

Learning Agile with Generative AI: Student Experiences in a Project-Based Course

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Abstract. This exploratory study investigates how students experience the use of Generative AI (GenAI) in a project-based Agile course within higher education. Through a combination of interviews and survey, we examine how GenAI tools support learning, decision-making, and team dynamics. Our findings point out that students used GenAI primarily for understanding and applying Agile practices, validating decisions, and fostering teamwork. For some students, GenAI served as a scaffold for applying theory to practice, and boosted their confidence. We conclude that GenAI can be effectively integrated into project-based learning, provided that students receive guidance on responsible use and evaluation. We offer implications for teaching strategies and contribute to emerging discussions on GenAI in high education.

Keywords: AI in education · Large Language Models · Generative AI · Computer science education · Project-based learning · Agile · Scrum Master

1 Introduction

The integration of Generative AI (GenAI) tools into educational environments has sparked significant interest in their potential to enhance student learning, especially in fields like Computer Science (CS) and Software Engineering (SE). Recent studies reveal that GenAI tools can assist students in project tasks, thereby filling knowledge gaps, improving productivity, and fostering collaboration [17, 18]. In project-based courses, where practical skills and iterative learning are vital components, students learn primarily through enacting specific team roles. GenAI could play a constructive role in supporting students' learning and understanding [7].

In our Agile project course, students learn through taking on specific team roles, such as the Scrum Master (SM). Learning occurs through participation, collaboration and iterative feedback. In this study, we aim to understand how GenAI supports this learning process, particularly focusing on students' perceptions. We explore how they report using these tools, how GenAI influences their engagement, decision-making, and progress throughout the project. Consequently, the following research question is investigated:

How do students in higher education experience generative AI tools to support their learning and project handling in an Agile course?

In order to provide answers, we conducted a case study within a bachelor-level university course on Agile software development. We draw on two complementary data sources as empirical components - survey and interviews. By examining students' self-reported experiences, our research offers insights into how GenAI may support or hinder learning processes in higher education, informing the design of future curricula and pedagogical strategies.

2 Relevant Work

Large Language Models (LLMs), popularized by Generative AI tools such as ChatGPT and GitHub Copilot, are increasingly utilized in educational contexts, demonstrating value in closing skill gaps, accelerating learning, and personalizing educational experiences [18]. Studies show that CS/SE students across all levels use these tools for diverse tasks, with advanced students integrating them more extensively for complex applications [17].

GenAI holds significant promise for enhancing project settings, which rely on iterative development, rapid feedback, and collaborative learning [2]. Daun and Brings [6] emphasize GenAI's potential for providing personalized feedback, creating tailored educational pathways that adapt to individual learning needs. In Agile education, these tools may reduce cognitive load and streamline workflows, enabling students to focus on higher-order decision-making. However, structured curricula, ethical guidelines, and ongoing support are essential for navigating challenges around accuracy, privacy, and ethical use [5, 8].

Bera et al. [2] and Petrovska et al. [13] highlight GenAI tools' potential to support Agile software development, with specific benefits noted in assisting with programming tasks, offering virtual team member capabilities, and enhancing software development education. GenAI could be especially valuable for Scrum Masters by supporting project management tasks and decision-making.

Despite these advantages, challenges persist in educational use. Concerns around academic integrity, overreliance, and limited contextual understanding of GenAI tools pose risks [11, 16]. Educators face the challenges of fostering responsible use while maintaining students' critical thinking skills. Additionally, GenAI should be properly validated and integrated with traditional educational methods to ensure learning outcomes that extend beyond mere productivity gains [10].

3 Methodology

3.1 Study Context

This investigation was conducted within PRO202 – Agile Project¹, a second-year bachelor-level course at Kristiania University of Applied Sciences in Nor-

¹ More details at <https://www.kristiania.no/studieportal/?phrase=pro202>

way. The course provide students with practical experience in Agile methods, mainly Scrum. The learning outcomes are summarized as follows: (1) understanding Agile methodology; (2) planning, executing, and reflecting on a Scrum-based project; and (3) team communication, self-organization, and continuous improvement.

The course begins with four weeks of lectures and workshops on Agile theory, followed by four weeks of iterative project work. Students are grouped into multidisciplinary teams of 6–8 members, working a case provided by an external company with support from instructors and company representatives. The final deliverables include a project portfolio, process documentation, and a video demonstration.

