

Examining students' usage of artificial intelligence for UX projects: insights from an Informatics Service Management course

MARIJA KUŠTELEGA^{1,*} 

RENATA MEKOVEC 

Received: 21 October 2025 – Revised: 1 April 2026 – Accepted: 15 May 2026

ABSTRACT: AI is increasingly being adopted in industry, while its use in education has been insufficiently explored. The aim of this study was to investigate how students utilize AI in an undergraduate course centered on solving project tasks in UX design education. The results reveal that the majority of students employed AI to help them complete project assignments (87%). The persona method, characterized by standardized and detailed descriptions, involved the most extensive use of AI (59.7%), followed by the customer journey map (33.9%), the value proposition canvas (29%), and the user story map (22.6%). Students used AI with the intention of completing tasks faster, but their use for creative tasks was limited, as they did not have sufficient knowledge to use it effectively. Overall, students supported the idea of AI use in teaching, but highlighted the need for instructional support from teachers, such as providing clear instructions and guidance on how to utilize AI effectively to produce higher-quality results. Integrating AI into HCI education can help bridge the gap between academic focus and industry demands, thus better preparing students for future job demands.

KEYWORDS: UX design, project-based learning, artificial intelligence

JEL CODES: I23, I29

¹ Department of Information Systems Development, Faculty of Organization and Informatics, University of Zagreb, Varazdin, Croatia

* Corresponding author: marija.kustelega@foi.unizg.hr

Open Access This article is licensed under a Creative Commons Attribution 4.0 International License, which permits use, sharing, adaptation, distribution and reproduction in any medium or format, as long as appropriate credit is given to the original author(s) and the source.

1. Introduction

Artificial intelligence (AI) is increasingly being adopted in the design industry, particularly to support service development activities (Uusitalo et al. 2024). The main reasons for using AI in the software engineering industry are to increase efficiency and accelerate service development (Ozkaya 2023; Sharma et al. 2024; Belzner et al. 2023). It can help with many software engineering tasks, such as writing more complete specifications, improving testing through generated test cases, and assisting with documentation and translation (Ozkaya 2023). This growing adoption of AI in the service development industry has become a key reason why it deserves attention. However, while industry has advanced in its use of AI, the education of future software professionals has not changed significantly. It is becoming evident that there is a significant gap between educational focus and industry practice (Tsao et al. 2025). Universities and their governing bodies must embrace and integrate AI technologies into higher education practices (Kétyi et al. 2025), particularly to ensure the development of adequate AI literacy among students. As Hartyándi (2025) highlights, industry hype has created normative pressures on employees, resulting in disorganized AI implementation that often depends on individual characteristics. This underscores the need to teach AI literacy in the education sector, so that everyone possesses at least a basic level of AI literacy.

To provide a better understanding of the current gap, the aim of this study was to investigate how to effectively integrate AI into teaching practice and what students' perspectives are about these technologies. This exploratory study seeks to uncover how students actually use AI for specific user experience (UX) tasks. This paper contributes to a broader body of knowledge on the importance of teaching students how to use AI and its integration into human-computer interaction (HCI) education (Goel et al. 2023; Stige et al. 2024; Tsao et al. 2025).

This paper examines how students utilize AI in the process of designing new IT services. As part of an Informatics Service Management course at a Croatian university, students investigated IT service requirements using various UX design methods. This research focuses on UX design methods typically used in the research phase of IT service design to identify user needs. In this regard, the following research questions were posed:

1. Which UX design methods did students primarily employ with the support of AI during the research phase of their project activities?
2. Which specific elements within the selected UX design methods involved the application of AI tools by students?
3. What are students' perceptions and suggestions regarding the integration of AI into teaching practice, based on their experience with these methods?

2. Theoretical background

User experience serves as an umbrella term that encompasses how various design and usability disciplines work together to create products, systems, and services (Cooper et al. 2014). As part of creating meaningful UX, it is important to follow a structured UX design process, which is often described alongside the design thinking process (Baxter et al. 2015). This paper focuses on four key UX methods used to define user requirements: persona, customer journey map (CJM), value proposition canvas (VPC), and user story map. These methods are central to the topic because they are applied at stages of user research and are often associated with creative stages and general descriptions – areas where AI has proven to be effective for providing inspiration and idea generation (Uusitalo et al. 2024). AI is often used to support demanding and time-consuming tasks, where it can significantly reduce the required time, effort, and costs (Abed et al. 2024; Oswal et al. 2024; Domínguez et al. 2024).

The research relies on the model of task-technology fit (TTF), which assumes that a technology will be more frequently used when its capabilities align with the demands of a specific task (Goodhue – Thompson 1995). Most studies in the educational context have found that task characteristics have a significant positive effect on task-technology fit, which consequently positively influences the intention to use AI tools (Al-Emran et al. 2025; Gokal – Baytar 2025). The correspondence between task characteristics and technology features determines the extent to which a technology can support an individual in performing tasks. Applying this concept in a UX design course provides a theoretical framework for explaining why students may use AI tools more frequently for certain tasks. To understand these relationships, the characteristics of each method/task are described to clarify their level of detail and the types of output. The limitations of AI tools will also be discussed to clarify which tasks this technology can support more effectively.

