

## **Multimodal AI-Enhanced Educational Assistant with Real-Time Q&A and Dynamic Learning Support**

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### **Abstract:**

In this work, we present a multimodal AI-powered Educational learning assistant with integrated real-time Q&A and dynamic learning support. Backed by advanced technologies including Gemini 1.5 Pro, Spacy, T5, BERT, LSTM, and GenAI, it answers questions irrespective of their medium (text, images, videos, audio). A real-time GPT-3-based Q&A chatbot powers core functionalities, recording session history to aid personalized learning. With dynamic session highlights, links for further reading, and an intuitive UI created on Streamlit, the assistant acts as a personal collection of information. It makes the learning experience much more interactive because, instead of just reading about concepts, students can interact with the content in many formats, with immediate context-aware answers. We illustrate the design of the system, including its integration of relevant AI models and how it may change the future of educational tools by providing a more immersive and relevant learning experience.

### **Keywords:**

Multimodal AI, Educational Assistant, Real time Q&A, Gemini 1.5 Pro, GPT-3.5 Pro, Streamlit, Dynamic Learning Support, Personalized Learning, Component, formatting, style, styling, insert.