



EDUC-A-THON 2.0
2025

TITLE PAGE

**Problem Statement No. : 5
(Open Innovation)**

Team Name : localhost

Team Members :

- 1. Devansh Chakravarty**
- 2. Arkaprava Mukherjee**

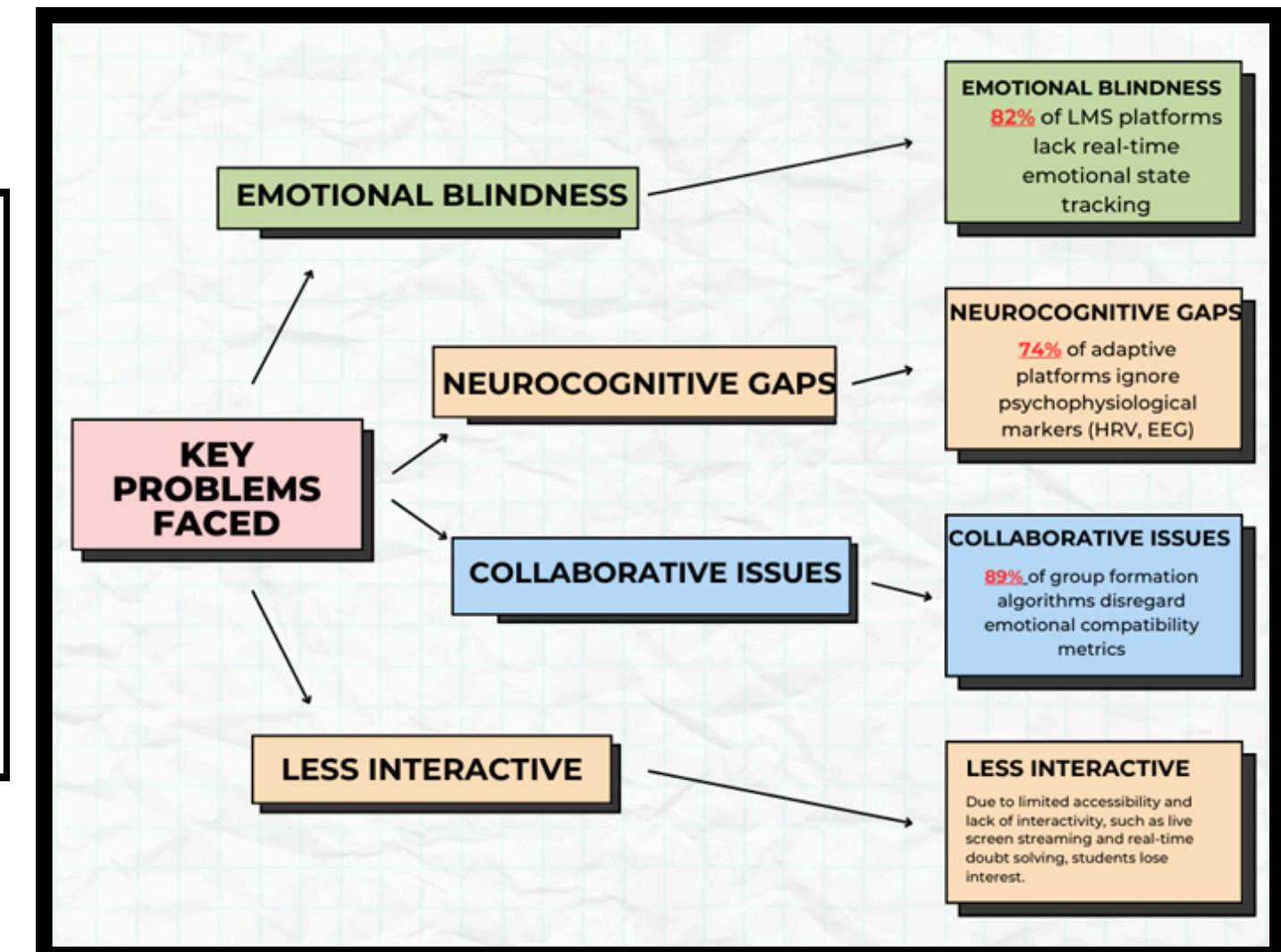
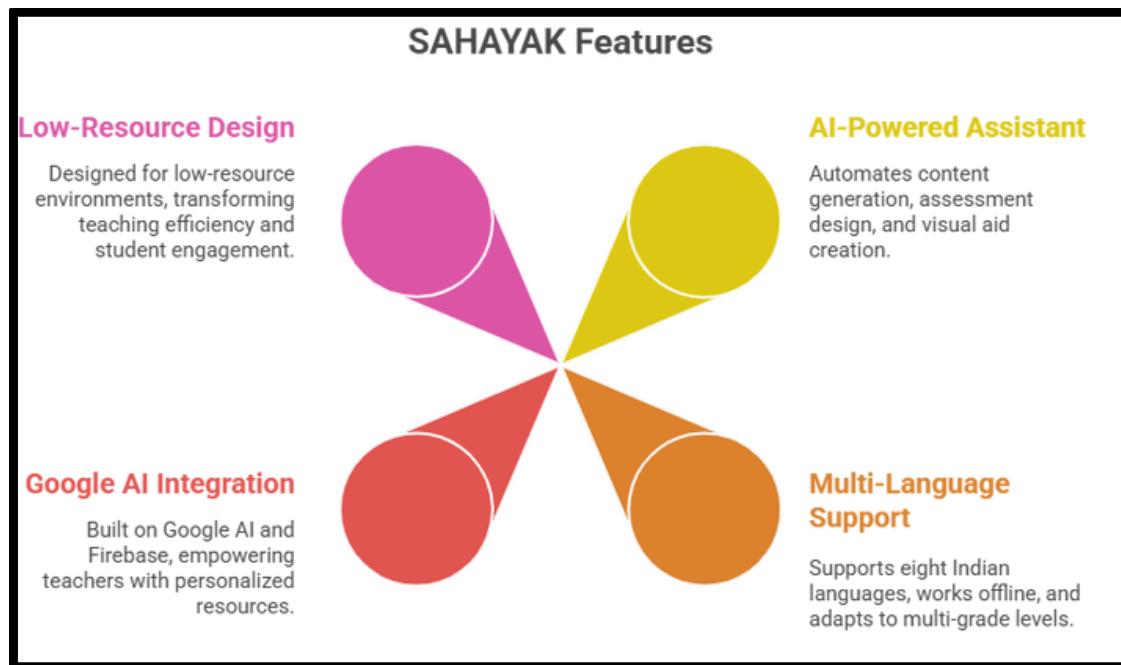
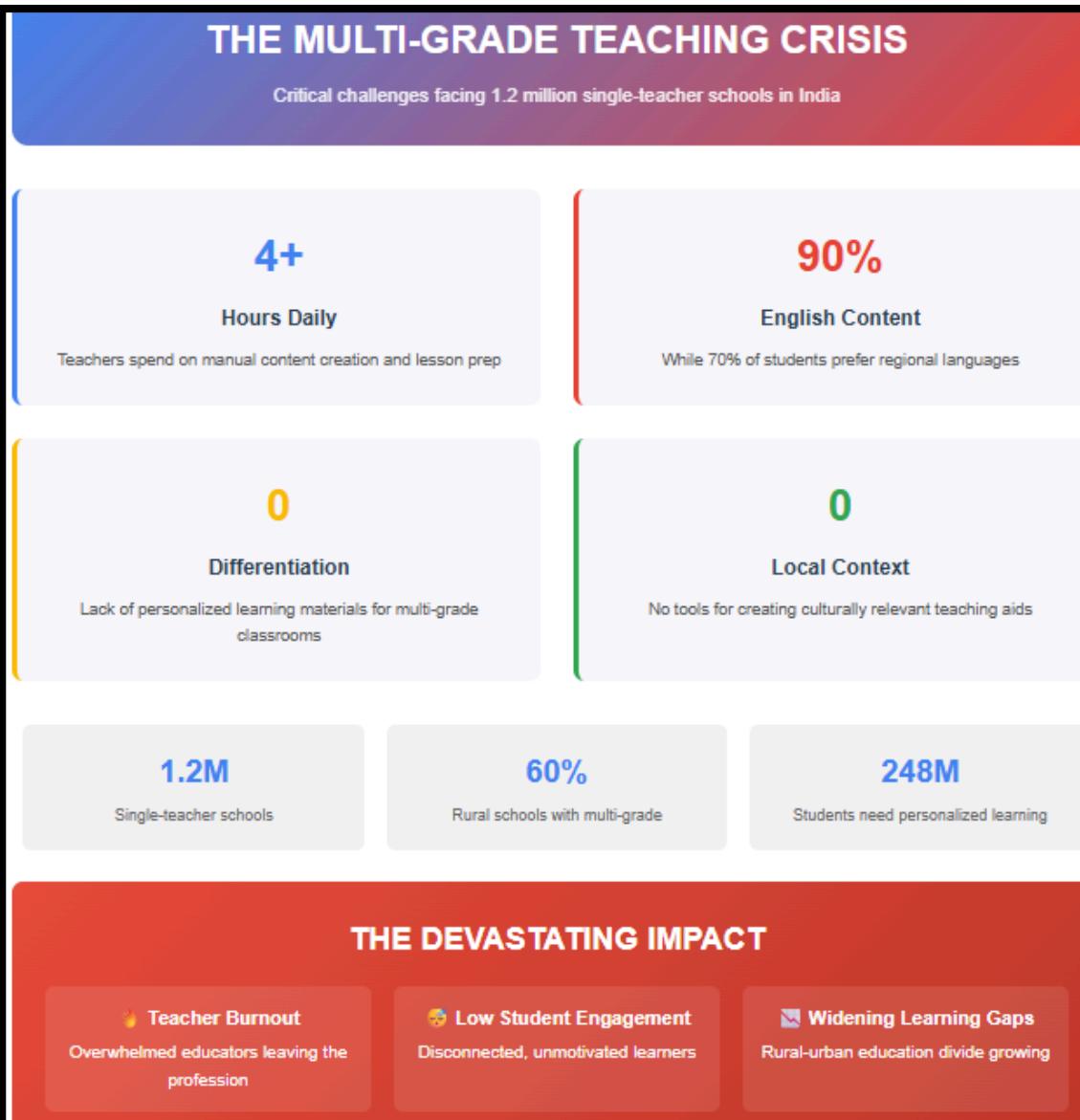