2.1. Characteristics of selected UX methods

A ‘persona’ is one of the methods commonly used to create a fictional profile that represents a specific customer or user group based on their shared interests (LeRouge et al. 2013). Personas are structured into a relatively standardized format including biography, goals, needs, motivations, frustrations, and technology usage (Curedale 2016; Stickdorn et al. 2018). Key characteristics of this method include generating a large amount of text, typically organized into sections that consist of generic descriptions. For this reason, it suits responses that an AI tool can produce directly with a few prompts.

To illustrate how customers or users interact with a product, service, or brand over time, a Customer Journey Map is used (Kalbach 2020; Stickdorn et al. 2018). A CJM consists of five main elements: time period, scenarios/activities, touch-points, channels, and thoughts/feelings (Stickdorn et al. 2018; Kalbach, 2020). This method requires critical thinking and a deeper understanding of the end user's steps to make the journey map comprehensive. It usually requires understanding the interconnections between user activities, channels, and emotions at each stage, which makes full standardization difficult.

The Value Proposition Canvas illustrates how value is created for customers by linking the functionalities of products and services with the customer profile (Pokorná et al. 2015). The left side presents the desired products and services, whereas the right side shows the customer profile structured into customer jobs, pains, and gains (Clark et al. 2012). While the format is clear, connecting product/service functionalities to the customer profile requires critical thinking.

User story maps are short, simple, and easily understood sentences in IT service design that answer the “who,” “what,” and “why” questions related to customer requirements (Wautelet et al. 2016). In general, they are divided into two main parts: constructing the hierarchy and writing individual user stories (Patton – Economy 2014). This method also requires reasoning and meaningfully linking user stories into a coherent whole, so it can only be partially standardized.

According to the TTF model, when tasks are better aligned with the technological capabilities provided by generative AI tools, students are more likely to use them (Al-Emran et al. 2025). Applying this to UX methods, it can be assumed that students find it easier to generate outputs for the persona method, which involves more standardized, essay-type responses. In contrast, for other tasks/methods that are less compatible with AI-generated responses, usage would likely be lower and limited to certain parts. This study is exploratory; its contribution lies in documenting how students use AI tools in relation to UX methods rather than testing theory. Therefore, the TTF model will serve only as a theoretical framework on the basis of which the results will be analyzed and conclusions drawn.

2.2. Limitations of AI tools

Research on the limitations of AI tools has primarily focused on their technical functioning and “black box” nature. A key criticism is the lack of transparency regarding the sources from which these tools obtain information (Uusitalo et al. 2024). This issue is particularly significant for AI adoption in industry, as organizational strategies for integrating AI into the workplace face many obsta-

cles, largely because employees fear losing control over these technologies (Hartyándi 2025). To mitigate these concerns, generative AI (GAI) tools are often restricted to generic tasks, such as persona generation, to avoid breaching company confidentiality when handling specific requirements (Uusitalo et al. 2024).

In terms of task suitability, AI tools perform better in divergent phases that involve exploring a wide range of solutions (Uusitalo et al. 2024). However, they are less effective in convergent phases that require a single, accurate solution. Additionally, when AI is provided with a large amount of text, such as software requirement documents, the narrowness and complexity of the content often lead to hallucinations or inaccurate outputs (Rahman et al. 2024). Other challenges also arise, including biases, inconsistencies, and prompting difficulties (Goel et al. 2023; Ozkaya 2023).

Research has shown that users generally prefer AI to play a supportive role rather than allowing it to make independent decisions (Virvou 2023; Uusitalo et al. 2024; Kim et al. 2025). For example, when AI directly converts text prompts into images, results show that extra effort is required to achieve a satisfactory user interface design (Liu – Huang 2024). This could suggest that students may approach AI with caution when undertaking creative tasks and may not always be fully satisfied with the generated outputs. As a result, students will prefer using AI in a supportive role rather than as the sole creator.

2.3. AI and UX design methods

While education emphasizes critical thinking, originality, and individual creative work, industries have already adopted a pragmatic approach in which AI tools are widely used primarily to increase efficiency (Tsao et al. 2025). Recent research shows that AI is increasingly integrated into various stages of the UX design process, from analyzing user needs to evaluating and automating development tasks (Stige et al. 2024). In particular, AI is used to enhance the quality of UX methods (Sharma et al. 2024), reduce human error (Oswal et al. 2024; Belzner et al. 2023; Domínguez et al. 2024), and better capture users' actual needs (Rahman et al. 2024). Industry professionals have even introduced tools that generate user stories directly from requirements documents using advanced prompts (Oswal et al. 2024; Rahman et al. 2024). Given this widespread adoption, it is important to teach students how to use AI and expose them to these tools early, helping them develop critical thinking that will better prepare them for the labor market (Tsao et al. 2025).

Students' opinions are divided on whether such technological changes will increase or decrease inequality (Köves et al. 2024). However, most students agree that the use of AI in teaching should be encouraged and view its adoption as

inevitable in the future (Ngo et al. 2024; Wang et al. 2024). Consequently, integrating AI tools into education could have implications similar to the introduction of online learning during the COVID-19 pandemic, which is now considered irreplaceable in modern education (Horváth et al. 2022).

