PEDAGOGICAL TOOL DEVELOPMENT PLAN

AI-Integrated Website for English Communication Skills

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1. PURPOSE OF THE TOOL)

"This website is not for marks.
It is a **practice companion** to help diploma students **check, practice, and improve English communication independently**, with continuous motivation."

Core Goals

- Improve **spoken & written English** of diploma engineers
- Build **confidence for interviews, internships, and workplace communication**
- Encourage **self-learning habit**
- Track **progress over time**
- Use **AI for personalization**, not replacement of teachers

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2. TARGET USERS

Primary Users

- First-year & second-year diploma engineering students
- Medium / low English proficiency
- Rural & semi-urban background

□ **Design must be simple, friendly, and non-judgmental**

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3. PEDAGOGICAL FRAMEWORK (VERY IMPORTANT)

"This website must follow *how students actually learn*, not just how technology works."

Learning Principles Used

1. **Learn → Practice → Feedback → Improve**
2. **Micro-learning** (5–10 minutes per activity)
3. **Gamification** (badges, streaks, levels)
4. **Self-paced learning**

5. **Real-life engineering & workplace context**

4. MODULE-WISE WEBSITE STRUCTURE

MODULE 1: Diagnostic Test (Entry Point)

Purpose:
To understand student's current level without fear.

Features

- Simple MCQs + short answers
- Topics:
  - Vocabulary
  - Grammar basics
  - Sentence formation
  - Situational communication
- Auto-generated **skill profile:**
  - Beginner / Intermediate / Advanced

Spoken Test

AI Role

- Analyze answers
- Recommend learning path

MODULE 2: Learn Section (Content Delivery)

Sub-modules

1. **Vocabulary Builder**
   - Daily words
   - Engineering-related words
   - Pronunciation (audio)
   - Usage in sentences
2. **Grammar for Communication**
   - Tenses (practical use)
   - Common errors
   - Active vs passive
   - Polite requests
3. **Functional English**
   - Introducing yourself
   - Asking doubts

- Telephone conversation
- Email & WhatsApp etiquette

□ **Pedagogical Rule**

- No long theory
- Examples > explanations

MODULE 3: Practice Section (Heart of the Tool)

Practice Types

1. **Sentence Correction**
2. **Fill in the blanks**
3. **Rearrange sentences**
4. **Dialogue completion**
5. **Short paragraph writing**
6. **Audio-based speaking prompts**

□ **AI Role**

- Give instant feedback
- Highlight errors
- Suggest improved sentence
- Encourage, not criticize

Example feedback:

"Good attempt □
Try using past tense here."

MODULE 4: Speaking Practice (Very Important)

Since students fear speaking:

Features

- Record voice
- AI converts speech to text
- Basic fluency & clarity feedback
- Sample ideal answer

Activities:

- Self-introduction
- Describe your project
- Explain a process
- Mock interview question

□ Keep feedback **simple & positive**

MODULE 5: Progress Tracker & Dashboard

This is what brings students BACK.

Dashboard shows:

- Learning streak (days active)
- Completed modules
- Accuracy improvement %
- Weak areas
- Badges earned

Visual:

- Progress bars
- Charts
- Achievement icons

□ AI Insight Example:

"You improved sentence formation by 18% this week!"

MODULE 6: Motivation & Re-engagement

Features

- Daily challenge
- Weekly mini test
- "Word of the Day"
- Certificates after level completion
- Leaderboard (optional & healthy)

Notifications:

- "You are just 1 activity away from a badge!"

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5. AI INTEGRATION – SIMPLE & REALISTIC

"We are not building ChatGPT. We are using AI smartly."

AI Use Cases

1. Answer analysis
2. Grammar correction
3. Sentence improvement suggestion
4. Speech-to-text evaluation
5. Personalized learning path
6. Content recommendation

AI Tools (Students can use)

- OpenAI API / Gemini API
- Speech-to-text APIs
- Rule-based + AI hybrid model

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7. USER FLOW

1. Student registers
2. Takes diagnostic test
3. Gets learning path
4. Practices daily
5. Receives AI feedback
6. Progress tracked
7. Motivation via badges & insights
8. Student returns voluntarily

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8. DEVELOPMENT PHASES (FOR STUDENT TEAM)

Phase 1: Core Development

- Login system
- Practice modules

- Database connection

Phase 2: AI Integration

- Grammar checking
- Feedback engine
- Speech analysis

Phase 3: Testing

- Real students as users
- Bug fixing
- Feedback collection

Phase 4: Deployment & Evaluation

- Launch pilot
- Measure improvement
- Research data collection