THE HONG KONG POLYTECHNIC UNIVERSITY 香港理工大學

Educational Development Centre 教學發展中心

GenAI in Learning, Teaching and Assessment

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UX Design Fundamentals

Why did the instructors use GenAI for learning and teaching?

Recent advancements in Generative AI (GenAI) have shown significant promise in UX design, including enhancing productivity, inspiring creativity, and lowering barriers to complex tasks. These benefits have attracted increasing attention from design educators, who aim to better prepare students for emerging design practices. Journey Map (JM), as a core UX tool widely taught in design curricula, plays a crucial role in helping students analyse user data and explore design opportunities. However, while GenAI has been explored in supporting tools like personas and storyboards, its application in the JM creation process remains underexplored. To address this gap, Zhibin and his team developed **GeneyMAP** (**Gen**AI-empowered Jour**ney Map** creation tool) to investigate how GenAI could support both teaching and learning by facilitating JM creation. Through formative studies and user evaluations involving educators, students, and practitioners, the instructors used GeneyMAP as a research probe to examine GenAI's educational value through comparison with commonly used conventional tools.

How was GenAI applied in this scenario?

Based on a formative study involving key stakeholders in UX education, including students, educators, and design practitioners, GeneyMAP was designed to address six specific design goals:

- **D1** Structured Template Distillation
- **D2** User Data Analysis and Mapping
- **D3** Design Opportunities Identification
- **D4** Visual Content Generation
- **D5** Stakeholder Simulation
- **D6** Language Enhancement

In an educational setting, GeneyMAP scaffolds students through a four-step journey map creation workflow, offering hands-on exposure to how GenAI can support and reshape UX design practices:

Step 1-Distilling the Structured JM Template

allows students to upload interview scripts, from which GenAI extracts a scenario and identifies journey phases to form the template's structure (see Figure 1.a), addressing D1 and D6.

Step 2-Generating Individual JMs

automatically maps scripts into individual journey maps for each real user and enables simulation of synthetic users to foster broader exploration (D2, D5, D6; see Figure 1.b).

Step 3-Merging JMs and Identifying Design Opportunities

consolidates individual JMs to highlight common patterns and pain points, from which GenAI generates visualised opportunities, supporting both ideation and synthesis (D3, D4, D6; see Figure 1.c).

Step 4-Exploring Design Inspirations

facilitates in-depth, prompt-based conversation with a GenAI agent to refine ideas and generate visuals, encouraging iteration and team communication (D4, D5, D6; see Figure 1.d).

This process integrates GenAI at every stage to scaffold analysis, creativity, and reflection in a structured yet flexible JM creation workflow.