HEIs should also incorporate education about AI literacy not only to equip students with the necessary skills and knowledge, but also to introduce them to the ethical framework of their profession (Kétyi et al. 2025). As AI tools are primarily content-providing tools, their effective use requires specific instructions, along with additional skills and competencies to implement them successfully (Kétyi et al. 2025). Clear guidelines are therefore needed to clarify AI capabilities and limitations for students, which will not only contribute to better use of these tools but can also support their further development (Ngo et al. 2024).

3. Research methodology

The study combined mixed-methods research, including qualitative and quantitative data collection and analysis. A questionnaire was used to gather both closed- and open-ended responses from students. Quantitative analysis was conducted on the closed-ended responses to obtain measurable insights into frequencies of AI usage across certain UX design methods, while qualitative content analysis was applied to the open-ended responses to identify underlying categories and themes. This approach allowed for a deeper understanding of students' practices and experiences with AI usage in teaching.

3.1. Data collection and sample

The survey was conducted among 220 undergraduate students enrolled in an Informatics Service Management course offered in the second year of the Information and Business Systems undergraduate study program at a university in Croatia. The course emphasizes project-based learning, where students work continuously on assigned project tasks throughout the semester (15 weeks). Students worked in teams of three and needed to collaborate to apply various UX design methods as they completed their project assignments. They received ongoing feedback from the teacher on the quality of their proposed solutions. Following the approach proposed by some authors (Divjak et al. 2025), the research combined optional and instructed AI use. In this context, students were permitted to use AI tools to complete their tasks without specific guidance. Only for tasks connected with wireframe development were students explicitly instructed to use AI. The research itself was carried out in May 2024 via an online

questionnaire and addressed activities for which students had already received credit to minimize potential response bias. Since the project tasks were team-based, each team completed the survey collectively (one result per team). The questionnaire was administered in Croatian and required ten minutes to complete. In total, 62 of the 69 enrolled teams participated in the survey, but only 54 teams reported using AI to complete their project tasks; data from these teams were further analyzed.

3.2. Instrument

The research instrument was a questionnaire consisting of 34 questions, divided into three sections. The first section focused on demographic information and a general overview of the use of AI tools. The second section explored students' attitudes toward the usability of AI tools in teaching, based on five categories from the BoT usability scale (Borsci et al. 2022), along with four additional categories tailored to the educational context. The third section focused on students' perceptions of using AI tools to solve project tasks and their suggestions for improvement. The present study specifically focused on the third section, based on which qualitative analysis was conducted. The qualitative data are compared with the second part of the quantitative data, which focuses on the assessed usability of AI tools. Demographic characteristics are not considered, as responses were collected at the team level.

4. Results

For the 54 teams analyzed, Figure 1 shows the results for the optional use of AI in UX methods. It can be observed that the highest number of teams used AI for the persona method (59.7%), followed by the customer journey map (33.9%), while the use of AI for the value proposition canvas (29%) and user story map (22.6%) was less frequent.

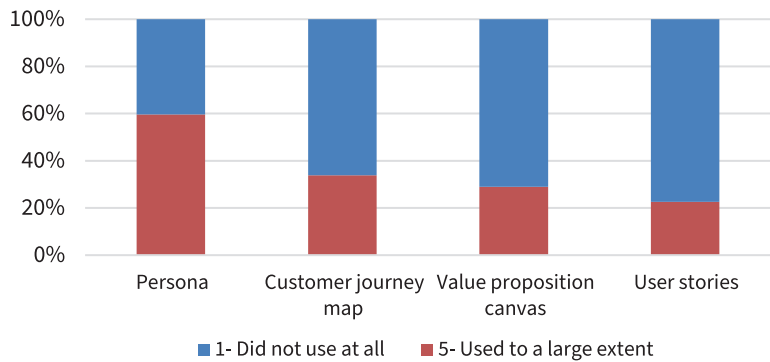


Figure 1. Percentage of teams that used AI in selected UX methods (N=54)

Source: authors.

4.1. Persona

As shown in Figure 2, students made considerable use of AI across all parts of the persona method. Most often, it was used to generate biographies of fictional characters (72.2%), with 25.9% of teams reporting that they used AI to a large extent. Furthermore, it was also used for defining ideal experience (42.6%), technology usage (40.7%), pain points (37.0%), and goals (31.5%).

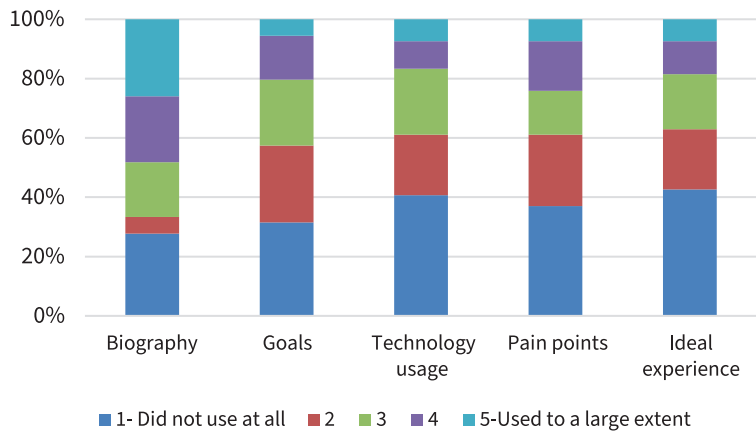


Figure 2. Percentage of teams that used AI for selected parts of the persona method (N=54)

Source: authors.

