

1. Title

Making Complex Concepts Visual: Using Canva AI to Teach Abstract Topics (Grades 8–12)

2. Problem Statement

Students in grades 8–12 frequently struggle with abstract, process-based topics such as cell division in Biology or projectile motion in Physics. When these ideas are taught only through text or static diagrams, learners find it difficult to visualize how a process unfolds over time or in space.

This gap in visual understanding leads to rote memorization instead of real comprehension, lower engagement during lectures, and difficulty retaining concepts that are inherently dynamic or spatial in nature.

3. Proposed Solution

The project proposes using Canva AI and its design tools to convert complex, process-based topics into visual presentations and short explainer videos.

Using Canva's Magic Design and animation features, teachers can build presentations for topics such as cell division and projectile motion, paired with short 8-second animated video clips that isolate and illustrate one key moment of the process at a time.

This combination of a full presentation plus short, focused video clips helps break down multi-step concepts into digestible visual chunks, making the material easier to follow and retain.

4. Tools/Technology Used

- **Canva AI (Magic Design, Magic Media)** – generates layout and visual suggestions for presentations from a topic prompt
- **Canva Presentations** – used to build the main slide deck for each topic
- **Canva Video / Animate** – used to create the short 8-second explainer clips
- **Canva Elements Library** – icons, illustrations, and animated stickers used to visualize scientific processes
- **Platforms** – Web, Windows, macOS, iOS, Android

5. Step-by-Step Plan

1. **Topic Selection**
 - Identify complex, process-based topics from the grade 8–12 syllabus (e.g. cell division, projectile motion).
 - Break each topic down into its key visual stages.
2. **Presentation Design**
 - Use Canva AI to generate a base presentation layout for the topic.
 - Add diagrams, icons, and animated elements to represent each stage of the process.
3. **Short-Video Creation**
 - Create an 8-second animated clip highlighting one key visual moment of the concept.
 - Use motion and transitions in Canva to show change over time (e.g. a cell splitting, a projectile's arc).
4. **Classroom Demonstration**
 - Present the slide deck alongside the short video during the lesson.
 - Explain how each visual element was added and why it helps convey the concept.

5. Feedback & Iteration

- Gather feedback from students and teachers on clarity and engagement.
- Refine visuals and pacing of the short clips based on feedback.

6. Scaling & Sharing

- Apply the same method to additional topics across subjects and grade levels.
- Share the presentation and video templates with other teachers.

6. Learning Outcomes

By completing this project, participants will:

- Understand how visual and animated content can make abstract concepts concrete for students.
- Develop practical skill in using Canva AI to design presentations and short explainer videos.
- Improve comprehension of process-based topics such as cell division and projectile motion.
- Learn to break a complex concept into short, focused visual segments.
- Align teaching practices with 21st-century digital and visual learning goals.

7. Link to Hackathon Theme / SDGs

Hackathon Theme: AI & Digital Tools for Inclusive Education – This project demonstrates practical use of AI-powered design tools to make complex science concepts visually accessible.

Relevant Sustainable Development Goals (SDGs):

- **SDG 4: Quality Education** – Improves comprehension and engagement through visual, learner-friendly content.
- **SDG 9: Industry, Innovation & Infrastructure** – Applies AI-powered design tools to modernize classroom teaching methods.

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Video link – <https://youtu.be/EM-jQ4nMWqU>