
Harnessing AI to Enhance Multimodal Argumentative Writing: Balancing Creativity and Technology Across Diverse Cultural Contexts

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Abstract

While multimodal composition-incorporating visual, auditory, and interactive elements has gained relevance in the digital age, its application in academic writing remains underexplored, especially in non-Western settings (Jewitt & Kress, 2022; Miller & Stornaiuolo, 2021). As AI tools become more integrated into education, it is essential to explore how they can reshape traditional pedagogies and foster inclusive, innovative teaching practices. In addition, cultural differences in attitudes toward technology impact how students engage with AI tools and multimodal texts (Lantolf & Thorne, 2022). This research examines whether AI-supported multimodal writing can improve students' argumentative skills and engagement, particularly among second-language university writers in the UAE, China, and Canada. It focuses on AI's potential to provide personalized feedback, suggest language improvements, and support the development of culturally relevant arguments.

This study adopts the mixed-methods research design. The experimental group (n=25) from each cultural context was assigned a multimodal argumentative writing project, completed over three weeks. In the first week, students researched the topic and created a detailed outline, followed by designing a visual representation of key data in the second week. In the final week, students scripted, recorded, and edited an audio or video component, with the experimental group using AI tools and documenting their usage in a journal. The control groups were assigned the same task but without the use of AI tools. The two groups of students' multimodal texts from each cultural context were analyzed, focusing on how they incorporated multimedia elements (e.g., images, videos, hyperlinks) and structured their arguments. In addition, surveys were conducted with the experimental groups to assess their perceptions, skills, and attitudes toward multimodal argumentative writing and the use of AI tools. Focus groups and interviews were conducted with a sample of participants in the experimental groups to gain in-depth insights into their experiences, challenges, and perceptions regarding the use of AI tools in multimodal writing.

The study found the students in the experimental groups who used AI tools produced more cohesive and visually dynamic multimodal texts compared to the control groups. Similarly, these students expressed greater confidence and efficiency in completing the project and commented on the advantages of AI in organizing and enhancing their arguments. However, challenges were also revealed in the study, such as over-reliance on AI tools or concerns about authenticity and creativity in the writing process. Students from different cultural backgrounds showed varying levels of comfort with AI tools, with some embracing them for creativity and efficiency, while others may exhibit skepticism or prefer more traditional

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methods. These discussions can uncover cultural nuances in how students from different backgrounds perceive AI's role in their learning process.

References

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