PROBLEM STATEMENT

EDUC-A-THON 2.0

In India's rural educational ecosystem, teachers face extreme workload inefficiencies. With **1.2 million single-teacher schools** and **60%** of rural institutions operating multi-grade classrooms, educators are required to teach diverse age groups simultaneously—without adequate tools or localized resources.



Sahayak directly addresses this by offering an AI-powered teaching assistant to automate content creation, support multilingual delivery, and enable real-time teaching aids—empowering every teacher, transforming every classroom.



ATTENTION IS ALL YOU NEED

PROPOSED SOLUTION

HOW DIFFERENT IS IT FROM ANY OF THE OTHER EXISTING IDEAS?

SAHAYAK – TOP 5 USPS



Teacher-Centric Design



Multi-Grade Classroom Support



Hyper-Local & Multilingual Content

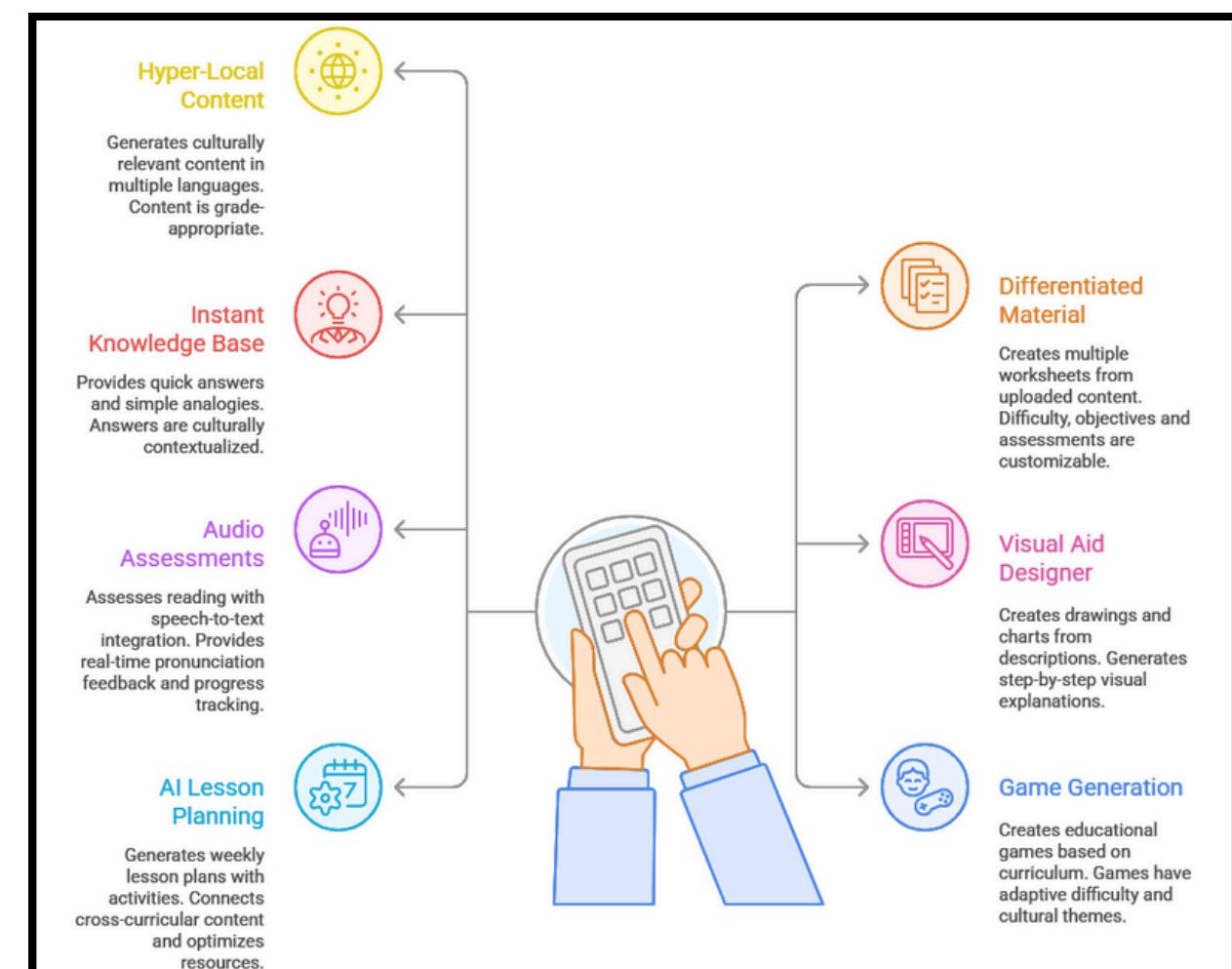


Offline-First Functionality



AI-Powered Real-Time Content Creation

HOW SAHAYAK SOLVES THE PROBLEM?

