📌 Problem Statement

Many students, especially in middle school to college, struggle to grasp complex textbook concepts due to traditional, text-heavy learning methods. Subjects like science and math often rely on abstract explanations and static diagrams, which are hard to visualize and understand. This leads to rote memorization instead of meaningful learning. Students with different learning styles, especially visual learners or those in under-resourced schools, are most affected. If students can't truly understand what they're learning, they face difficulties in exams, higher education, and real-world applications. Solving this problem is crucial to create deeper understanding, engagement, and equal access to quality education for all.

🎯 Target Audience & Context

The primary audience includes students from middle school to college, particularly those studying science, math, and technology-related subjects. These learners often face challenges in visualizing abstract concepts through traditional textbooks and lectures. The problem is more pronounced for visual or auditory learners, and students in rural or underfunded schools with limited access to modern learning tools. In today's digital world, where students are used to interactive content, outdated methods fail to provide the engagement and clarity needed for deep understanding.

🧠 Use of Generative AI

Generative AI will be used to convert student queries into real-time, interactive visuals such as 3D models, animated videos, and voice-guided explanations. For example, when a student asks "How does a nuclear reactor work?", the AI generates a dynamic simulation showing uranium atoms splitting, control rods moving, and turbines spinning—making abstract concepts visible and understandable. Large Language Models (LLMs) break down complex topics into simple steps based on each learner's level. Text-to-video, text-to-3D, and text-to-speech models enhance interactivity and engagement, while speech recognition allows voice-based input. Generative AI is ideal for this solution because it offers adaptability, personalization, and instant content creation, making learning accessible, engaging, and easier to grasp. It bridges the gap between textbook theory and real-world understanding.

📊 Solution Framework

Texvue is a Generative AI-powered learning assistant that transforms traditional, text-based education into immersive, interactive, and personalized visual experiences. It helps students truly understand complex concepts by showing how things work in real time.

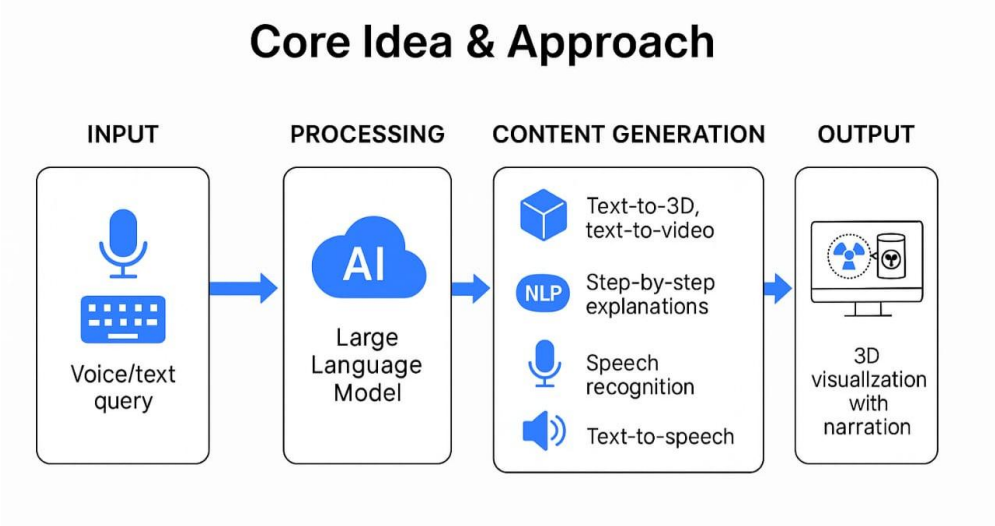
Approach & Workflow:

1. User Input: Student enters a question, e.g., "How does photosynthesis work?"
2. NLP: Texvue interprets the query and breaks it down into key concepts.
3. Content Generation:

- Text-to-3D/Video: AI generates visual simulations
- TTS: Simple, clear narration
- Labeling: Visual elements are labeled for clarity

4. Interactive Interface: Students view and interact with visuals
5. Adaptive Feedback Loop: Texvue adjusts complexity based on learner's feedback

Architecture: User Input → NLP + LLM → Content Generator (3D/Video/TTS) → Interactive Interface → Feedback Engine → Personalized Output



🛠 Feasibility and Execution

Texvue can be practically implemented using existing AI tools. GPT models process natural language queries, while Blender or NVIDIA Omniverse generate 3D visuals. Text-to-video tools like Runway ML create simulations, and ElevenLabs or Google TTS provide narration. Whisper or Google Speech-to-Text enables voice queries. Training data can include science textbooks, open educational resources, and academic datasets. A user-friendly web/mobile interface will host the system, making it accessible in classrooms, homes, or rural areas with internet access, ensuring wide usability and impact.

🚀 Scalability & Impact

Texvue has strong scaling potential through web and mobile platforms, reaching students globally regardless of location. It can support multiple subjects, languages, and education levels, making it ideal for schools, coaching centers, and individual learners. As AI models evolve, Texvue can offer more personalized and intelligent experiences. Its impact includes improved understanding, higher retention, and better academic performance. By making complex learning visual and interactive, Texvue can bridge educational gaps and transform how millions of students engage with knowledge. With Texvue, we don't just teach students to learn — we empower them to see the invisible, understand the impossible, and imagine the extraordinary.

Summary & Business Potential

Texvue is an AI-powered learning assistant that transforms text-based queries into real-time 3D visualizations and voice-guided explanations. Its uniqueness lies in adaptive, interactive, and personalized learning powered by Generative AI. Texvue addresses diverse learning needs and improves comprehension, making it ideal for students worldwide. With a scalable freemium model, school licensing, and exam-focused content packs, Texvue is not just an innovation in education—it's a commercially viable EdTech solution with global impact.

Business Model

Texvue can be launched as a subscription-based EdTech platform offering visual, AI-powered learning.

Business Model:

- Freemium access, ₹199/month premium plan
- B2B licensing to schools/coaching centers
- In-app purchases for exam packs

Revenue: Subscriptions, licensing, and content sales

Growth: Regional languages, test prep, teacher tools

Texvue is scalable, impactful, and commercially viable.

✨ AI Assistance Declaration

Texvue is a conceptual solution developed by Team Prompt Slayers for the T$O Gen-AI Hackathon 2025. During ideation and preparation, the team used ChatGPT to support content refinement, idea articulation, and visual design generation for the video. All core concepts, direction, and originality were created and finalized by the team.