

## Google Gemini: Google's Latest Break Through in English Language Teaching (ELT)

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### Abstract

*The latest Google project called Google Gemini, introduced in August 2023, is a significant breakthrough in artificial intelligence research. Gemini focuses on the development of AI models that can learn and understand abstract concepts more deeply, particularly in the context of English Language Teaching (ELT). Gemini uses an unsupervised learning approach, allowing AI models to extract important features from data without the need for prior labeling. This paves the way for models to learn richer data representations, which can be applied to various complex AI tasks such as reasoning, problem-solving, and natural language understanding in the context of ELT. The preliminary research results of Gemini show a significant improvement in the ability of AI models to understand context, perform logical inference, and solve tasks that require deep conceptual understanding in English language teaching. As we advance, Gemini is expected to become the foundation for developing more intelligent, adaptive, and useful AI systems in ELT. This research will further explore the technological innovations of Gemini and its potential to have a transformative impact on the future of artificial intelligence and its applications in the field of English language teaching.*

**Keywords:** Google Gemini, Artificial Intelligence, Unsupervised Learning, Conceptual Understanding, AI Model Development, AI Applications in English Language Teaching (ELT)

### INTRODUCTION

Gemini, Google's latest multimodal AI tool launched on December 6, 2023, is a Google DeepMind AI model with Visual Language Model (VLM) technology that directly competes with ChatGPT, GPT-4, and OpenAI's GPT-4 vision (Coles, 2023; Perera & Lankathilaka, 2023). This AI tool features several large language models (LLMs) and natural language processing (NLP) technologies (Farrokhnia et al., 2023). It includes various LLM sizes and encompasses three versions: Gemini Nano, Gemini Pro, and Gemini Ultra. These three versions are designed to meet the diverse needs and demands of different users. Nano is designed for efficient 'on-device' usage and greater accessibility on smartphones. Ultra is the most powerful version of the three and fully leverages Google's AI capabilities. However, the Pro version is balanced in terms of usage and AI capabilities as it is a combined version of the other two (Team et al., 2023).

The Gemini tool is beneficial in addressing reinforcement learning, deep learning, and education-related digital issues. Its interdisciplinary usage will help in integrating AI tools across various fields for future integration, collaboration, and technological innovation, especially for researchers, educators, and digital content creators. It also helps in finding diverse responses and seeking assistance to provide solutions for future learning innovations through generative AI and its applications in education, healthcare, management, climate change, and others (Ali et al., 2023; Imran & Almusharraf, 2023a, 2023b). Through this new technology report, the researchers intend to explore the

strengths and limitations of Google Gemini as a next-generation educational AI tool and consider its use and role in educational technology.

## **METHOD**

This research uses a qualitative approach to analyze the features and functionalities of Gemini, Google's latest multimodal AI tool. Data collection was done through a systematic literature review of the latest scientific publications on Gemini. In this case, the referenced studies include journal articles, conference publications, and official information sources from Google.

Data analysis was performed by categorizing Gemini's features based on the key characteristics revealed in the literature, such as large language model (LLM) capabilities, natural language processing (NLP) technology, integration of vision models, and applications in various domains. Furthermore, we assessed the potential use of Gemini in the context of education, healthcare, management, and socio-environmental issues based on the description of its capabilities.

## **RESULTS AND DISCUSSION**

Based on the literature review, Gemini is the latest multimodal AI model developed by Google. Gemini has three main variants, namely Gemini Nano, Gemini Pro, and Gemini Ultra, designed to meet the needs of different users. Gemini Nano is a more efficient version that can be accessed on mobile devices, while Gemini Ultra is the most powerful version that leverages Google's AI capabilities to the fullest. The Gemini Pro version is in the middle, offering a balance between usability and AI capabilities. Gemini utilizes visual language model (VLM) technology that enables the integration of text and image processing. This allows it to generate comprehensive answers and solutions by combining information from various modalities. This capability is particularly useful in the context of education, where students can ask questions and receive responses that utilize text, images, and even audio or video. In the healthcare field, Gemini can assist in disease diagnosis, care planning, and the development of innovative solutions by integrating clinical data, medical research, and visual insights. In the management sector, this tool can be used for data analysis, decision-making, and the development of more comprehensive business strategies. Furthermore, Gemini also has extensive potential applications in socio-environmental issues, such as climate change and sustainability. Its ability to understand and integrate information from various sources can help in the formulation of more holistic and effective solutions. Overall, Gemini is a highly promising multimodal AI tool, with capabilities that can have a significant impact in various fields, especially in the context of education, healthcare, management, and socio-environmental issues.

## **CONCLUSION**

Gemini is the latest multimodal AI tool developed by Google, with three main versions: Gemini Nano, Gemini Pro, and Gemini Ultra. Gemini utilizes visual language model (VLM) technology that enables the integration of text and image processing, providing comprehensive and interdisciplinary capabilities. Gemini has wide application potential,

especially in the context of education, healthcare, management, and socio-environmental issues.

In recommending further research on Gemini, a multimodal AI system, there are several important points to note. First, further studies are needed to evaluate the performance and practical impact of Gemini on various application domains. This will provide a more comprehensive insight into the potential and capability of this system in handling diverse tasks. Second, in-depth research is needed on the ethical and social implications of using Gemini, especially about data privacy, accountability, and fairness. These issues are becoming increasingly important as the use of AI technology becomes more widespread and complex in various aspects of life. Finally, a comparative study with other multimodal AI tools can provide a more comprehensive insight into Gemini's advantages and limitations. This will help to position Gemini more accurately in the evolving AI technology landscape.

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