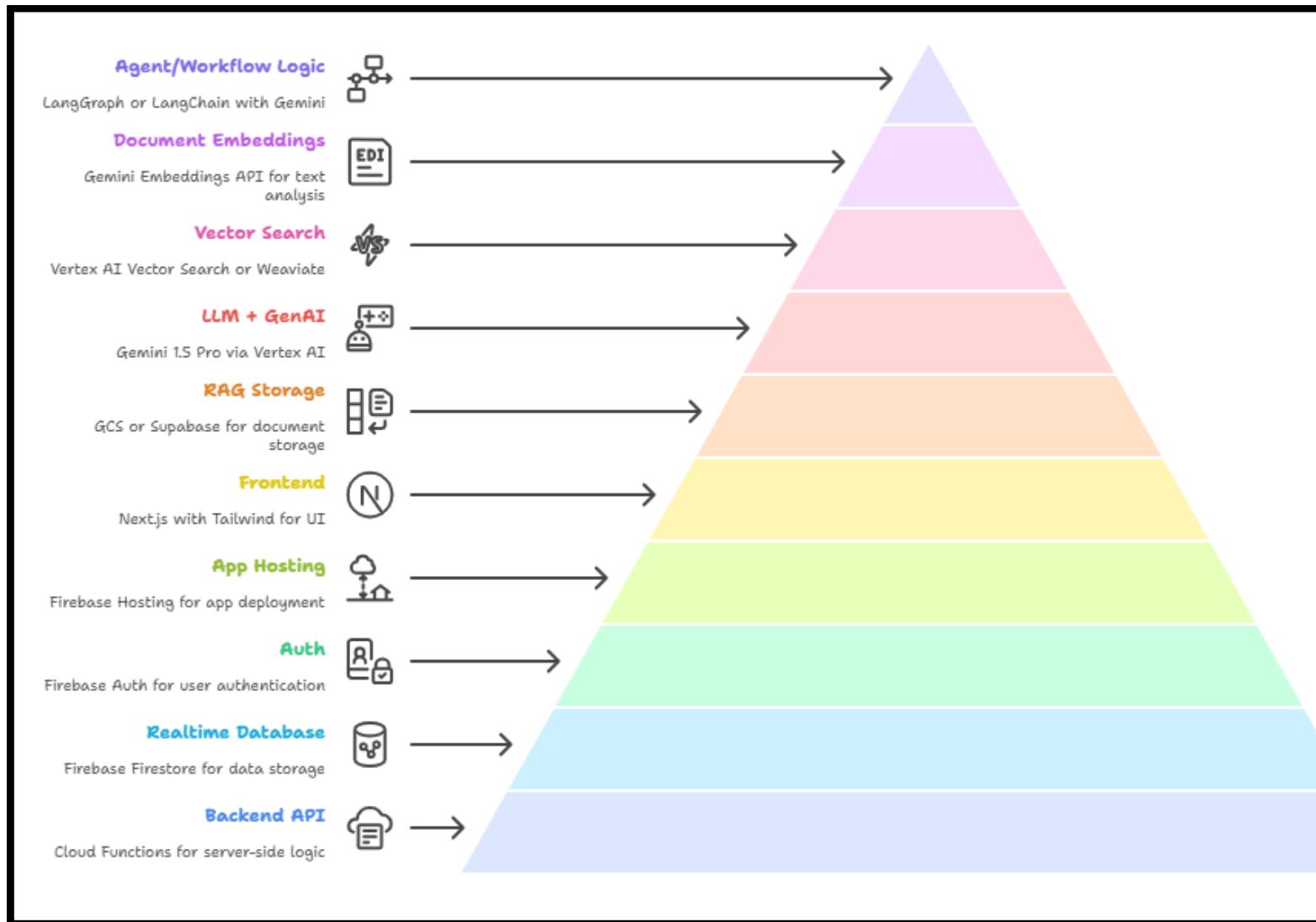


Feature / Aspect	Sahayak	Byju's	Unacademy	Vedantu
Multi-Grade Support	✓ Core feature – designed for it	✗ Grade-specific only	✗ Grade-specific only	✗ Grade-specific only
Local Language Support	✓ Native multilingual	✓ Limited regional	✓ Hindi & English	✓ Hindi & English
Cultural Relevance	✓ Hyper-local, context-specific content	Standardized Indian context	Standardized Indian context	Standardized Indian context
Content Creation	✓ AI-powered – worksheets, visuals	✗ Pre-built only	✗ Pre-built only	✗ Prebuilt only
Differentiated Learning	✓ Multilevel from one source	✓ Adaptive learning paths	✓ Personalized recommendations	✓ Personalized doubt-solving
Visual Aid Generation	✓ AI-generated diagrams/charts	✓ Animations	✓ Video content	✓ Interactive whiteboards
Audio Assessment	✓ Speech-to-text reading evaluation	✗ None	✗ None	✗ None
Instant Knowledge Base	✓ AI-powered, local-language explanations	✓ Content library	✓ Content library	✓ Teacher doubt solving
Lesson Planning	✓ AI-generated weekly planners	✗ Not available	✗ Not available	✗ Not available



