiver feedback, Student assessments, On the software end: Tests to check the accuracy of the models and their results.	Meta Quest Pro's mechanism of eyeball tracking, ML and DL models to deduce attention level from eyeball positions over a period of time, Voice sentiment analysis, accuracy of said sentences
Grading given by the app	5 days	Caregiver's / Psychologist's feedback	C#/python code
Suggestions? Further Ideas?	-	-	-
Grand Total	**150 Days (~ 5months)**		

More on why you should invest in our solution in next page…

Why Invest?

With 1 in every 59 students suffering from learning disorder- translating to more than 250 million numbers (source: secondary research - 2021), this solution offers value addition to a lot of potential users.

This solution will also attract VR headset manufacturers like Meta and Microsoft because this app would position their products as a value-add learning enabler from just an entertainment and gaming one. Opens a supplementary business line.
Products in proposed solution uses and leverages on available and already developed products and **open source t**echnologies. No additional R&D or new product development time and resources required.
Would be a game changer not only for students, parents, caregivers by making learning immersive and fun but also will afford data points to doctors in terms of efficacy of treatment by collecting increased concentration level or otherwise over a period of time so that medications / treatment can be tweaked as required.
With the solution already developed further iterations to make it more powerful, intuitive and useful for all stakeholders can be done further to add value instead of starting from ground zero.

Summary:

Benefits from investor's perspective:

No further investments to develop new product.
Easy solution: Code development from open source/ Meta tools and technologies
Capitalizing on existing market presence
Positioning VR headsets as a learning tool (Hygiene / Essential segment) from Gaming and entertainment (Luxury segment)

Benefits to Users:

Make life and learning easier for the child, teacher and parents / caregiver.
Provide data points for supplementing / tweaking clinical treatment for enhanced progress.
Also provides learning platform for students who find present audio-visual learning methods to be boring.

Support Required:

Interactions with mentors, investors from the edtech field on setting up and marketing the business.
Suggestions to make it simpler and / or more efficient and useful.
Marketing support.

Thank you for your time and consideration