### **Abstract**

The increasing dominance of artificial intelligence (AI) in education presents new opportunities for knowledge management and the study of complex subjects such as Big Data. This study explores the integration of AI-powered podcasts as an interactive learning tool that enables students to engage with Big Data concepts actively. Through **NotebookLM**, an AI-based platform, students interacted with an intelligent podcast that allowed them to ask questions, receive tailored responses, and refine their understanding dynamically. This approach highlights the potential of AI to support knowledge management and facilitate more profound learning experiences.

### **Methodology**

As part of a Big Data course in academia, The students were asked to use an AI-driven podcast within **NotebookLM** to explore various aspects of the field. The AI functioned as a responsive knowledge management tool, allowing students to access, query, and organize information in a way that mimics expert consultation. Students were divided into groups, each selecting a specific Big Data topic and engaging with the podcast individually and collaboratively. They posed questions, analyzed AI-generated responses, and synthesized insights into structured knowledge.

A mixed-method research design was employed to assess the learning impact. Quantitative data was collected via pre- and post-course surveys measuring knowledge acquisition, engagement, and perceived effectiveness of AI-driven learning. Qualitative data was gathered through structured discussions and reflections on the interaction with the AI podcast, focusing on how students processed and applied the information.

### **Preliminary Findings**

Initial findings suggest that AI-powered podcasts significantly enhanced students' ability to structure and manage knowledge in Big Data. The interactive nature of the AI system encouraged curiosity, deeper questioning, and iterative learning. Compared to static learning materials, the AI-driven approach provided a more **context-aware, adaptive learning experience**, allowing students to personalize their knowledge acquisition. Furthermore, collaborative discussions around AI-generated insights fostered **peer-to-peer knowledge construction**, reinforcing core Big Data principles.

### **Implications**

This study highlights AI's potential as a transformative tool for knowledge management in higher education. AI-powered platforms like **NotebookLM** offer a **scalable, responsive, and student-centered approach** to complex subject learning. By integrating AI into educational frameworks, institutions can enhance critical thinking, promote self-directed inquiry, and bridge the gap between passive content consumption and active knowledge synthesis. Future research should explore AI's role in **long-term knowledge retention, decision-making support, and cross-disciplinary applications**.

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