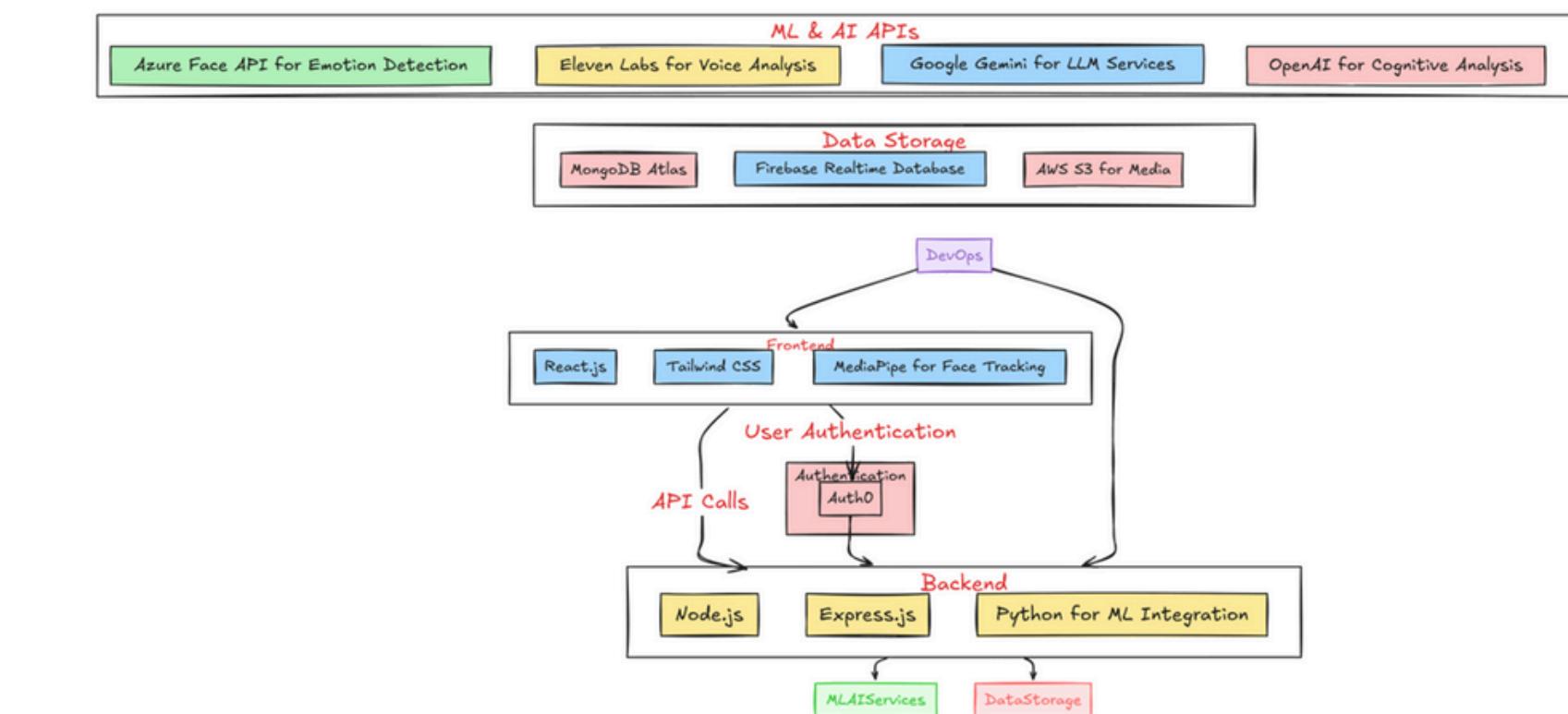
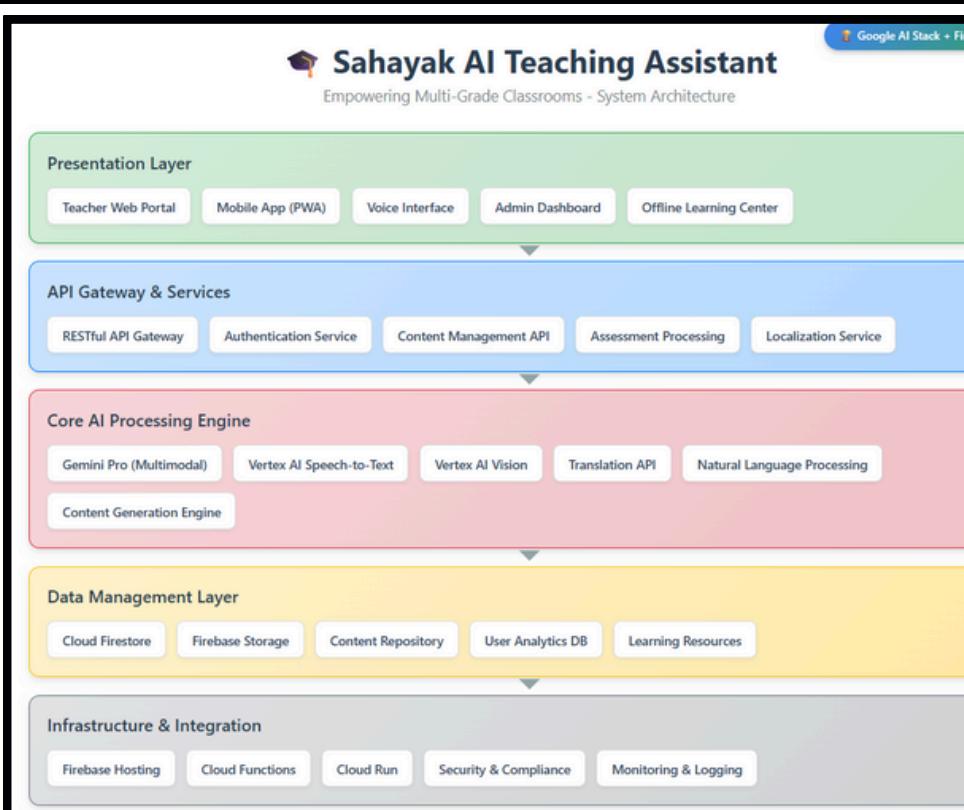
TECHNICAL APPROACH

EDUC-A-THON 2.0



Layer	Technology	Role
LLM + GenAI	◆ Gemini 1.5 Pro / Flash via Vertex AI	Core LLM for chat, summarization, quiz generation
Vector Search	◆ Vertex AI Vector Search or Weaviate (GCP deployed)	Document embeddings for RAG
Document Embeddings	◆ google-generativeai + Gemini Embeddings API	Convert lecture notes/PDFs into vector form
Agent/Workflow Logic	◆ LangGraph or LangChain + Gemini	Multi-step reasoning, function calls (e.g. user profile, calendar)
Backend API Layer	◆ Cloud Functions / Cloud Run (Node.js, Python)	Secure API access to chat logic, RAG, auth
Realtime Database	◆ Firebase Firestore or Supabase	Store chat history, user profiles, notes
Auth	◆ Firebase Auth / Supabase Auth	User login/signup, Google SSO
App Hosting / CDN	◆ Firebase Hosting / Vercel / Cloud Run	Host frontend or server-rendered app
Frontend	◆ Next.js (React) + Vercel AI SDK + Tailwind	UI interface with streaming, chat bubble UX
RAG Storage (Docs)	◆ GCS (Google Cloud Storage) or Supabase Storage	Upload PDFs, lecture slides, docs