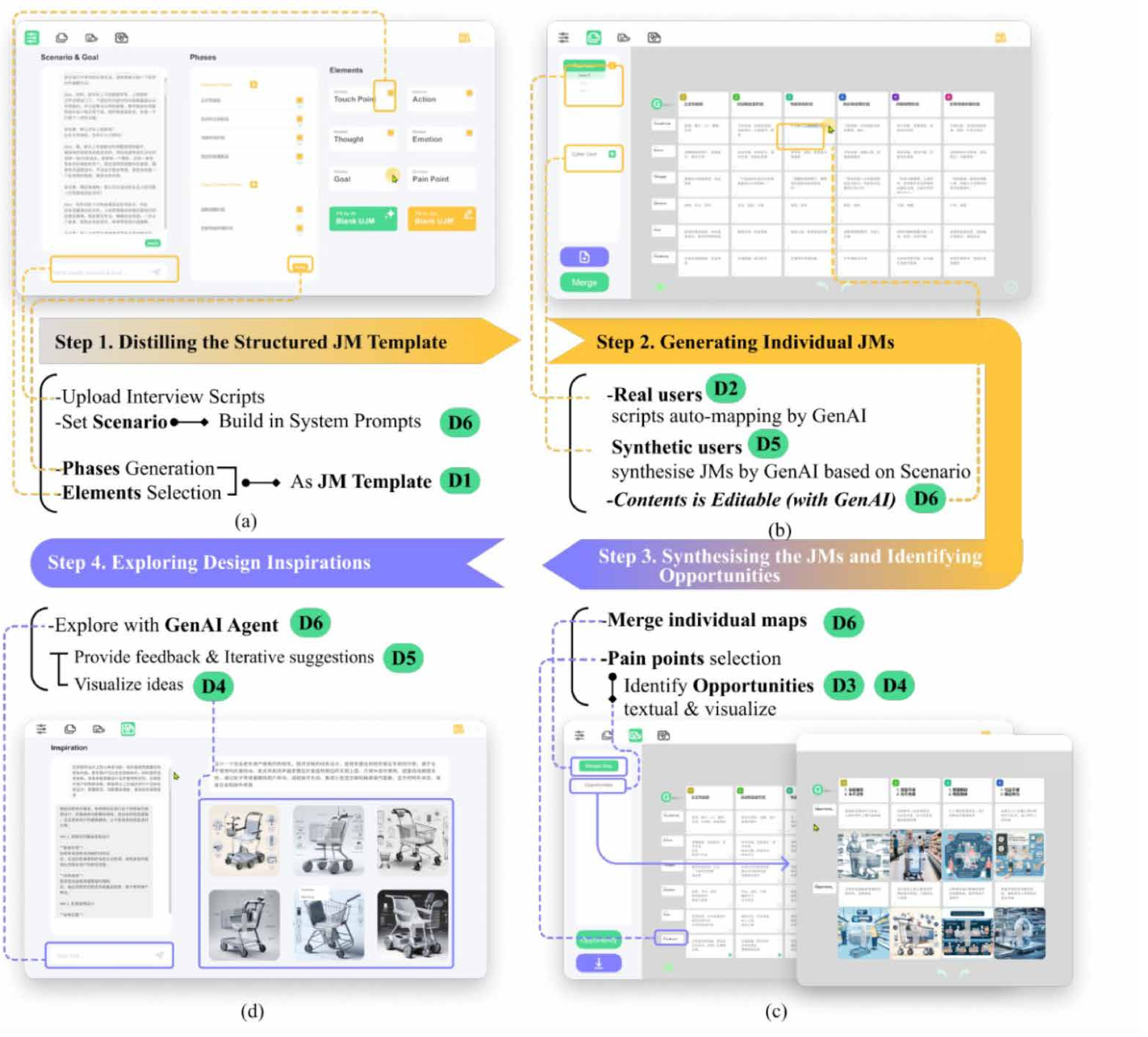

Figure 1: The detailed use scenario of the four JM creation steps with GeneyMAP.

What was the impact on student learning?

GeneyMAP significantly streamlined the JM creation workflow, particularly benefiting UX design students by offering a concrete demonstration of how GenAI can enhance design practice. By automating time-consuming steps like data distillation and mapping, the tool helped students shift their focus from mechanical tasks to strategic decision-making. This not only reduced cognitive load but also scaffolded their understanding of how GenAI can actively support ideation, iteration, and visualisation in design practice. For instructors, it provided a research-grounded platform to reflect on pedagogical methods and experiment with AI-augmented learning environments.

What were the challenges encountered during the implementation and what solutions were used?

During the evaluation of GeneyMAP in a research context, several pedagogical and cognitive challenges were identified, which point to key areas for attention if the system is later implemented in real-world educational environments. Key challenges and proposed solutions include:

Challenge 1:

Risk of reduced student engagement due to over-automation. **When tasks like mapping or ideation are proactively assisted by GenAI, students may skip critical interpretation steps and rely too heavily on GenAI.**

Solution:

Future implementation should incorporate instructional strategies that explicitly require students to critique, revise, or justify GenAI outputs. Activities like AI–human comparison, reflection prompts, and peer discussions may help re-center human judgment and encourage active participation.

Challenge 2:

Occasional inaccuracy or irrelevance in GenAI-generated content. **Participants noted issues such as mismatched design opportunities and superficial mapping of user inputs.**

Solution:

In educational use, instructors should prepare learners to perform verification and correction tasks as part of the learning process. Embedding quality-check checkpoints, collaborative review rounds, and human-in-the-loop exercises could mitigate these risks while deepening design reasoning.

Looking ahead, Zhibin's team recommends further development of GenAI for JM creation and UX design that explicitly balances automation with a human-in-the-loop approach. Such a design would enhance transparency by making the rationale behind GenAI-generated decisions clearly traceable. Moreover, they advocate for promoting GeneyMAP as an educational tool in design curricula, where it could not only streamline user research workflows but also foster students' understanding of how GenAI can critically support and augment the UX design process.