This was the first iteration of the course since Kristiania’s institutional agreement with Microsoft Copilot (Nov/2023) allowing GDPR-compliant use of GenAI tools for education. GenAI was introduced in this course to scaffold experiential learning and promote reflection and autonomous problem-solving. To support responsible use, students received a tutorial on how GenAI could support both technical and organizational aspects of Agile [12].

3.2 Data Collection

Our approach comprises two complementary data sources:

Firstly, an **online survey** was conducted to investigate students’ (n=33) use of GenAI tools, the nature of tasks supported, and their perceived impact on learning and project contributions. The questions were inspired by AI-related questions in the Studiebarometeret ² and are available in a public repository [12]. Before launching the survey, the research team refined the questions to ensure quality and alignment with the research objectives. We used Nettskjema ³ to design the survey and collect data. The link was distributed via our Learning Management System (LMS) during the final course week, with reminders sent 4 and 10 days later. Participation was anonymous and voluntary.

Secondly, **semi-structured interviews** to explore the Scrum Masters’ (n=5) experiences of using GenAI in their roles during the project, with focus on task execution, decision-making, and encountered challenges. According to [15] a Scrum Master acts as a coach for the development team, guiding them into the Scrum process. The questions asked are grounded in discussions within the research team. Recruitment was done through the LMS. The interviews lasted 30-40 minutes each and were conducted on Zoom, with two researchers present, one asking the questions and the other noting and asking follow-up questions. Consent and data handling followed Norwegian Agency for Shared Services in Education and Research (SIKT) guidelines for research ethics and privacy.

The five interviewed SMs came from diverse programs, including e-business, cybersecurity, and programming. Only one had professional frontend development experience, while the other four had only completed the first-year programming courses. Their familiarity with GenAI tools varied: some had used

² <http://www.studiebarometeret.no/en>

³ <http://www.nettskjema.no>

tools like ChatGPT and GitHub Copilot regularly for writing and coding; one interviewee had no experience prior to the course; and another expressed hesitancy in using GenAI, preferring traditional search methods.

3.3 Data Analysis

Thematic analysis, as prescribed by [3], was used to identify common themes and insights from interviews and open-ended survey responses. Two researchers (RG and BM) conducted the initial coding and theme development. These findings were then discussed with the full research team to ensure a shared understanding of the data and to validate the structure of the thematic analysis.

In addition to that, descriptive statistical analysis on survey responses explored trends in students' use of GenAI and its perceived impact on project outcomes and individual performance. No sophisticated analysis have been performed, due to the limited number of respondents.

3.4 Threats to Validity

Construct validity. Our data collection relies on students' self-reported perceptions, which are subject to interpretation differences. We attempt reducing this bias by using clear and understandable questions.

Internal validity. Student participation during the course was generally high, however voluntary participation in our study was limited. We assume this was mainly to the timing of the data collection, that conflict with intensive project deliveries and other end-of-semester commitments. In addition to that, differences in knowledge and experience, and varied levels of participation in the course could have influenced participants' responses.

External validity. Our investigation is limited to a single course, institution, and cohort. The low participation increase the risk that our results are not representative of the broader student population. Also, the novelty of GenAI and the explicit encouragement for its use under institutional policy are context particularities of our study. These factors limit the extent to which our results can be transferred to other educational contexts.

Reliability To maintain objectivity, course instructor (JSM) did not participated in data collection and was only consulted in the data analysis. To minimize biases on interpretation, the data collectors and analysts (RG, PL, BM and HS) were not directly involved in the course. The survey and interviews were conducted in English, as the course instruction, materials, and project documentation were all in English. During interviews, students were free to switch to Norwegian, their native language, if they preferred.

4 Findings

4.1 Learning and applying Agile practices

Students reported that GenAI tools helped both the Scrum Master (SM) and the team learn and apply Agile methodologies. According to some respondents,

they learned it faster and better than if they had not used GenAI. With it, they learned the theory, understood the main steps of the process, and could ask specific questions on how to do things – applying the theory into practice. A respondent (R5) speaking about their learning stated that *“I wouldn’t say it is just because of AI, but the theory I got to understand better through AI.”*

In addition to learn the principles of Agile, it became a reminder to follow the Scrum framework properly. Respondent R4 said that *“During development, it can be difficult to remember doing the Agile principles.”* GenAI clarified Agile, introduce new concepts within the topic, and even encourage the teams to explore and try new practices in their projects.