4.2. Customer Journey Map

As shown in Figure 3, teams used AI for particular and targeted elements of the customer journey map. It was most frequently utilized to define scenarios/activities (27.8%), touchpoints (25.9%), and thoughts and feelings (24.1%), suggesting that AI helped primarily with tasks requiring more detailed explanations. On the other hand, channels (22.2%) and timescale (14.8%) were the parts least supported by AI. Overall, a very small percentage (1.9% to 5.6%) of teams used AI to a large extent (rated 5 on the scale).

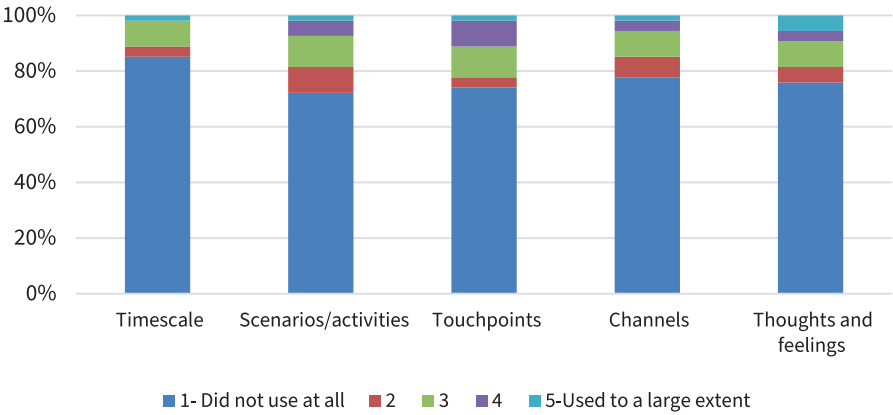


Figure 3. Percentage of teams that used AI for selected parts of the Customer Journey Map (N=54)

Source: authors.

4.3. Value Proposition Canvas

As Figure 4 illustrates, teams used AI more frequently for the Value Proposition Canvas method. Teams used AI almost equally across its main elements: customer jobs (38.7%), pains (41.9%), and gains (41.9%). Overall, a slightly higher percentage of teams (3.2%-6.5%) used AI to a large extent.

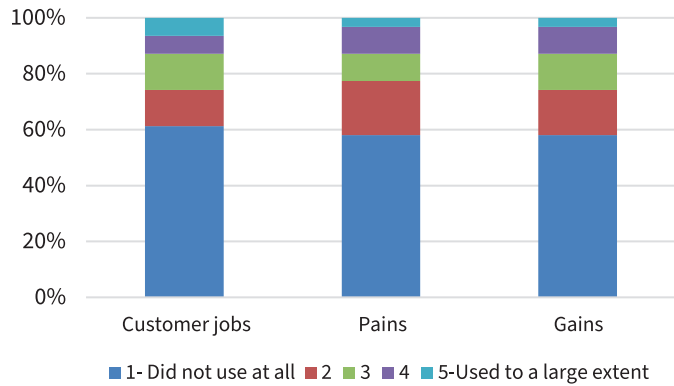


Figure 4. Percentage of teams that used AI for selected parts of the Value Proposition Canvas (N=54)

Source: authors.

4.4. User stories

For user stories, AI was not used to a large extent overall, with only 1.9% of teams reporting extensive use (Figure 5). However, teams employed AI more often for user story writing (38.9%) than for map hierarchy creation (24.1%). This suggests that AI was perceived as more useful for content creation than for structural planning regarding this method.

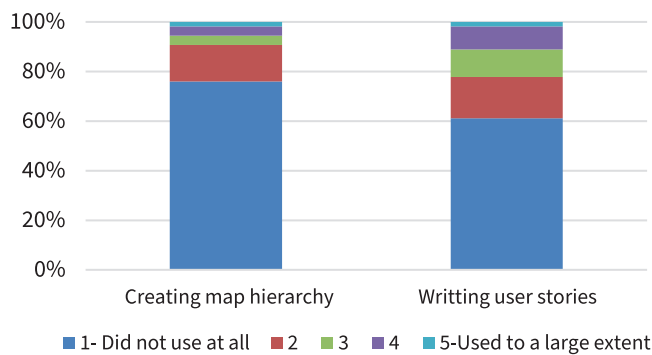


Figure 5. Percentage of teams that used AI for selected parts of User Story Map (N=54)

Source: authors.

4.5. Qualitative content analysis

This research also included a content analysis of students’ suggestions for improvement, based on responses from 31 teams. Qualitative content analysis combines inductive and deductive coding to identify meaning units, condense them, assign codes to text segments, group similar codes into categories, and interpret them to develop themes (Graneheim – Lundman 2004; Kuckartz – Rädiker 2023). Researchers often use this approach to complement findings from the literature or to gain a deeper understanding of the topic (Köves et al. 2024; Bogdanova – Parashkevova-Velikova 2025). The qualitative content analysis was carried out using QDA Miner Lite software. An inductive approach was employed to identify patterns, following the guidelines for category development proposed by Kuckartz and Rädiker (2023). Each team’s comments were first segmented into meaning units, then converted into a text document and imported into the QDA Miner Lite qualitative analysis tool. From these segments, condensed meaning units were extracted and assigned corresponding codes. Each code was then grouped under a broader category based on themes. These codes were not predefined; instead, they emerged inductively through a close reading of the content, allowing categories to develop naturally. Figure 6 illustrates the procedure used for conducting the content analysis.

