

Project Report

Title: Smart AI-based Learning for Government Schools of Mayurbhanj

Prepared For: District Administration, Mayurbhanj & ITDA Baripada

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1. Introduction

In alignment with the National Education Policy and Digital India initiatives, this project proposes the development of a Laravel-based Smart Learning Web Application exclusively for students in Government Schools of Mayurbhanj. The goal is to enable interactive, personalized, and mother-tongue-based digital education using modern AI technologies.

2. Objectives

- To create a user-friendly educational platform for government school students.
- To enable subject-wise, chapter-wise, and topic-wise content exploration.
- To integrate AI-driven content delivery in Odia for better understanding.
- To enhance learning outcomes through pre- and post-assessment tests.
- To analyse student skills and provide personalized feedback.

3. Key Features

- Secure Login: Each student has a unique account to track their progress.
- Syllabus Navigation: Full syllabus broken down into Subject → Chapter → Topic.
- Content in Odia: Topic summaries generated using ChatGPT, displayed in Odia.
- Visual & Video Support: Related images fetched via Google API and videos via YouTube API.
- MCQ Assessment: Pre- and post-learning tests to measure knowledge gain.
- Performance Analytics: Displays scores before and after topic study with percentage improvement.
- Skill Mapping: Evaluates memory, logic, analytical thinking, and numeracy.
- Skill Report: Provides suggestions for improving weak areas.

4. Technology Stack

- Backend Framework: Laravel (PHP), Node JS (For WebSocket)
- Frontend: Bootstrap, Blade Templates
- Database: MySQL
- AI Integration:
 - ChatGPT API for content summarization
 - Google Custom Search & Image API for visual content
 - YouTube Data API for video resources

5. Workflow

- I. Student logs in to the system.
- II. They answer a short MCQ pre-test.
- III. They choose a topic from the syllabus.
- IV. The system presents:
 - a. A summary in Odia (ChatGPT)
 - b. Images (Google API)

- c. YouTube videos (YouTube API)
- V. Student reviews/read the content.
- VI. Student takes the same quiz again.
- VII. System compares performance.
- VIII. A report is generated showing skills and improvement areas.

6. AI content generation policy

i. Teacher Login & Content Delivery:

Teachers will log in to the portal, select a subject → chapter → topic. Once a topic is selected, the teacher will be provided with AI-generated educational content comprising of:

- Summarized text (via ChatGPT)
- Related images (fetched using Google Image Search API)
- Relevant videos (linked from YouTube via API)

This curated content helps the teacher deliver lessons effectively in real-time.

ii. AI Content Generation Logic:

Each time a teacher logs in and selects a topic, the system generates new AI-powered content. For every topic, 5 unique AI-generated responses will be produced — one for each of 5 logins — and stored in the database.

iii. Student Access to Stored AI Content:

When students log in and choose a topic, they are shown the stored AI-generated content for that topic. The same 5 teacher-curated responses are made available to students for a continuous period of 3 days.

iv. Content Renewal After 3 Days:

After 3 days, if the same topic is selected again, the system triggers a new set of 5 AI-generated responses, which are again stored in the database and made accessible for the next 3-day cycle.

v. Iterative Learning Cycle:

This structure ensures that every 3 days, fresh content is generated, maintaining novelty and reinforcing knowledge for both teachers and students. The 5-response-per-topic-per-cycle model promotes varied perspectives and learning depth.

7. Benefits

- Encourages self-learning and critical thinking.
- Provides equal access to digital content in local language.
- Improves exam preparedness.
- Builds confidence and engagement through real-time feedback.
- Assists teachers in identifying student weaknesses and planning remediation.

8. Implementation Plan

- Phase 1: Requirement gathering & system design
- Phase 2: Backend & API integration
- Phase 3: Content structure setup & testing
- Phase 4: Odia translation and content enrichment
- Phase 5: Pilot testing in select schools
- Phase 6: Full rollout and training

9. Conclusion

This smart learning solution will bridge the educational divide by using AI to provide content in Odia, enabling personalized, inclusive, and measurable learning for government school students in Mayurbhanj.

9. Server Requirement

10. Time and Money involved