Getting started with the Agile project. Four of the five SMs told us how they used GenAI tools to get started with the process and continued using it as a sparring partner underway. The fifth SM noted that they didn’t use GenAI much before the second sprint, mainly relying on course material in the first sprint. Those who used GenAI from the beginning found it helpful to understand the steps of the Agile framework and planning sprints. This was important for the respondents as they experienced uncertainty in how to initiate the process.

Sprint planning and effort estimation. During the planning phase, students would prompt the GenAI on topics such as how to set up a product backlog, perform a one-week sprint, divide tasks, and conduct planning poker. Some students used GenAI tools to get feedback on their plans, checking if they had forgotten something or potential adjustments. One SM found the GenAI not able to provide clear help on sprint organization.

Planning poker was difficult to grasp in practice; SMs sought GenAI support to conduct and estimate story points. One SM mentioned that GenAI provided alternative ways of conducting planning poker with pros and cons, though estimating velocity was still challenging due to differences in individual performance.

Agile Team Meetings. The SMs used GenAI as a sparring partner to understand, perform, write agendas, and ensure nothing was omitted in key Agile meetings, such as Daily Scrum and Sprint Retrospective from the Scrum framework. One respondent (R4) said: *“I sometimes asked open questions about things I didn’t know about. But sometimes it was more about clarification and validation that I am on the right track.”*

4.2 Supporting team collaboration

Handling team issues. SMs used GenAI reactively and proactively to learn how to handle issues arising in the team. The SM would prompt the tool with issues to get alternative manners handling them. Examples of issues were being tired and overworked, team members not attending, and disagreements. An example of proactive intervention was assessing the team satisfaction with a questionnaire. Some of our respondents noted that the GenAI couldn’t give good enough advice on how to handle the issue of people not attending, however, found solutions to the issue of people being overworked.

Encouraging and motivating the team. Our respondents used GenAI to find ways to both assess and create engagement. The SM would for example

learn that discussion and decision making would be important for the morale and team environment. GenAI even advised our respondents on how to make meetings, such as a sprint retrospective, more fun.

Developing the team’s interpersonal skills. GenAI made the teams more aware of the importance of investing enough time, and focus on developing different skills, such as communication skills. The SM also became aware of that different team members may communicate, and need to communicate in different manners, tailoring both expectations and communication to the individuals.

Feedback and validation on managing the team. Both the SM and the team members used GenAI to validate project choices - ranging from how meetings were conducted and can be improved, to levels of management (micro vs. macro management) and specific Agile practices like sprint planning. SMs also reported that GenAI helped them to obtain a broader perspective, as stated by R2: *“Also with AI one gets a wider view on how to do things, and also it makes the other team members more engaged.”* GenAI suggestions were typically discussed in the team before being applied. SMs reported that teams proceed more confidently and need less support after getting validation from the GenAI tool. Not all GenAI recommendations on the Agile processes (for example for estimation, velocity, backlog, performing Daily Scrum, etc.) worked well in the beginning, still they could be adopted with some adaptation.

The role of the Scrum Master. The SMs varied in both experience with Agile and familiarity with GenAI - some were new to both, while others had used GenAI for a year, though in different ways. SMs used GenAI to clarify their role and become better leaders, but for some this is some more like a facilitator role. Respondents expressed insecurity of performing well in their role, and GenAI played an important part to get reassurance. A respondent (R1) expressed that *“AI has helped me to get confidence in the things that I am doing. I don’t think I am right in everything. But I am more sure of the processes that I do.”* However, R1 also mentioned that the rest of the team didn’t accept all suggestions, even though they made sense, and would want to not be so lenient in the future.