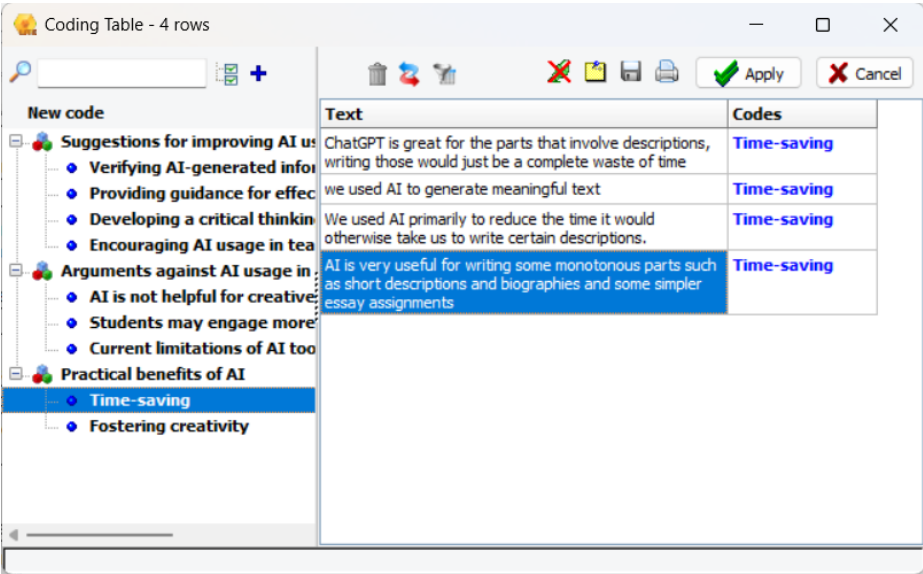


Figure 6. Example of qualitative content analysis in the QDA Miner Lite tool

Source: authors.

A total of 43 condensed meaning units were identified and organized into nine codes, which were further categorized into three border categories (Table 1). The most frequent category, “Suggestions for improving AI usage in education” (39.5%, $n = 17$), included four codes related to encouraging AI use, providing guidance, evaluating AI-generated content, and fostering critical thinking. An equally represented category, “Arguments against AI usage in education” (39.5%, $n = 17$), comprised three codes reflecting concerns about AI’s limitations for use in creative tasks, technical constraints, and its potential to hinder student engagement. The final category, “Practical benefits of AI” (20.9%, $n = 9$), included two codes emphasizing AI’s role in boosting creativity and time efficiency.

Table 1. Qualitative content analysis of students’ comments

Category	Code	Count	Percentage of codes
Suggestions for improving AI usage in education	Encouraging AI usage in teaching practices	6	14.00%
	Providing guidance for effective AI usage	4	9.30%
	Verifying AI-generated information	4	9.30%
	Developing critical thinking about AI responses	3	7.00%
Arguments against AI usage in education	AI is not helpful for creative tasks	8	18.60%
	Current limitations of AI tools	5	11.60%
	Students may engage more deeply when not relying on AI	4	9.30%
Practical benefits of AI	Fostering creativity	5	11.60%
	Time-saving	4	9.30%
Total		43	100.00%

Source: authors.

The first category, “Arguments against AI usage in education” (39.5%), highlighted the disadvantages of AI usage in education. Students noted that AI is not helpful for creative tasks ($n=8$, 18.6%). Others pointed to current technical limitations of AI ($n=5$, 11.6%) and believed that avoiding AI may encourage deeper student engagement ($n=4$, 9.3%). The second category, “Suggestions for improving AI usage in education” (39.5%), included student recommendations for better AI integration into teaching. Students supported the idea of encouraging AI use in teaching practices ($n=6$, 14.0%) and emphasized the need for instructional support from teachers, such as providing guidance on effective AI use ($n=4$, 9.3%). They also highlighted the importance of verifying AI-gen-

erated content (n=4, 9.3%) and developing critical thinking about AI responses (n=3, 7.0%). The third category, “Practical benefits of AI” (20.9%), reflected students’ recognition of AI’s value in fostering creativity (n=5, 11.6%) and saving time (n=4, 9.3%) by speeding up certain tasks.

The extent to which the technology provided appropriate responses to the assigned tasks can be assessed through a qualitative analysis of student feedback. The following student comments support the claim that the AI tool provided the most effective output for mostly descriptive parts, where it could save time:

- “ChatGPT is great for the description parts because it’s just a waste of time [creating these manually]...”
- “We used AI primarily to reduce the time it would otherwise take to write individual descriptions...”
- “AI is very useful when writing some monotonous parts such as short descriptions and biographies and some simpler essay assignments, while it is more difficult to do something creative...”
-

Students’ suggestions for improving AI usage in education can be illustrated through the following:

- “We believe that AI is inevitable in the future of using software tools. Therefore, we believe that AI should be a part of teaching...”
- “It is necessary to explain to students in more detail how to [create] quality prompts for AI.”
- “All its suggestions need to be refined to create quality information for the project.”
- “If we use it without understanding the subject, we will not do well...”

