Developing Students' Evaluative Judgement through AI-integrated Assessment Design

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1. Background

CPT403 Object Oriented Programming is a postgraduate module shared by four Master's programmes, with nearly 70 students enrolled. As part of the University's AI curriculum enhancement initiative launched in 2024, a new learning outcome was added requiring students to use AI tools to solve programming problems and critically evaluate their solutions. To meet this goal, the existing group development project was redesigned. Students first build a software system, then individually use XIPU AI to critically evaluate the part they contributed—assessing strengths, weaknesses, and alternative approaches—before collaboratively refining the system. This redesign aims to strengthen students' evaluative judgement, critical thinking, and alignment with authentic software engineering practices.

2. Solutions

To embed AI-supported evaluative judgement into the assessment, the redesigned project integrates a structured AI-assisted self-evaluation process. The solutions include:

1. Integrating XIPU AI into individual evaluation: Students use the AI to analyse strengths and weaknesses of their code, explore alternative solutions, and understand potential optimisations.

2. Implementing a two-phase assessment structure: Students first conduct an individual critical evaluation, then return to their group to discuss AI recommendations, determine feasible refinements, and collaboratively improve the system.
3. Requiring documented AI interactions: Students submit a report detailing their conversations with XIPU AI, reflections on AI suggestions, and rationales for adopting or rejecting them, ensuring AI remains a supportive—not substitutive—tool.
4. Providing AI literacy training: The module includes a lecture on AI tools in programming, opportunities for teacher feedback, and peer review to help students learn prompt-writing and critical evaluation of AI outputs.
5. Aligning with authentic industry practices: By emphasising system refinement and refactoring, the assessment mirrors real-world software development processes and builds students' professional readiness.

3. Outcomes and Benefits

The initiative has produced several positive impacts:

- Students engage more deeply with their learning through AI-supported reflection.
- Critical thinking, evaluative judgement, and metacognitive skills are notably strengthened.
- AI tools increase interactivity and engagement, promoting ownership and responsibility in learning.
- The project serves as a scalable model for AI-integrated assessment design, offering valuable insights for future curriculum innovation in the GenAI era.

4. Replicability and Promotion Value

The approach is transferable to modules requiring design evaluation, project development, or critical review across computing, engineering, design, and HCI. The two-phase model—development, AI-assisted self-evaluation, and

group refinement—is broadly applicable and provides a scalable framework for AI literacy development and authentic assessment.

5. Next Steps

Moving forward, the module will enhance students' proficiency with AI tools by providing more structured training on prompt-writing and critical evaluation. More detailed guidelines for documenting AI usage will be introduced to ensure consistency and comparability across students' self-evaluation reports. The teaching team will also explore leveraging XIPU AI to automatically generate analytics on students' AI interactions, reducing staff workload and improving feedback efficiency. In parallel, the module leader will continue programme-level AI-enhanced curriculum review to build a more systematic and forward-looking framework for AI-integrated teaching.