Exploring The Usability of Generative AI Among College Students

Brianna Mendez-Espain, Marc-Emil Sevilla, Justin Catalano, James Pedroff, Dori Hjalmarson, and David Schuster

San José State University, San José, CA

Introduction

- Existing research highlights potential drawbacks, including reduced critical thinking and productivity issues, particularly with challenging tasks (Gkintoni, 2025; Zhai and Wibowo, 2024).
- Generative AI tools like ChatGPT have been shown to be used complementary to traditional search engines (Chen and Feng, 2024).
- There is a gap in knowledge on directly comparing Gen AI to search engines and its effect on student mental workload.
- This study proposes comparing AI tools and traditional search engines to evaluate differences in mental workload, task efficiency, and user experience among students.

Hypotheses

- **H1:** Using generative AI will lead to higher workload than standard searches.
- **H2:** Generative AI will lead to lower efficiency than standard searches
- The current study will be explorative, and will not have a pre-established hypothesis.

Method

PARTICIPANTS

- Will be gathered through PSYCH 1 SONA POOL in exchange for participation credit

Subjective Workload Assessment Technique

- Self-report scale that measures mental workload through three dimensions: time load, mental effort load, and psychological stress load

SJSU | DEPARTMENT OF PSYCHOLOGY

Theory

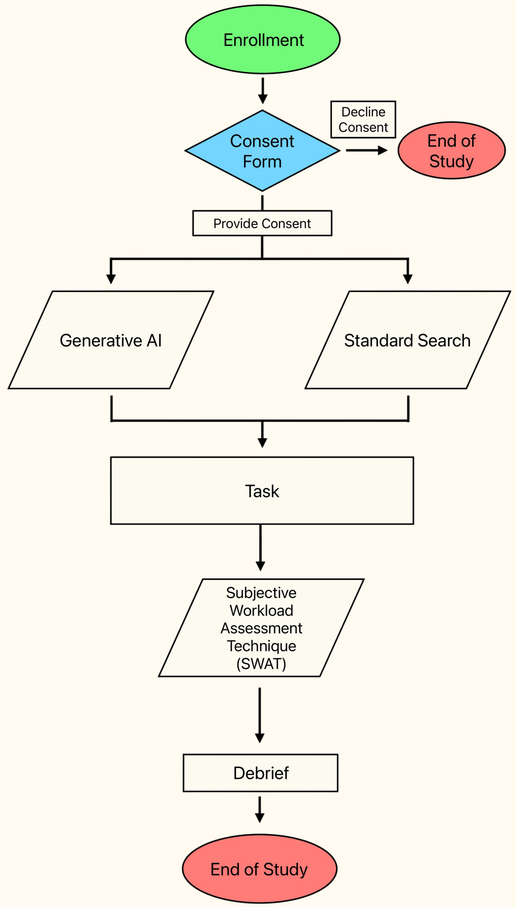
We propose an investigation of the usability factors of generative AI.

vectrlab.net/

Randomization

Task

Measures



References

Chen, X., & Feng, S. (2024). Analyzing students' information behavior in generative AI-supported small group discussions. Proceedings of the Eleventh ACM Conference on Learning @ Scale, 9, 325–329. https://doi.org/10.1145/3657604.3664657

Gkintoni, E., Antonopoulou, H., Sortwell, A., & Halkiopoulos, C. (2025). Challenging cognitive load theory: The role of educational neuroscience and artificial intelligence in redefining learning efficacy. *Brain Sciences*, *15*(2), 203. https://doi.org/10.3390/brainsci15020203

Zhai, C., Wibowo, S., & Li, L. D. (2024). The effects of over-reliance on AI dialogue systems on students' cognitive abilities: a systematic review. *Smart Learning Environments*, *11(*1), 1–37. https://doi.org/10.1186/s40561-024-00316-7

vectr lab @ sjsu