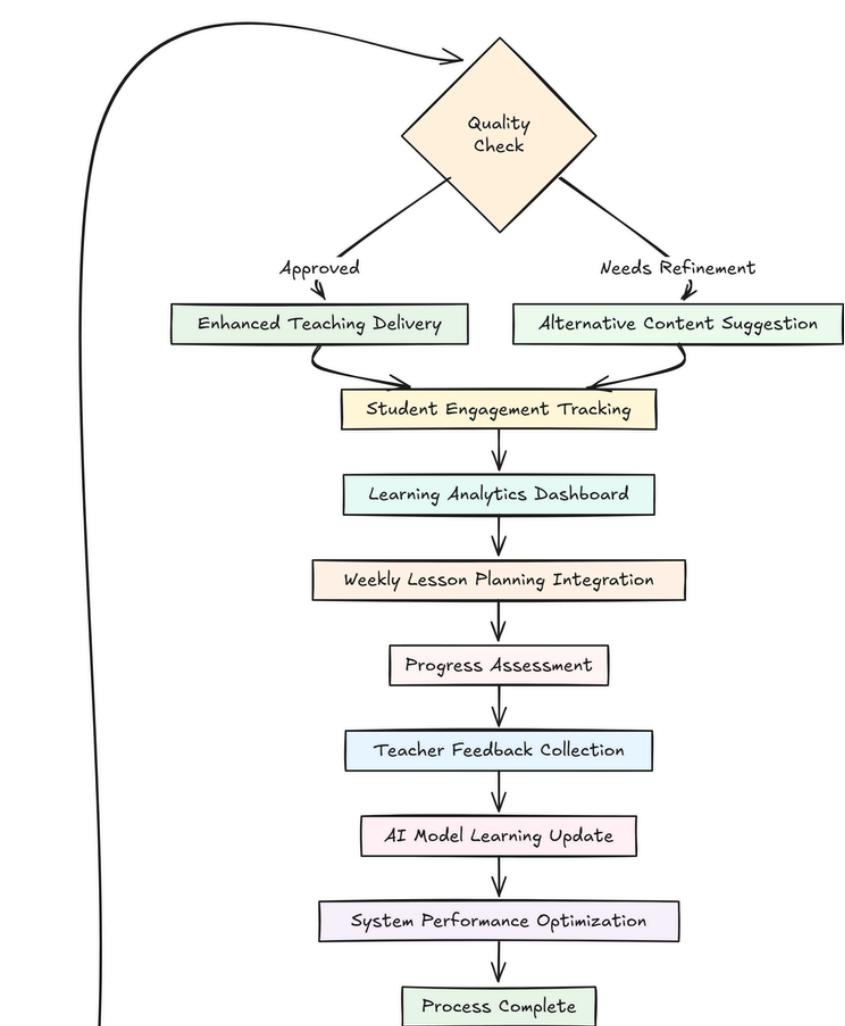
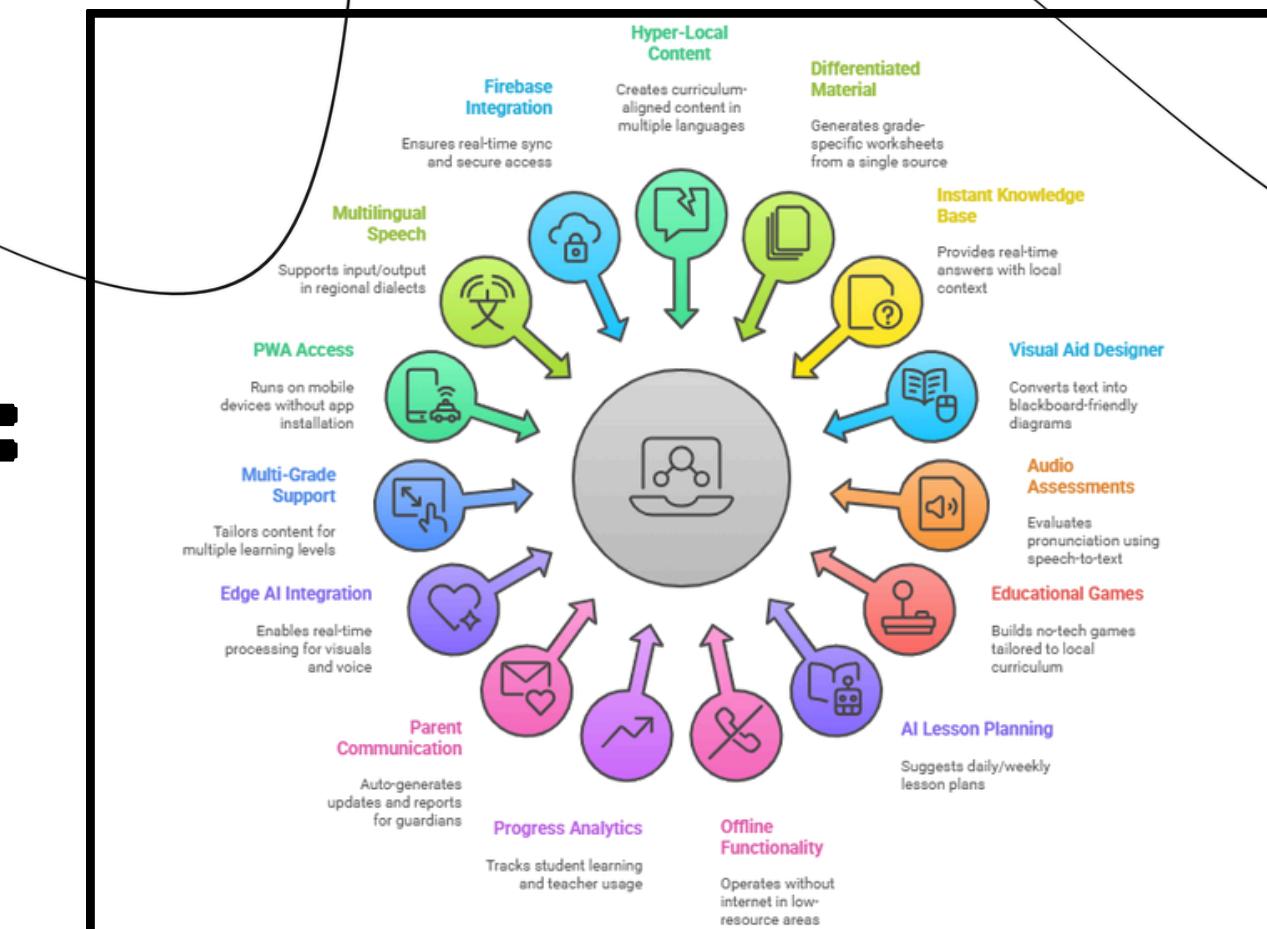
