

1. Introduction

1.1. PROBLEM STATEMENT

The SmartClass project aims to address the challenge of student engagement in large classrooms. Instructors often struggle to facilitate active participation, as students (especially the ones seated farther back) find it difficult to ask questions or contribute to class discussions. Traditional methods like verbal Q&A sessions or raising hands can be inefficient in large settings. To solve this problem, SmartClass will be a web/app-based interactive learning platform that allows students to ask questions (anonymously or with their names), participate in quizzes, and engage in class discussions. Instructors can use the platform to initiate polls, post questions, and provide real-time feedback. The system will also generate participation data that instructors can use for grading purposes. This platform aims to make learning more inclusive, accessible, and engaging for all students, regardless of their physical location in the classroom.

1.2. INTENDED USERS

The intended users of this product are those involved in a classroom environment. Its most notable uses will be in a large lecture hall with many students, but there are use cases in smaller settings as well. The goal is to increase student participation and give teachers powerful tools to address the concerns of their classroom.

User Groups:

(1) Teachers

Characteristics:

- Leader in a classrooms of over 100 students
- Passionate about teaching
- Lacks the time to address each individual student's questions
- Supportive of others who struggle to learn

Needs:

- A way to receive and address questions posed by students in a large classroom environment
- A centralized place to take attendance, annotate live lectures, post grades, save coursework and help students learn efficiently
- Methods to track student progress and attendance
- Tool to create polls and quizzes for students to participate in
- Way to organize the coursework in one place.

Benefit:

- SmartClass provides an easy way of tracking student participation and attendance in large classrooms
- The ability to upload documents provides a centralized location for all in class activity
- Checking student understanding of the lecture material is simple with quizzes and polls
- Ability to print and export data from SmartClass gives an easy to way transfer data

(2) Students

Characteristics:

- All types of personalities including: shy, bored, lazy, attentive, resilient
- Intelligent and ready to learn
- Young and inexperienced

Needs:

- A way to participate in class discussions
- Asks questions without fear
- Engage in learning activities beyond physical classroom constraints
- A way to access previous class materials

Benefit:

- Enables active participation
- Provides access to an archive of past questions and discussions
- Provides a more interactive learning environment

(3) Teaching Assistants**Characteristics:**

- Wants to help students learn
- Eager to answer questions
- Analytical mind
- Struggles with having enough time for everything

Needs:

- Way to effectively analyze student participation
- Centralized system to answer student questions
- Recognize when a student might need support

Benefit:

- Ability to answer questions outside of class hours
- No longer restricted to office hours for interactions with students
- Answer more questions in a shorted time
- Ability to create resources and upload them for students to use
- Increase productivity in less time