香港城市大學
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AI-supported personalised learning and team-based learning: An international collaboration

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Abstract:

The widespread availability of generative AI has important implications for higher education, with the potential to transform both: 1) the way that people read, write, and communicate; and 2) the way that people teach and learn. As a consequence there has been a profound shift in the digital literacy needs of students, especially their AI literacy. In this project, AI literacy is understood as encompassing knowledge of AI as well as the ability to utilize AI ethically, creatively (Deuze & Beckett, 2022) and in context-sensitive and discipline-specific ways (see Moorhouse, Kohnke & Chiu 2024). In higher education, AI literacy thus entails a basic understanding of how AI works, familiarity with AI tools relevant to one's learning, awareness of one's epistemic needs within particular learning contexts (e.g., courses or disciplines), ability to engage AI productively to meet those needs, and maintaining a critical-ethical orientation to AI and its contributions to meeting one's epistemic needs.

This project aims to promote AI literacy defined in this way by incorporating AI into courses on digital literacy at two institutions (CityUHK and NIE, NTU, Singapore). AI will be incorporated into these courses in two main ways: first, to support the goal of personalised learning as students go about learning theoretical concepts of digital literacy and their applications; second, to support effective team-based learning, as students work in groups to complete a digital video essay. This will involve the creation of two customised bots for students: a 'Concept Bot' and a 'Designer Bot', trained on course content and prompted to use active learning techniques in interaction (Khan, 2024). The goal of the Concept Bot is to scaffold learning by eliciting concepts from students, discussing those concepts with them in relation to tailored examples, and summarising learning. The Designer Bot adopts the role of an expert video designer/producer, capable of providing students with scaffolding for their group video project, e.g. brainstorming ideas for the project and visual design. These pedagogic components aim to facilitate AI literacy in the following way. First, the bots will be tailored to the epistemic and disciplinary context of the course, in line with the notion of context-sensitivity in AI literacy. Second, the personalized and team-based learning tasks enable students to identify their epistemic needs with regards to the course (e.g., gaps in knowledge, exemplification, application) or task (e.g., design principles for video creation) and leverage the bots to meet those needs. Third, the built-in evaluation component (where students assess output of the bots, cross-referencing with course readings) ensures that students' critical orientation is developed as an integral part of AI literacy.

The effectiveness of the project will be evaluated by a pre/post questionnaire targeting AI literacy, interviews with students, and analysis of student reflections that evaluate the bots output.