The results of the qualitative analysis are further compared with quantitative data regarding the assessed usability of AI tools (N=54). A comparison shows that the lowest mean scores were obtained for Perceived Conversational Credibility (M = 2.82, SD = 1.07) and Creativity, Innovation, and Teamwork (M = 2.96, SD = 1.09). Additionally, the highest mean scores were observed for Usage Patterns (M = 3.75, SD = 1.14) and Flexibility and Communication Effort (M = 3.46, SD = 1.12), suggesting that students often need to rephrase prompts and invest additional effort when interacting with an AI tool to obtain useful responses.

5. Discussion

As AI use in professional service delivery continues to grow, this underscores the importance of preparing students with the knowledge and skills needed to meet future job demands. This study builds on prior research that emphasizes

the importance of higher education institutions recognizing the growing role of AI in industry and integrating it effectively into education (Ngo et al. 2024; Kétyi et al. 2025).

This exploratory study aimed to investigate how students use AI when applying UX design methods. The results showed that the majority of students (87%; 54 out of 62 teams) used AI to assist them in solving project tasks. Across all UX design methods, a clear pattern emerged: use of AI increased with the amount of text students were required to generate. AI was most frequently applied in the persona method, which involved generating the largest amount of text and more standardized answers. It was also used in the customer journey map to generate a detailed scenarios of activity descriptions, and more evenly in the value proposition canvas method. These findings align with the TTF model, as AI was used more frequently for UX tasks best suited to its capabilities, such as generating more general descriptions and essay-type responses.

Students themselves also observed that the use of AI tools depended on how suitable they were for completing the tasks. For example, they identified that AI tools were suitable for the more descriptive parts of UX methods (e.g., writing biographies), but they needed to invest a lot of effort to manage the creative parts. Based on students' comments, AI is effective for generating initial ideas and inspiration, but it may be limited for more creative tasks, such as creating application wireframes. Overall, when connecting with other quantitative parts of the data, students did not feel that AI significantly enhanced their creativity, as the lowest mean values in team responses were obtained for the items Creativity, Innovation, and Teamwork.

Instead of using AI for creative support, students primarily used it with the intention of completing tasks more quickly. However, they needed to invest considerable effort to obtain useful outputs. Overall, AI tools were not perceived as useful for most UX tasks, primarily because students did not know how to use them effectively in practice. A similar issue has been observed in industry, where organizations face challenges due to the uneven adoption of AI, stemming from differences in individual levels of knowledge and expertise (Hartvándi 2025). This research also showed that students were aware of their insufficient knowledge regarding the use of AI tools, which is why they expressed a desire for instructors to provide guidance and recommendations on how to use these tools effectively. To enhance its use in practice, the focus should be on developing AI literacy across all aspects, from creating prompts to understanding the ethical implications of using AI tools. Previous literature shows that industry professionals are cautious about using AI due to confidentiality concerns, which suggests that students should also be taught how to use AI responsibly to practice their jobs ethically (Kétyi et al. 2025; Uusitalo et al. 2024). This

includes practical recommendations, such as avoiding the input of personal or sensitive data into AI tools and cross-checking the information provided by AI.

Recommendations for students on using AI in UX methods should draw on industry examples where refined approaches have been developed to maximize the value of creative UX methods through AI tools. Such best practices should be systematically analyzed and incorporated into education as illustrative examples of how AI can be used to enhance UX methods. For example, industry practice has shown that AI can be particularly useful for storytelling, as it can introduce students to the application domain in which they will be designing, where domain expertise is often required. As students struggle to obtain satisfactory answers, they should be taught how to formulate high-quality prompts tailored to the selected UX method. By integrating AI into HCI education, the gap between academia and industry may shrink, preparing students to work more efficiently in the workplace.

6. Conclusions

The emergence of AI has led to significant changes, including in education. Students are increasingly using AI as a tool to help them complete course tasks and obligations. However, they are not sufficiently skilled to use AI efficiently. This study aimed to explore how students currently utilize AI in a service development course to solve creative tasks, while also examining their suggestions for improving the integration of AI into teaching practices.

The results show that students are using AI for educational purposes, but to a limited extent. With creative UX tasks that require multiple prompts to generate usable responses, students tended to use AI less frequently. Most commonly, AI was used for generating more extensive descriptions or completing tasks that would otherwise require a significant amount of manual work. This suggests, just as the students themselves pointed out, that more attention needs to be given to supporting AI usage in education. These findings emphasize the teacher's role in developing instructional materials and guidelines that will equip future generations of students with AI skills, such as formulating quality prompts, using AI ethically, and developing critical thinking about AI-generated responses.

However, the study has several limitations. It did not investigate precisely how students used AI, such as the prompts they entered or the challenges they faced while using AI tools. Additionally, the results are based on team responses, making it difficult to compare students' individual characteristics. Moreover, research is limited to selected UX methods that are applied in a specific learning context, which may limit the generalization of the findings. It primarily relies on qualitative analysis, with quantitative data used only to support the findings

through basic descriptive statistics. This methodological choice was intentional and aligned with the research's exploratory design, which aimed to understand how students use AI to develop creative UX methods. The practical implications of this research suggest that teachers have the potential to integrate AI into teaching practice. Since students are motivated to use AI in their learning, the more structured use of AI could equip them with skills that will be important for their future career development.