One respondent (R1) felt responsible helping the team learn Agile and shared what they had learned from the GenAI to the team. They mentioned to not let learning be reduced by letting GenAI do things for you. Another respondent (R3) explained that if they had to make decisions alone, using GenAI as sparring partner, they would at least present the decision to the team. Two of the respondents reflected that GenAI sometimes changed their minds on processes or decisions. One of them (R1) further state: *“There’s a blurry line if AI makes you do something or if it is the process for example when rewriting things.”*

4.3 Practical tasks

Getting better at writing. SMs reported using GenAI tools for creating and validating document structures, and confirm the grammar and writing choices. This helped them improve their writing skills and become more confident. However, they had to instruct the GenAI to only correct grammar, as it otherwise change the content. One SM also coached their team on using GenAI for writing.

In some cases, GenAI even suggested to make the documentation more reflective than the teacher had asked for - a suggestion they followed. R1 made an interesting remark on the impact of GenAI on their writing skills: *“I don’t know if it is because of AI or if it is just having to rewrite things – the process in itself.”*

Responses from both the survey and the interviews show participants used GenAI to support text writing. However, SMs expressed frustration at the tendency of GenAI to alter the semantics of their text, rather than focusing only on grammar or other minor corrections. While it is difficult to ascertain with certainty the degree to which participants submitted generated text, the data indicates that students maintained ownership and responsibility for writing and quality assuring their work.

Coding support. SMs mentioned how the coders in the team used ChatGPT and Copilot and compared them. They found ChatGPT to be better for code generation, while Copilot was best for debugging. Two main reasons for GenAI being valuable for coding was that it provided a good starting-point for the code, and reminded them of techniques to use. The only issues mentioned was that they sometimes needed to reformulate the prompts and give enough context to get the code they needed. In addition, one of the respondents (R1) noted that GenAI once became unavailable making it apparent how dependent one of the coders was on it.

Other uses of GenAI. Our survey respondents also mentioned how the team would use GenAI for things such as learning to use new software, creating alternative designs, and supporting brainstorming sessions. One of the SMs mentioned that, when it came to color schemes and image generation, the tool often produced unsatisfactory and even comical results. Table 1 summarizes the survey responses about the tasks students used GenAI for.

Alternative	Answers
Generate/write text	4 (14%)
Quality assurance/editing own text (spell check, reformulation, etc.)	16 (55%)
Summarize existing text (articles, syllabus, own assignments, etc.)	10 (35%)
Explain theme, syllabus, concepts, terminology, etc.	13 (45%)
As a “discussion partner”, inspiration for tasks, brainstorming, etc.	22 (76%)
Generating/writing code	11 (38%)
Generate sound, image, or video	5 (17%)

Table 1: Response to the survey question: What type of tasks do you personally use AI for in Agile project?

In addition to choosing the alternatives in Table 1, respondents could write free text answers. The responses included repetition and quality assurance of agile concepts, design tasks in Figma, and generating project-specific text. For development they used GenAI to generate dummy text or code blocks, also for debugging and troubleshooting. GenAI tools saved the students time on tedious tasks, and was a faster alternative than web-search for quick answers.

4.4 Making use of the GenAI answers

Adapting GenAI suggestions to the context. SMs often needed to adapt the GenAI answers to fit their own context. The suggestions became a starting point for discussions and decision-making, with students taking with them the essence of the answers rather than applying them directly. Decision making became an iterative process, where teams explored alternatives with the GenAI, made decisions based on the best fit, and returned to the tool for validation.

Why use GenAI to learn Agile? The SMs found GenAI especially useful in situations where they needed details and in-depth explanation. In cases where the teacher did not provide sufficiently detailed enough information to act upon, the GenAI could provide concrete guidelines for implementing Agile practices. Respondents mentioned that this approach work well for some practices (planning poker) but did not work as well for others (backlog). In addition, it wasn't always easy getting help from the teacher or student assistants in the beginning of the process. GenAI helped teams not get stuck and be able to move on faster instead of arguing over things.

GenAI vs other information sources. GenAI has impacted how students approach sources on Agile practice. Participants reported relying mostly on course material and literature and using GenAI to cross-reference them. SMs reported the GenAI answers to be mostly consistent with the course material, however occasionally not fully matching the referenced sources. This caused concern and some chose following the course material and guidance from the the teacher rather than the GenAI's suggestion.

