1. **Gamification Enhances Motivation** – Studies show that game-based learning improves student engagement and retention by providing interactive and rewarding experiences [4].
2. **Interactive E-learning Promotes Active Learning** – Students learn better through hands-on activities and immersive, real-life applications, which enhance both engagement and comprehension [2].
3. **A Modernized Approach Aligns with Student Behavior** – Digital-native students benefit from gamified and multimedia-rich learning experiences, which better reflect their daily interactions with technology [3].
4. **Improved Filipino Language Appreciation and Retention** – Making learning enjoyable through interactive content encourages long-term interest in Filipino, strengthening both proficiency and cultural identity [1].

By leveraging modern educational technologies, this project will provide an innovative, student-centered approach that addresses the existing gaps in Filipino language learning.

3. Project Objectives

The main objective is to provide a web app which is both educational and attractive to grade 5 students. The mentioned key problems such as low student engagement, problematic teaching methods and declining use of Filipino are the main priorities which the main objectives aim to address.

3.1. Main Objectives (SMART Goals)

3.1.1. Ensure Secure and Efficient User Management

Enable a smooth and secure login and registration process for both teachers and students.

- Implement an **efficient registration system** where teachers and students can create accounts.
- Provide **secure login authentication** using email and password.
- Allow teachers and students to **edit and update their profile details** for personalization.

3.1.2. Simplify Class Setup and Student Enrollment for Teachers

Streamline classroom management by making it easy for teachers to create and manage classes while providing a seamless enrollment process for students.

- Allow **teachers to create and manage classes** effortlessly.
- Provide multiple enrollment methods: **students can join using a class code or be manually added via email**.

3.1.3. Provide an Intuitive Dashboard and Centralized Game Bank

Ensure that students and teachers can **easily navigate their learning progress** and access educational resources.

- Implement a **Student Dashboard** displaying progress, the Word of the Day, and accessible game modules.
- Develop a **Teacher Dashboard** that provides insights into student engagement, quiz results, and class analytics.
- Establish a **Game Bank** containing a repository of system-created and teacher-created educational games.

3.1.4 Enhance Student Engagement Through Gamified Learning Modules

Increase student motivation by integrating game-based learning mechanics that improve Filipino language skills.

- Offer **interactive games focused on vocabulary, grammar, and comprehension**.
- Develop both **individual and group learning experiences** through mini-games and quizzes.
- Create **adaptive challenges** where students can progress based on their performance

3.1.5 Track and Encourage Student Progress with Leaderboards and Performance Analytics

Motivate students through **ranking systems and performance tracking**, while helping teachers monitor progress.

- Implement a **Leaderboard** to rank students based on quiz and game activity performance.
- Provide **Teacher Progress Tracking** to monitor student performance, including completion status and cheating detection.
- Develop a **Class Record Management System** to allow teachers to export student records for offline access and further analysis.

3.2. Specific Objectives (Key Deliverables)

3.2.1. Functional Requirements

3.2.1.1 User Management

Description: This module ensures that only authorized users (teachers and students) can access the platform.

- **Registration Teacher** – Teachers create an account with required details.
- **Registration Student** – Students can create accounts **with or without a class code**. They can join a class later using a class code or by being manually added via email by a teacher.
- **Login Teacher** – Teachers authenticate using email and password.
- **Login Student** – Students authenticate using email and password.
- **Edit Profile Teacher** – Teachers update basic profile details.
- **Edit Profile Student** – Students update basic profile details.

3.2.1.2 Class Management

Description: Teachers create and manage their classes, and students can join through two methods.

- Teacher Class Creation – Teachers create and manage classes.
- Student Enrollment – Students enroll via class code or are manually added by the teacher using their registered email.

3.2.1.3 User Dashboard & Gamebank

Description: The dashboard provides students and teachers with an overview of their progress and available activities.

- **Student Dashboard** – Displays personal progress, Word of the Day, and game access.
- **Teacher Dashboard** – Provides insights on student engagement, quiz results, and **class overview**, including:
  - **Summary of all classes** (number of students, active classes, and open games)
  - **Quick actions** to **create a class** or **design a new game**
- **Game Bank** – Repository of available games, including system-created and teacher-created content.

3.2.1.4 Game-Based Learning Modules

Description: Games are categorized based on Filipino language challenges such as Grammar, Vocabulary, and Comprehension. Each game contributes to the student's progress, and a minimum score is required to level up. Students may take different learning paths based on their performance.

- **Memory Game Individual** – Solo gameplay to match Filipino words with English translations.
- **Memory Game Group** – Team-based mode with collaborative decision-making.
- **Paaralan Quest Individual** – Solo comprehension-based quiz on Filipino reading materials.
- **Paaralan Quest Group** – Team mode where students discuss and vote on comprehension answers.
- **Guess the Word** – Students arrange shuffled letters to form the correct word.
- **Parke Quest** – Grammar-focused activity where students arrange jumbled words.

3.2.1.5 Leaderboard & Progress Tracking

Description: The system tracks student performance and provide record.

- **Leaderboard for Student** – Displays student rankings after each game.
- **Teacher Progress Tracking** – Teachers track student performance and progress, including:
  - Completion status (**Completed, Ongoing, Not Yet Started**)
  - Cheating detection**:** The system will flag suspicious activity, such as **excessive tab-switching**.
- **Class Record Management** – Teachers manage student records, track activity completion, and analyze student performance across multiple games and assessments. Class records can also be exported to Excel for further analysis and offline access.

3.2.2. Non-Functional Requirements

- **Security**

  - User passwords must be encrypted before storing in the database.
  - User authentication should be secured using email verification and session management.

- **Anti-Cheating Measures**

  - Quiz and game questions should appear in a random sequence for each student.
  - The platform should enforce full-screen mode during quizzes and activities.
  - Switching windows or opening other tabs during quizzes would be detected.

- **Performance & Scalability**

  - The system should handle multiple students accessing quizzes and games simultaneously without slowdowns.

- **Usability & Accessibility**

  - The interface should be simple, engaging, and easy to navigate for Grade 5 students.