References

- Abed, O., Nebe, K., & Abdellatif, A.B. (2024). AI-generated user stories supporting human-centred development: An investigation on quality. In: Stephanidis, C., Antona, M., Ntoa, S., Salvendy, G. (eds) HCI International 2024 Posters. HCII 2024. *Communications in Computer and Information Science*, vol 2120. Springer, Cham. https://doi.org/10.1007/978-3-031-62110-9_1.
- Al-Emran, M., Al-Sharafi, M. A., Foroughi, B., Al-Qaysi, N., Mansoor, D., Beheshti, A., & Ali, N. A. (2025). Evaluating the influence of generative AI on students' academic performance through the lenses of TPB and TTF using a hybrid SEM-ANN approach. *Education and Information Technologies*, 30(12), 17557-17587. <https://doi.org/10.1007/s10639-025-13485-w>.
- Baxter, K., Courage, C., & Caine, K. (2015). *Understanding your users: a practical guide to user research methods*. Morgan Kaufmann.
- Belzner, L., Gabor, T., & Wirsing, M. (2023). Large language model assisted software engineering: prospects, challenges, and a case study. In *International Conference on Bridging the Gap between AI and Reality*, pages 355–374, Cham. Springer Nature Switzerland. https://doi.org/10.1007/978-3-031-46002-9_23.
- Bogdanova, M., & Parashkevova-Velikova, E. (2025). Embracing a network approach in digital transformation: Is it possible to change the strategic paradigm in Bulgaria? *Society and Economy*, 47(2), 215-234. <https://doi.org/10.1556/204.2024.00020>.
- Borsci, S., Malizia, A., Schmettow, M., Van Der Velde, F., Tariverdiyeva, G., Balaji, D., & Chamberlain, A. (2022). The chatbot usability scale: the design and pilot of a usability scale for interaction with AI-based conversational agents. *Personal and Ubiquitous Computing*, 26, 95-119. <https://doi.org/10.1007/s00779-021-01582-9>.
- Clark, T., Osterwalder, A., & Pigneur, Y. (2012). *Business Model You: A One-Page Method for Reinventing Your Career*. John Wiley & Sons.
- Cooper, A., Reimann, R., Cronin, D., & Noessel, C. (2014). *About Face: The Essentials of Interaction Design*. John Wiley & Sons.
- Curedale, R. (2016). *Service Design: Process & Methods: 2nd Edition*. Design Community College.

- Divjak, B., Svetec, B., & Pažur Aničić, K. (2025). PBL meets AI: Innovating assessment in higher education. In *CSEDU 2025 17th International Conference on Computer Supported Education Proceedings (Volume 2)* (pp. 120- 130). <https://doi.org/10.5220/0013331700003932>.
- Domínguez, F. A. M., Quintana, M. A., Cinco, R. R. P., Borrego, G., & González-López, S. (2024). User story automation in software engineering: insights from the literature. In *2024 12th International Conference in Software Engineering Research and Innovation (CONISOFT)* (pp. 279-286). IEEE. <https://doi.org/10.1109/CONISOFT63288.2024.00044>.
- Goel, T., Shaer, O., Delcourt, C., Gu, Q., & Cooper, A. (2023, June). Preparing future designers for human-ai collaboration in persona creation. In *Proceedings of the 2nd Annual Meeting of the Symposium on Human-Computer Interaction for Work* (pp. 1-14). <https://doi.org/10.1145/3596671.3598574>.
- Gokal, H., & Baytar, C. U. (2025). The impact of task-technology fit on the intention to use artificial intelligence in the education of information technology students in universities: The role of self-efficacy. *Turkish Online Journal of Educational Technology-TOJET*, 24(4), 149-159.
- Goodhue, D. L., & Thompson, R. L. (1995). Task-technology fit and individual performance. *MIS Quarterly*, 19(2), 213-236. <http://dx.doi.org/10.2307/249689>.
- Graneheim, U. H., & Lundman, B. (2004). Qualitative content analysis in nursing research: concepts, procedures and measures to achieve trustworthiness. *Nurse Education Today*, 24(2), 105-112. <https://doi.org/10.1016/j.nedt.2003.10.001>.
- Hartyándi, M. J. (2025). Distrust and disillusionment toward generative artificial intelligence: Psychodramatic exploration of employee trust in organizational technology acceptance. *Society and Economy*, 47(2), 235-255. <https://doi.org/10.1556/204.2025.00002>.
- Horváth, D., Ásványi, K., Cosovan, A., Csordás, T., Faludi, J., Galla, D., Komár, Z., Markos-Kujbu, E., & Simay, A. E. (2022). Online only: Future outlooks of post-pandemic education based on student experiences of the virtual university. *Society and Economy*, 44(1), 2-21. <https://doi.org/10.1556/204.2021.00026>.
- Kalbach, J. (2020). *Mapping Experiences: A Complete Guide to Customer Alignment Through Journeys, Blueprints, and Diagrams (2nd ed.)*. O'Reilly Media.
- Kétyi, A., Géring, Z., Dén-Nagy, I. (2025). ChatGPT from the students' point of view. Lessons from a pilot study using ChatGPT in business higher education. *Society and Economy*, 47(1), 1-21. <https://doi.org/10.1556/204.2024.00007>.
- Kim, J. S., Kim, M., & Baek, T. H. (2025). Enhancing user experience with a generative AI chatbot. *International Journal of Human-Computer Interaction*, 41(1), 651- 663. <https://doi.org/10.1080/10447318.2024.2311971>.