Criteria for evaluation. Participants linked trust in GenAI tools directly to the use of real references and high-quality sources, and linking claims directly to sources. Some even went as far as to say that a well-formulated prompt will provide answers that can fully replace traditional literature. Participants also felt that it was easy to determine if AI-generated answers are wrong. However, some found the responses too verbose, and that they could be more useful if more concise. Our participants also evaluated GenAI's suggestions based on how practical they were to implement, how flexible and intuitive they were, if they were in scope, as well as whether they matched intuition or expectations.

Handling responses from GenAI. GenAI suggestions were not always tailored to match the team's context, their project timeline, and available resources. Some were considered inapplicable, irrelevant, unnecessary, or unimportant, and were abandoned. Respondents also mention making changes to GenAI suggestions to better align them with their project needs and the course material.

4.5 Additional Insights from the Survey

While the interviews with the SMs suggest that GenAI tools helped students learn and apply Agile, survey results show that this does not apply to every student (see Figure 1). 24% of the respondents used GenAI assistance rarely or not at all. Students who answered "Do not use" got the possibility to explain why.

Within the answers, there was the fear of “getting caught”, lack of time or interest. Some respondents may not have accessed our tutorial on using GenAI [12], leading to limited awareness of its institutional approval and ethical use.

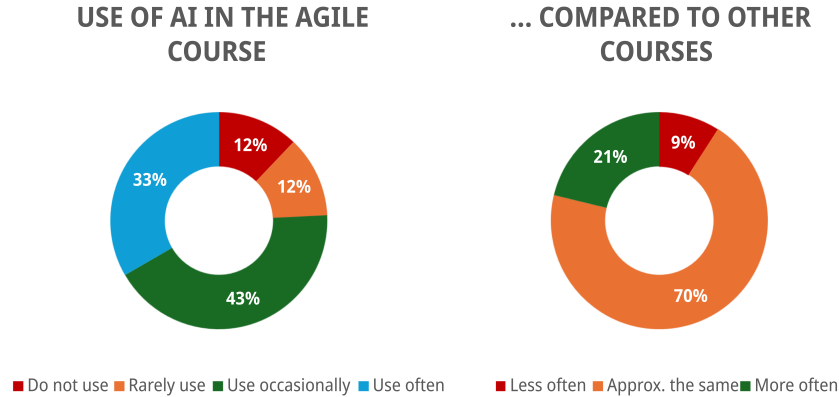


Fig. 1: Responses to survey questions (a) To what extent do you personally use GenAI in the Agile course? and (b) To what extent do you personally use GenAI in the Agile course compared to other courses in your study program?

We also investigated the use of generative GenAI tools in this Agile project course compared to other courses. Although the students were encouraged to use GenAI tools in the course, not all students used these tools more than they did in other courses. This shows that GenAI is generally widespread among students, even if they are not encouraged to use it.

Our survey responses point out a clear expectation that AI should be more systematically integrated into the Agile project course. As shown in Figure 2, most participants believed that GenAI should be included to some or a high degree. In addition, most students predicted that GenAI will affect their future work. Specifically, 45% of the respondents expect GenAI to influence their professional careers to a high or very high degree, while 49% believe it will do so to some degree. This indicates that students are not only open to but also expect training with GenAI to be relevant for future career.

The open-ended survey responses corroborate several of the themes identified in the interviews. Multiple respondents described GenAI as a sparring partner or even a “*rubber duck to wrap their heads around issues*”, reflecting the SM’s perceptions of using GenAI for reassurance. Across both data sources, students emphasized GenAI’s role in helping them get unstuck, particularly when teachers or assistants were not promptly available. Survey comments also reinforced that GenAI facilitated learning Agile by helping them remember key principles and provide explanations when course materials are insufficient. Like the interviewees, survey respondents reported using GenAI for coding and debugging (especially for repetitive or tedious tasks) and also noted some informal team-level rules, e.g., “*copy-paste is a nono*”.