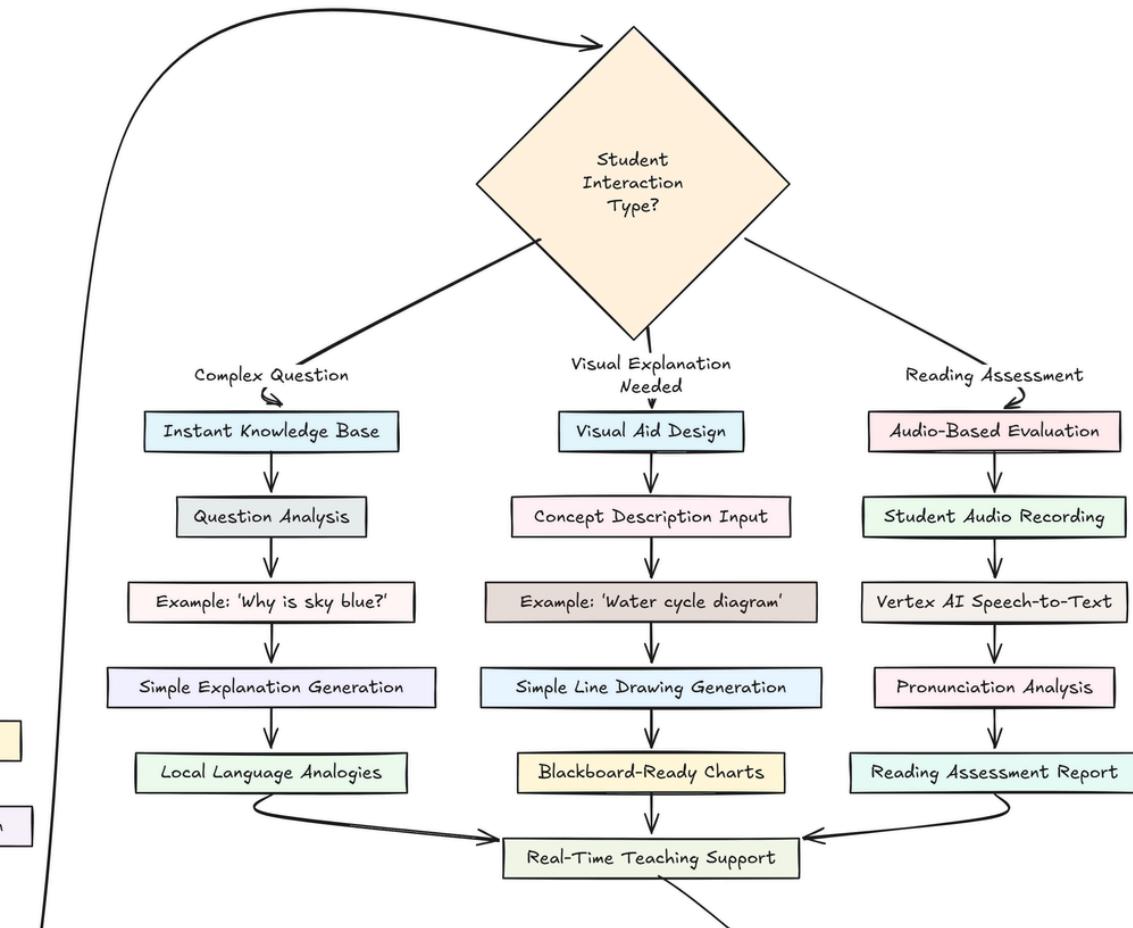
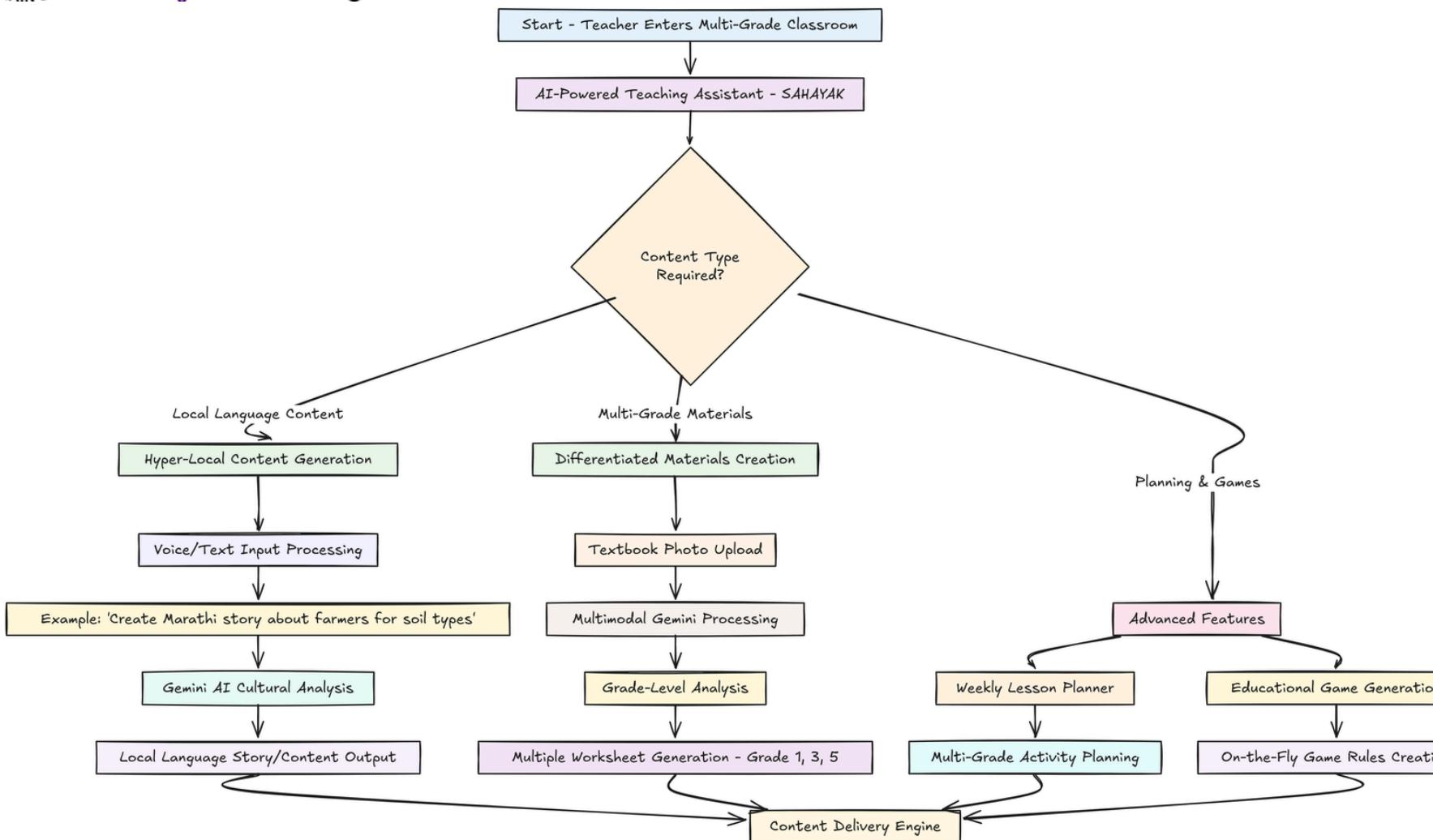
Architecture Diagram





