

Exploring Student Perspectives on Generative AI in Requirements Engineering Education

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Abstract: The rapid development of generative AI (GenAI) technologies in recent years has enabled new opportunities as well as new challenges in higher education. While many studies in computer science have focused on GenAI in programming education, fewer have examined its possibilities and challenges in requirements engineering (RE). This study aims to explore the impact of GenAI on the pedagogical aspects of RE in higher education, focusing on the student perspective, to analyse how GenAI might influence learning experiences, knowledge acquisition, and skill development. The main research question to answer was: "What are the students' perspectives of the integration of GenAI in the educational practices of requirements engineering?" An Action research strategy was employed, with one of the authors also serving as teacher in the investigated course. A mixed-methods approach was used to collect both qualitative and quantitative data from workshops and surveys. During the workshops, students used ChatGPT to generate and evaluate software requirements and compared these to manually crafted requirements. Thematic analysis of the qualitative data captured students' perspectives, while survey data identified trends and preferences. Findings show that while students generally had a positive experience with GenAI, valuing its efficiency and the quality of generated requirements, they also recognized the need for human oversight to maintain accuracy. The study highlights both opportunities and challenges of using GenAI in RE education. While GenAI increased learning engagement and helped with brainstorming, students faced difficulties in creating effective prompts and found it time-consuming to refine AI-generated requirements. A hybrid approach, combining AI-generated and manually created requirements, proved most effective by balancing AI's advantages with human insights. Further research is needed on how GenAI could be effectively integrated into computer science education.

Keywords: Generative AI, Requirements engineering, Mixed methods, Higher education, Action research

1. Introduction

There has been a fast development of tools that build around Generative AI (GenAI) techniques after the release of ChatGPT in 2022. This rapid development of different GenAI tools has created both promising opportunities as well as new reports on challenges in higher education (Chan and Hu, 2023; Yeralan and Lee, 2023). In the field of computer science, there are studies reporting that students' use of GenAI in programming education can be problematic when syntactically correct code is generated without any deeper understanding of code semantics (Denny et al, 2024). Programming courses in higher education should also develop critical thinking, which might be lost in a frequent use of GenAI-based code construction (Kasneji et al., 2023).

Many research studies can be found that investigate the challenges and opportunities of GenAI in programming education. Less studies have been conducted about the possibilities and challenges of involving GenAI in requirements engineering (RE), and most of them have investigated RE in the industry and not in academia. A recent study by Ronanki et al. (2024), highlight that prompt engineering is a critical factor for success when using GenAI for RE. At the same time, this study also brings up the lack of tools and methods to systematically assess and create the effective prompt patterns to employ for specific RE tasks. Despite the advancements and potential opportunities, the use of GenAI in RE education remains underexplored. A literature search revealed that most studies focus broadly on AI in education rather than on GenAI tools specifically within RE education settings. This reveals a research gap and highlights a need to investigate the impact and optimal practices for integrating GenAI in this educational context. However, several challenges with integrating GenAI into higher education have been identified. For example, there are concerns regarding academic integrity and the responsible use of GenAI in educational settings, which requires careful supervision (Yu, 2023; Sullivan et al., 2023). This study explored both the perceived affordances with GenAI in requirements engineering, and the aligned constraints in the described research area.

The aim of this study is to explore the impact of GenAI on the pedagogical aspects of higher education RE. Moreover, the focus of this study was on the student perspective, and to analyse and discuss how GenAI might influence students' learning experiences, knowledge acquisition, and skill development. The research question that guided this study was: "What are the students' perspectives of the integration of GenAI in the educational practices of requirements engineering?"

2. Extended Background

Requirements engineering (RE) is generally accepted as critical to the creation of high-quality software (Ochodek, 2023). Engineering Education (REE) must teach students to specify, elicit, and manage requirements from stakeholders while also addressing socio-technical challenges and human-related aspects, preparing them for industrial challenges (Daun et al., 2022; Spichkova M, 2019). Recent trends in RE education (REE) show a shifting focus from instructor-centric approaches towards industry-centric approaches including collaborative project-based settings and the involvement of external stakeholders, which aims to give students an authentic RE experience (Daun et al., 2022).