- Köves, A., Tóth, T., & Vicsek, L. (2024). A torn generation: Dichotomies and dissonances on sustainability and technological change in in-depth interviews with university students. *Society and Economy*, 46(1), 61-78.
<https://doi.org/10.1556/204.2023.00014>.
- Kuckartz, U., & Radiker, S. (2023). *Qualitative Content Analysis: Methods, Practice and Software*. SAGE Publications Ltd.
- LeRouge, C., Ma, J., Sneha, S., & Tolle, K. (2013). User profiles and personas in the design and development of consumer health technologies. *International Journal of Medical Informatics*, 82(11), e251-e268.
<https://doi.org/10.1016/j.ijmedinf.2011.03.006>.
- Liu, Y. L. E., & Huang, Y. M. (2024). Exploring the Perceptions and Continuance Intention of AI-Based Text-to-Image Technology in Supporting Design Ideation. *International Journal of Human-Computer Interaction*, 41(1), 694-706.
<https://doi.org/10.1080/10447318.2024.2311975>.
- Ngo, T. T. A., Tran, T. T., An, G. K., & Nguyen, P. T. (2024). ChatGPT for educational purposes: Investigating the impact of knowledge management factors on student satisfaction and continuous usage. *IEEE Transactions on Learning Technologies*, 17. 1341- 1352. <https://doi.org/10.1109/TLT.2024.3383773>.
- Oswal, J. U., Kanakia, H. T., & Suktel, D. (2024). Transforming software requirements into user stories with GPT-3.5: an AI-powered approach. In *2024 2nd International Conference on Intelligent Data Communication Technologies and Internet of Things (IDCIoT)* (pp. 913- 920). IEEE.
<https://doi.org/10.1109/IDCIoT59759.2024.10467750>.
- Ozkaya, I. (2023). Application of large language models to software engineering tasks: Opportunities, risks, and implications. *IEEE Software*, 40(3), 4-8.
<https://doi.org/10.1109/MS.2023.3248401>.
- Patton, J., & Economy, P. (2014). *User Story Mapping: Discover the Whole Story, Build the Right Product*. O'Reilly Media, Inc.
- Pokorná, J., Pilař, L., Balcarová, T., & Sergeeva, I. (2015). Value proposition canvas: identification of pains, gains and customer jobs at farmers' markets. *AGRIS On-line Papers in Economics and Informatics*, 7(4), 123-130.
<https://doi.org/10.7160/aol.2015.070412>.
- Rahman, T., Zhu, Y., Maha, L., Roy, C., Roy, B., & Schneider, K. (2024). Take loads off your developers: Automated user story generation using large language model. In *2024 IEEE International Conference on Software Maintenance and Evolution (ICSME)* (pp 791–801). <https://doi.org/10.1109/ICSME58944.2024.00082>.
- Sharma, A., Chaturvedi, A., & Tripathi, A. K. (2024). From problem descriptions to user stories: utilizing large language models through prompt chaining. In *2024 15th International Conference on Computing Communication and Networking Technologies (ICCCNT)* (pp. 1- 6). IEEE.
<https://doi.org/10.1109/ICCCNT61001.2024.10724709>.

- Stickdorn, M., Hormess, M. E., Lawrence, A., & Schneider, J. (2018). *This is Service Design Doing*. O'Reilly Media, Inc.
- Stige, Å., Zamani, E. D., Mikalef, P., & Zhu, Y. (2024). Artificial intelligence (AI) for user experience (UX) design: a systematic literature review and future research agenda. *Information Technology & People*, 37(6), 2324-2352. <https://doi.org/10.1108/ITP-07-2022-0519>.
- Tsao, J., Liang, C. X., Nogues, C., & Wong, A. (2025). Perceptions and integration of generative artificial intelligence in creative practices and industries: A scoping review and conceptual model. *AI & SOCIETY*, 1- 20. <https://doi.org/10.1007/s00146-025-02667-2>.
- Uusitalo, S., Salovaara, A., Jokela, T., & Salmimaa, M. (2024, July). "Clay to play with": Generative ai tools in ux and industrial design practice. In *Proceedings of the 2024 ACM Designing Interactive Systems Conference* (pp. 1566-1578). <https://doi.org/10.1145/3643834.3661624>.
- Virvou, M. (2023). Artificial Intelligence and User Experience in reciprocity: Contributions and state of the art. *Intelligent Decision Technologies*, 17(1), 73-125. <https://doi.org/10.3233/IDT-230092>.
- Wang, C., Wang, H., Li, Y., Dai, J., Gu, X., & Yu, T. (2024). Factors influencing university students' behavioral intention to use generative artificial intelligence: Integrating the theory of planned behavior and AI Literacy. *International Journal of Human-Computer Interaction*, 1- 23. <https://doi.org/10.1080/10447318.2024.2383033>.
- Wautelet, Y., Heng, S., Kolp, M., Mirbel, I., & Poelmans, S. (2016). Building a rationale diagram for evaluating user story sets. In *2016 IEEE Tenth International Conference on Research Challenges in Information Science (RCIS)* (pp. 1- 12). IEEE. <https://doi.org/10.1109/RCIS.2016.7549299>.