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# Learning with Generative Artificial Intelligence in Higher Education

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This research explores the use of Generative AI (GenAI) in higher education adopting a socio-material perspective. Drawing on phenomenographic analysis of written reflections from university students across multiple disciplines, the study delineates different ways students conceptualise, engage with, and perceive GenAI in learning settings. The results indicate a spectrum of experiences, extending from critical conceptions, deep engagement, and well-developed perceptions to more emerging conceptions, surface-level engagement, and constrained perceptions. Quantitative findings reveal consistent patterns of interconnection among these categories. Students holding critical conceptions of GenAI-supported learning are more likely to adopt deep approaches and exhibit developed perceptions, whereas emerging conceptions are typically associated with surface approaches and restricted perceptions. Analyses of academic performance demonstrate significant differences linked to students' conceptions and approaches. Learners who adopt deep or achieving approaches tend to perform better academically than those relying on surface approaches. Taken together, the findings indicate that effective learning with GenAI relies on a balanced and agentic form of socio-material entanglement, in which students maintain interpretive authority, critically assess AI-generated content, and employ GenAI to augment rather than substitute their own thinking. The study has multiple implications for curriculum design, assessment practices, and educational leadership focused on developing critical GenAI literacy and promoting responsible AI-integrated learning environments.

## Biography:

Dr Han is a senior researcher at the Griffith Institute for Educational Research, Griffith University. She received her PhD from the University of Sydney. Her research focuses on educational technology, learning analytics, learning sciences, and higher education teaching and learning. She is the lead editor of the Australasian Journal of Educational Technology and has over 150 publications in high-impact outlets across educational technology and higher education. She has delivered presentations at more than 90 conferences and seminars. Her work has received multiple recognitions, including a Wiley Top Cited Article Award and inclusion in Stanford's World's Top 2% Scientists list in education (2024, 2025).