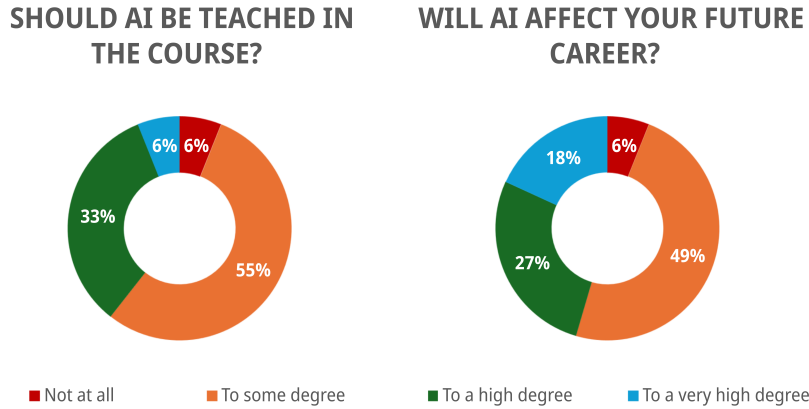


Fig. 2: Responses to the survey questions (a) To what extent do you think the use of GenAI should be included in the Agile course? and (b) To what extent do you think GenAI will affect your future working career?

Both interview and survey participants noted GenAI’s value for teamwork, such as supporting sprint planning, motivating members, and brainstorming. They also pointed out risks of blind trust, misinterpretations, dependency and reduced learning opportunities of uncritical GenAI use.

5 Discussion

5.1 Learning and applying Agile

This study was conducted in the context of an Agile course, so it is no surprise that the use of GenAI tools is focused on the participants gaining a better understanding of, and hands-on experience with Agile projects. To this end, participants reported using GenAI to explore potential alternatives, compare approaches, and seek advice on how to carry out specific Agile practices.

Our participants also used GenAI to put the theory of Agile methodologies into practice, helping them build confidence in their project roles and adapt the process to better suit their team’s context. Recent research has also demonstrated the value of ChatGPT in addressing gaps in software development education and strengthening students’ foundational understanding [18].

A key component of the use of GenAI was validation of their ideas, and reassurance that no essential elements of the process were missing. Thus, participants requested personalized guidance on their own documents and specific to their own circumstances. While teams did evaluate the GenAI’s suggestions, they felt the need for reassurance that their own evaluation is in line with accepted practice. GenAI tools tailored to Agile may further enhance this support by offering more context-specific insights [4].

An interesting observation is that SM’s found GenAI quite useful in implementing Agile in practice, but less useful in terms of planning sprints and task

breakdown. Studies argue for [10] and against [1, 9] the usefulness of GenAI in Agile planning. Our participants find GenAI useful for the more general planning process, such as step-by-step guidance on Agile practices. However, task breakdown, effort estimation, prioritization, and allocation was better handled by the team, as they shared a deeper understanding of the project context.

In line with previous studies, GenAI helped in Agile planning [2], in particular ensuring nothing was omitted [4]. GenAI served as scaffolding for planning activities, but participants understood that GenAI cannot replace the team's responsibility for the actual planning. It is their commitment that leads to successful outcomes for the project.

Our findings further suggest that once participants gain the experience of implementing Agile, they are likely to rely on that experience more than over-relying on GenAI tools. Participants in our study received training on the capabilities and limitations of GenAI, which likely help avoiding over-reliance, a challenge observed in other studies [9, 13].

We conclude that GenAI is useful in providing guidance on implementing Agile methods, especially for teams lacking practical experience [1], and providing additional support for existing literature [1, 2]. Effective use requires iterative interactions with GenAI, with users auditing and validating its responses [16].

5.2 Handling of in-team interactions

We also found that GenAI is used as a discussion partner to feel more confident when needed. GenAI helped identifying risks and collaboration problems in Agile teams and provide advice, coaching and actionable recommendations [1, 4]. Our respondents used GenAI tools both reactively and proactively to gain knowledge on how to handle problems that had arisen or could arise in the team, as well as to explore potential solutions.

By providing personalized, support GenAI also contributes to team motivation [4, 5]. In addition, it helps students to elaborate on the philosophy behind Agile, fostering students to understand the importance of good collaboration and communication [2] and interpersonal development [1]. Some respondents mention that GenAI helped them remember to focus not only on development tasks, but also on team dynamics and soft skills. It even offered advice on how to make meetings, such as a sprint retrospective, more enjoyable.

A possible down-side with using GenAI is that it may limit opportunities for human interaction, thus hindering the development of skills such as teamwork, problem-solving, and leadership [5]. Our respondents reported varied ways in which they applied GenAI's suggestions in the team - some implemented them without having consensus, while others emphasized discussing the suggestions and making decisions together.