USER WORKFLOW

EDUC-A-THON 2.0



FEATURES:



1. Education:

- Use our platform in schools to boost student well-being and track progress.
- Train teachers and staff for better support.

2. Workplace:

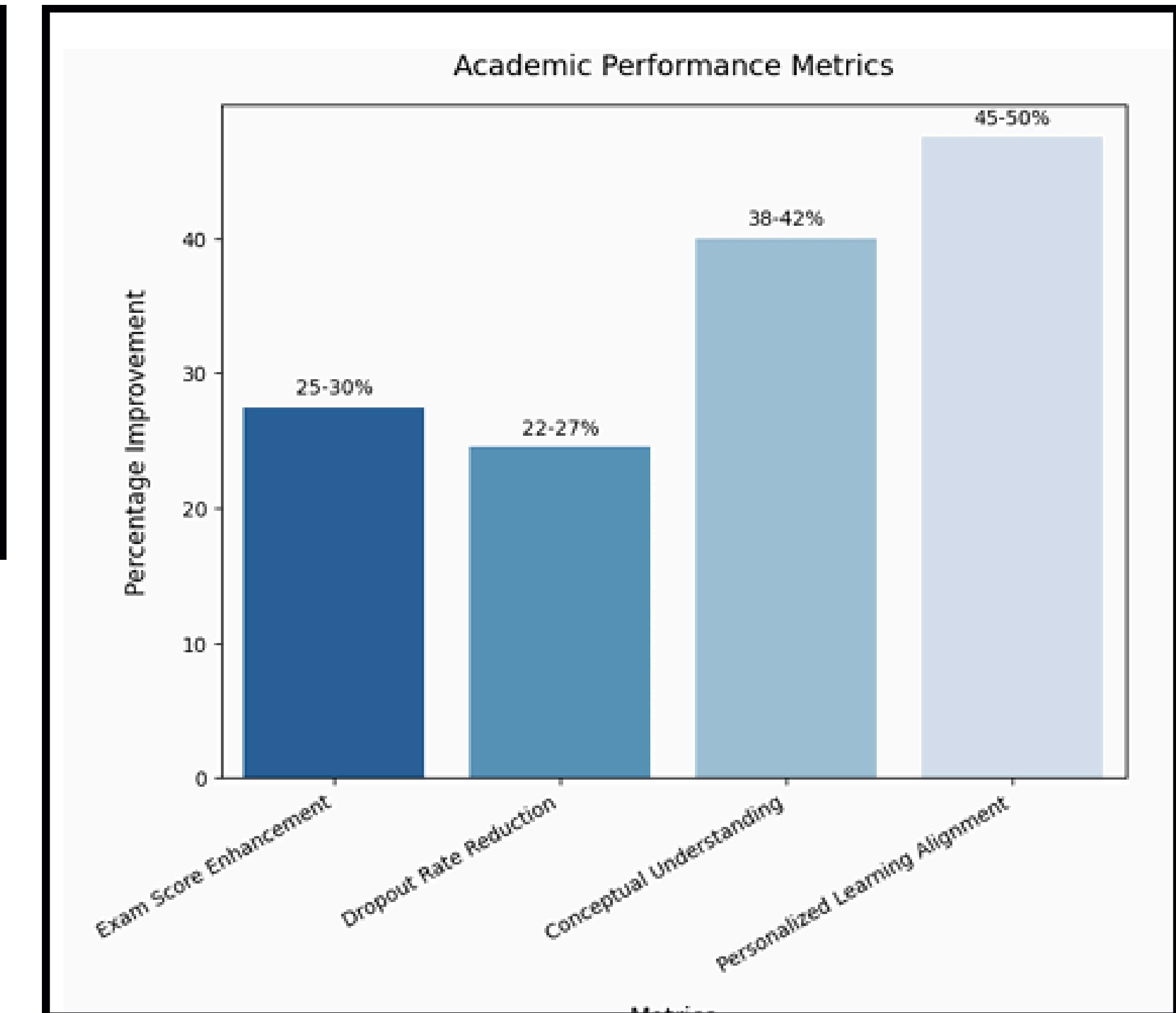
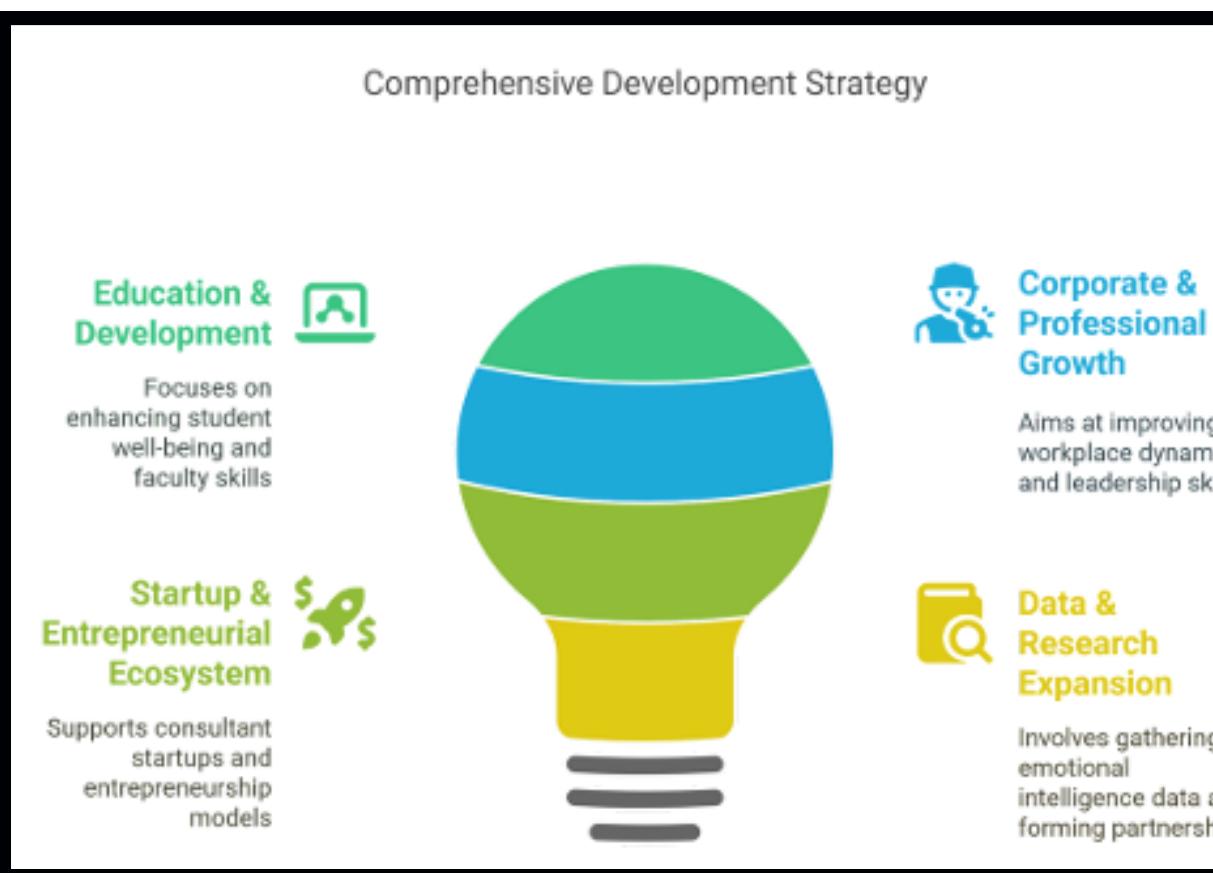
- Help companies find the right roles for employees and improve teamwork.
- Offer training to enhance leadership and communication.

3. Startups:

- Support new businesses and entrepreneurs with our platform's insights.

4. Research:

- Collect data on emotional intelligence for future studies and partnerships.



Content Creation Tools

Hyper-Local Story Generator

स्थानीय कहानी निर्माता

विषय: मिट्टी के प्रकार
भाषा: मराठी
स्थान: महाराष्ट्र के किसान
कक्षा स्तर: 3-5

कहानी बनाएं

पूर्वावलोकन:
"राजू एक किसान का बेटा था जो महाराष्ट्र के गांव में रहता था। उसे अपने खेत में अलग-अलग मिट्टी दिखाई दी थी..."

स्थानीय संदर्भ **पाठ्यक्रम आधारित** **सांस्कृतिक प्रासंगिकता**

Textbook Photo to Worksheet

पाठ्यपुस्तक से कार्यपत्रक

पाठ्यपुस्तक का फोटो अपलोड करें

कक्षा स्तर: 2, 4, 5
कठिनाई: आसान, मध्यम, कठिन

कार्यपत्रक बनाएं

3 अलग स्तर के कार्यपत्रक तैयार:
• कक्षा 2: चित्र-आधारित प्रश्न
• कक्षा 4: भरण प्रश्न
• कक्षा 5: विस्तृत उत्तर

मल्टीमॉडल AI **स्तरित शिक्षा** **तत्काल परिणाम**

Visual Aid Generator

दृश्य सहायक निर्माता

विषय: जल चक्र
चित्र प्रकार: सरल रेखा चित्र
विवरण: बादल, बारिश, नदी, समुद्र

चित्र बनाएं

ब्लैकबोर्ड पर बनाने के लिए:
• सरल रेखा चित्र
• चरण-दर-चरण निर्देश
• महत्वपूर्ण लेबल

