Case Study: AI-Powered Presentation Generator for Educators

Overview

As a former educator, I know firsthand how much time teachers pour into building classroom presentations—often late at night, after grading, with standards looming and little energy left. Our team set out to design a tool that gives some of that time back.

The Presentation Generator is an AI-powered platform developed by Marvel AI to streamline the presentation creation process for teachers. By generating slide outlines and content from just a few simple inputs, the tool enables educators to build polished, customizable decks aligned to curriculum standards—in minutes instead of hours.

See Product Requirements Document **here**

The Problem

Educators are burning out trying to keep up with the demand for engaging, standards-aligned presentations. Most existing tools are either too generic, too time-consuming, or lack integration with curriculum needs.

The Goal

Design a fast, intuitive, and flexible AI-powered tool that helps educators:

- Generate quality slide content tailored to topics and grade levels.
- Align materials with educational standards.
- Customize and refine the result before exporting to usable formats (PPTX, PDF, Google Slides).

My Role & Contributions

As part of a cross-functional team, I contributed to:

- Conducting competitive research and reflecting on the pain points I experienced as a teacher when creating presentations
- Mapping user flows and identifying key steps in the generation process.
- Wireframing and prototyping early interfaces, iterating based on feedback.
- Designing high-fidelity screens consistent with MarvelAI's visual identity.

Constraints & Challenges

- We had to balance speed and flexibility without overwhelming users.
- Interface interactivity had to remain simple—especially for teachers unfamiliar with tech.
- Scope shifts and time constraints required clear prioritization of core features.

Research & Insights

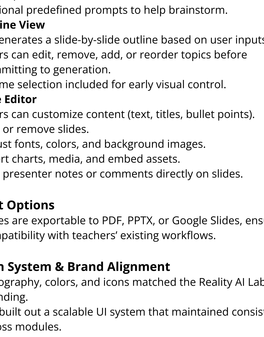
We first completed a competitive analysis of Gamma, another AI-powered presentation generator. See the full analysis **here**. From this research and personal experience, We knew that we needed a tool that led to:

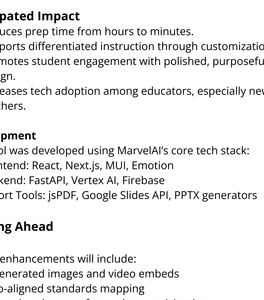
- Faster creation tools to save prep time.
- Curriculum alignment to meet standa rds.
- Slide customization for differentiated learning.
- Export formats that integrate with existing classroom tech.

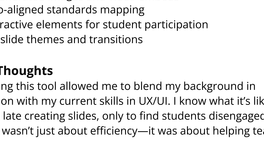
Wireframes and Their Issues

Version 1 of the Presentation Generator revealed several key usability issues:

- No predefined prompts, requiring users to manually type in topics.
- Lack of input for educational level or file uploads.
- No outline or content previews prior to slide generation.
- No ability to edit or reorder slides post-generation.
- Limited customization of visual themes or content structure.







The Solution

We introduced a three-stage experience that supports educator workflows from start to finish:

1. Input Interface

- Choose educational level and topic.
- Input custom text or upload files (PDF, DOCX, PPTX, CSV, Google Sheets).
- Optional predefined prompts to help brainstorm.

2. Outline View

- AI generates a slide-by-slide outline based on user inputs.
- Users can edit, remove, add, or reorder topics before committing to generation.
- Theme selection included for early visual control.

3. Slide Editor

- Users can customize content (text, titles, bullet points).
- Add or remove slides.
- Adjust fonts, colors, and background images.
- Insert charts, media, and embed assets.
- Add presenter notes or comments directly on slides.

Export Options

- Slides are exportable to PDF, PPTX, or Google Slides, ensuring compatibility with teachers' existing workflows.

Design System & Brand Alignment

- Typography, colors, and icons matched the Reality AI Lab branding.
- We built out a scalable UI system that maintained consistency across modules.

Anticipated Impact

- Reduces prep time from hours to minutes.
- Supports differentiated instruction through customization.
- Promotes student engagement with polished, purposeful visual design.
- Increases tech adoption among educators, especially new teachers.

Development

This tool was developed using MarvelAI's core tech stack:

- Frontend: React, Next.js, MUI, Emotion
- Backend: FastAPI, Vertex AI, Firebase
- Export Tools: jsPDF, Google Slides API, PPTX generators

Looking Ahead

Future enhancements will include:

- AI-generated images and video embeds
- Auto-aligned standards mapping
- Interactive elements for student participation
- Full slide themes and transitions

Final Thoughts

Designing this tool allowed me to blend my background in education with my current skills in UX/UI. I know what it's like to stay up late creating slides, only to find students disengaged. This project wasn't just about efficiency—it was about helping teachers teach.