5.3 Additional findings on GenAI use

Students reported how GenAI improved their efficiency in technical and organizational aspects, and reduced time spent on routine tasks, letting them focus on

problem-solving. As teaching staff wasn't always available, GenAI provided validation boosting students' confidence in decision-making. As mentioned by [14], a main advantage of GenAI is providing timely and personalized feedback, helping teams not get stuck, while reducing teaching staff workload. However, when exposed to contradictory guidance by GenAI and the teaching staff, students will choose the latter as it after all is the teacher who will grade them.

As in [5, 11] our respondents used GenAI to write documentation, and review language and grammar. However, there were some issues, as found in [5], where GenAI would change the content and the students had to revert changes. An additional use for GenAI tools was as support for coding and debugging. Different GenAI tools were used for coding and debugging, but we found no evidence for some tools being better than others in line with [11, 17].

Concerns about over-reliance on GenAI for coding are expressed in the literature [11, 13, 14]. Some of our respondents observed the team-members had a hard time with programming tasks without GenAI. However, we don't have evidence of generating code without first attempting without GenAI. There may be a need to teach students to use GenAI complementary rather than substituting their internalized knowledge, skills, and critical thinking. However, we have respondents reporting GenAI scaffolded their learning so well that they in the next project can rely more on their attained experiences and knowledge.

Other concerns in the literature include the misuse of GenAI and its limited usefulness for only summarizing information, rather than replacing course literature [5, 10]. Our respondents used GenAI to summarize topics, but favor answer referring to original sources. Another potential risk is receiving misleading suggestions [18]. Our respondents engaged in critical assessment of GenAI responses by discussing them in the team. Misleading and oversimplified responses were addressed by further prompting, and adding context information.

5.4 Implication for Pedagogic Practice

Our insights suggest that GenAI integration in project courses like PRO202 - Agile Project, should not merely focus on tool usage but also on developing students' competencies to reflect and adapt on GenAI outputs. Some suggestions to integrate GenAI formally into the teaching of the Agile project course are:

- **Skills and competencies**
 - Teach prompt engineering as a practical skill, highlighting how context-specific prompts improve the relevance and usefulness of GenAI outputs.
 - Provide exemplary prompts for common Agile issues such as enhancing team collaboration, sprint planning, effort estimation, and improving meeting dynamics.
 - Exercise team consensus to foster communication, negotiation, and leadership development.
- **Guided usage and evaluation**
 - Encourage students to use GenAI in the initial steps of Agile process, implementing practical tasks such as building the product backlog, planning poker sessions, or running their first retrospective meetings.

- Instruct on using GenAI as a sparring partner rather than a solution provider, by assigning roles in the team for prompting, evaluating, and integrating GenAI's suggestions.
 - Use comparison exercises where students solve a challenge manually and with GenAI assistance, followed by a discussion on differences.
 - Provide examples of generic or misleading recommendations, and ask students to critique and improve as a learning exercise.
- **Reflection and responsibility**
- Make a clear distinction between GenAI support and student responsibilities, especially in relation to learning outcomes.
 - Include reflection activities where students describe how they used GenAI during the project, what advice they followed or rejected, and how it impacted their decision-making.

6 Conclusions

This exploratory study examined how students engaged with GenAI tools in an Agile project-based course. Our findings indicate that students used GenAI primarily as a support tool to understand and apply Agile methods, validate decisions, and improve technical output and team collaboration. Rather than replacing critical thinking or teamwork, GenAI helped students move forward when uncertain, offering reassurance and tailored advice.

Concerns around overreliance and reduced critical thinking highlight the importance of instructions on how to evaluate GenAI outputs. Students valued GenAI as a learning support tool and are open to guidance on its responsible use. They demonstrated awareness of its limitations, often adapting suggestions to their project context or cross-checking with course materials. Moreover, they perceived GenAI as a key component of their future professional practice, thus the importance of preparing them to engage with such tools effectively.

Given the context-specific nature of this study, further research is needed to empirically validate our insights and refine pedagogical strategies for integrating GenAI in project-based learning. Such work should focus on enhancing learning outcomes such as developing critical thinking and skills that are transferable to professional practice.

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