ब्लैकबोर्ड अनुकूल **सरल रेखा कला** **चरणबद्ध गाइड**

Advanced Features

Audio Reading Assessment

पठन मूल्यांकन

छात्र का नाम: राज कुमार
कक्षा: 3
पाठ: "मेरा गांव"

रिकॉर्डिंग... 0:45

तत्काल फीडबैक:
• उच्चारण: 85% सही
• गांव: उपर्युक्त
• दृश्य: विद्यालय शब्द का अभ्यास करें

Speech-to-Text **तत्काल फीडबैक** **जाक्सिमेट ट्रैकिंग**

Educational Game Generator

शिक्षा खेल निर्माता

विषय: गणित - गुण
खेल प्रकार: प्रश्नेत्री
कक्षा: 4-5

खेल बनाएं

गणित मास्टर खेल:
• 20 दृश्य के प्रश्न
• गांव विद्युत
• दृश्य प्रातियोगिता
• विजेता वीज

इंटरेक्टिव **प्रश्नेत्री** **मजेदार सीखना**

Weekly Lesson Planner

साप्ताहिक पाठ योजना

Instant Knowledge Base

तत्काल ज्ञान आधार

प्रश्न: आकाश नीला क्यों है?
भाषा: हिंदी
आयु समूह: 8-12 वर्ष

उत्तर प्राप्त करें

सरल उत्तर:
"सूर्य की रोशनी में सभी रंग होते हैं। जब यह हमारे वायुमंडल में आती है, तो नीला रंग सबसे उच्चादा वित्तरता है। यह ऐसे हैं जैसे नीला रंग हवा में नाचता रहता है!"

सरल भाषा **उदाहरण सहित** **आयु-उपयुक्त**

Teacher Dashboard (Desktop)

Sahayak Dashboard

होम सामग्री आकलन योजना

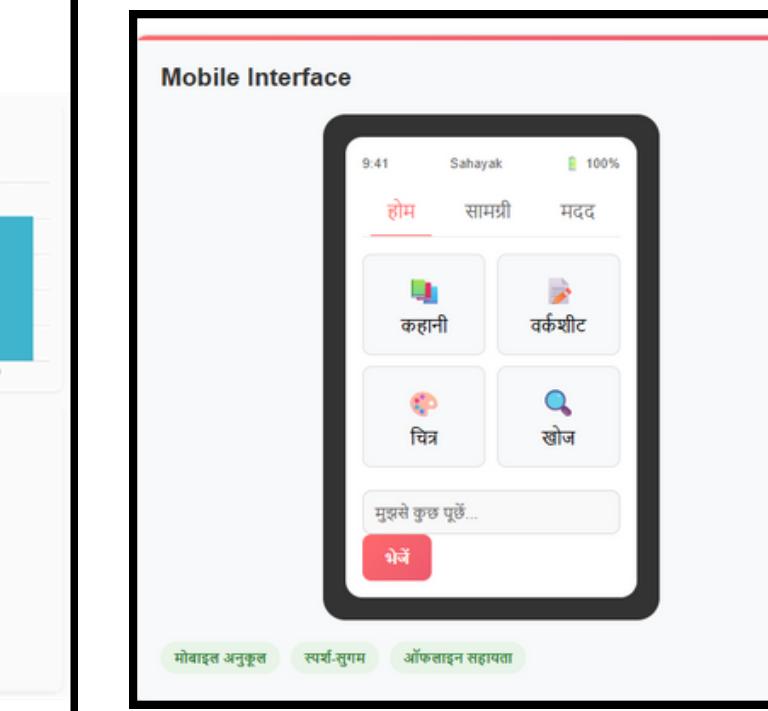
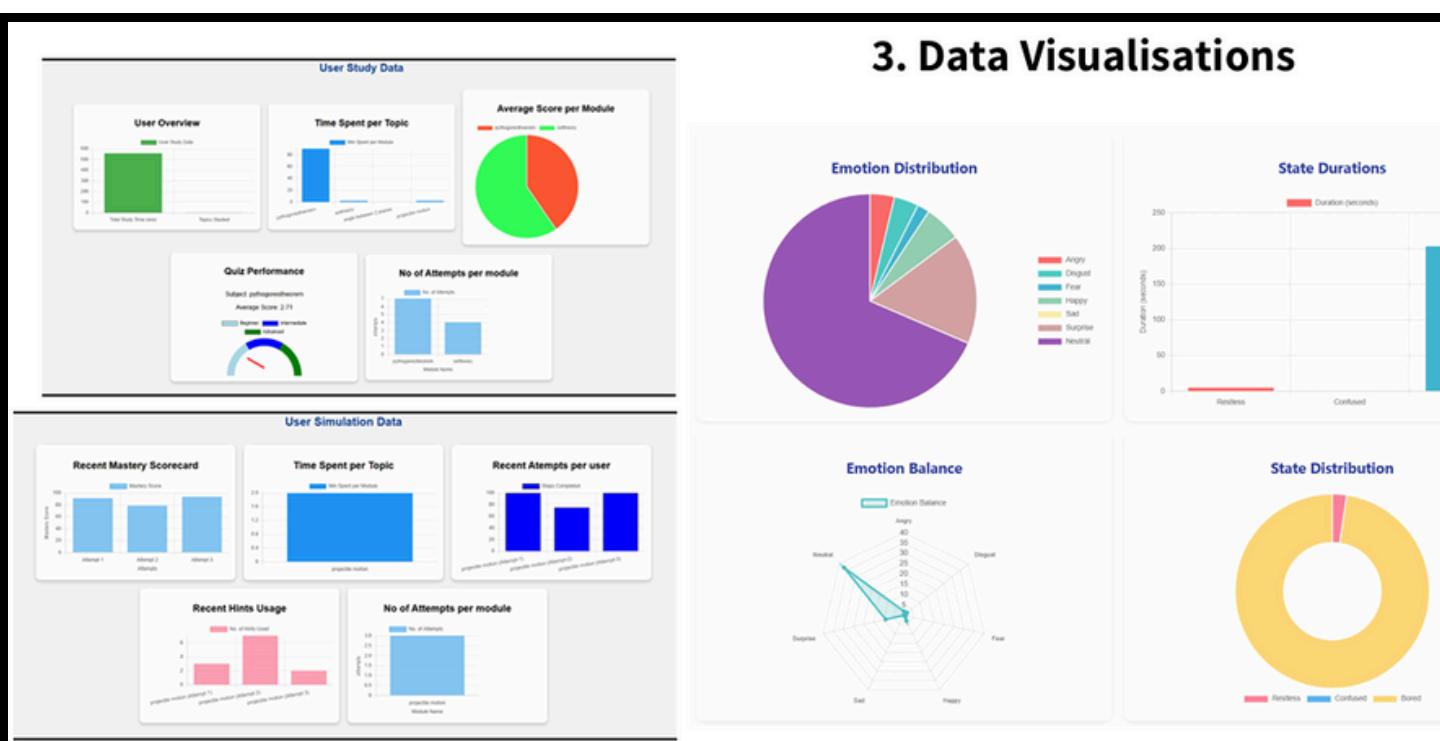
स्थानीय कहानी बनाएं कार्यपत्रक तैयार करें

चित्र बनाएं त्वरित उत्तर

आज मैं आपकी कैसे मदद कर सकता हूं?

पूछें

वहांमारी **आसान नेविगेशन** **त्वरित पहुंच**



- ## References
- OLabs Platform
 - Current Trends in AI Based Education
 - AVV & other colleges survey