GenAI has the potential to enhance learning experiences in higher education and is likely to drive innovation and improvement in the coming years, while also creating several new challenges (Michel Villarreal et al., 2023). In REE, AI opens up new opportunities for teaching and learning, and can assist students with practical RE tasks, ranging from brainstorming to requirements elicitation and validation (Moravánszky, 2024). GenAI tools can potentially contribute to making education more engaging and immersive due to its dynamic and interactive nature (Michel Villarreal et al., 2023). Its ability to understand and generate content similar to what humans produce allows providing personalized feedback to students (Daun and Brings, 2023). This can improve student engagement, motivation and retention, due to its ability to adapt to different students' needs and abilities (Hartley, 2023).

Uncontrolled student engagement with AI tools can lead to students relying too much on the AI-generated material, which can potentially diminish their critical thinking and problem-solving skills (Kasneji et al., 2023). To avoid the risk of GenAI tools "doing the homework" for learners and simultaneously boosting their understanding, Petrovska et al. (2024) suggests using AI tools in a careful and creative way by developing assessments that can encourage learners to critically evaluate AI-generated content. In a recent REE study by Moravánszky (2024), challenges were found regarding creating effective prompts, and AI was valued as a supplementary tool rather than a complete replacement. This emphasizes AI's optimal performance when combined with human expertise and guidance. It is important to strike a balance between new technology and student-centred approaches to ensure that the integration of GenAI improves education rather than detracts from it. Human skills such as critical thinking, curiosity and personal growth cannot be replaced by an AI (Shaji George, 2023).

3. Methodology

This chapter presents the methodology and materials used in this study. It contains descriptions of the methods of research, data collections, and data analysis.

3.1 Action Research Approach

This study was conducted according to the action research approach outlined by Norton (2009). In the spirit of action research one of the authors has been a teacher in the investigated course and moderating the workshops where data were collected. Action research has been defined as a practically oriented, but systematic research approach, "*that enables teachers to investigate their own teaching and their student's learning*" (Nolen & Putten, 2007, p. 401). There are several branches of Action research, where this study should be classified as in the British tradition that has been described by Norton (2009, p. 71), as an approach "*that links research to improvement of practice and is education orientated*". The authors' overall objective is to achieve research results that can be useful in the future redesign of activities in the investigated course.

3.2 Data Collection

A mixed methods approach was used, combining both qualitative and quantitative methods, to provide a comprehensive understanding of how students interact with GenAI in RE education. This approach enriches the analysis where the combination of different data sources strengthens the validity (Creswell & Plano Clark, 2017). An exploratory sequential design was employed, starting with collecting and analysing qualitative data to help develop the quantitative survey. The process began with workshops that included reflections and group discussions to gather detailed insights. These insights were then used to develop a survey. This approach ensured that the survey was based on real student experiences, making it more relevant and accurate (Creswell & Plano Clark, 2017).

3.2.1 Workshops

The workshops were an integral part of the research design. They were conducted during the course "Analysis and Design of Information Systems", which focuses on requirements management and design principles. Each workshop included the following components:

- **Interactive Sessions:** Included activities such as building requirements specifications from fictional stakeholders based on case studies and personas. Both GenAI tools and traditional methods were used to create these documents.
- **Analytical Exercises:** Students evaluated and refined both AI-generated and manually created requirements. They used insights from the interactive sessions to improve these documents. They were also asked to exchange requirements documents where some were written manually and others generated by AI, and guess their origins.
- **Reflection Activities:** After each workshop, students were tasked to reflect on their experiences of using GenAI, through both written reflections and group discussions.

All workshops were recorded and transcribed to capture the students' interactions with GenAI.

3.2.2 Surveys

Surveys were distributed to collect additional data about how students felt about using GenAI in the workshops. These surveys were structured with Likert-scale items, which measure levels of agreement or disagreement (Likert, 1932), to evaluate different aspects such as the usability, relevance, and quality of the AI-generated requirements. They were designed to cover different aspects of GenAI's role in RE education, especially the benefits, challenges, and how it improves learning and understanding.

3.3 Data Analysis

The qualitative data were initially analysed separately to create a foundation for the survey design as depicted in Figure 1 below. Later the qualitative results were compared to the quantitative results with the idea of data triangulation.

3.3.1 Qualitative analysis

Thematic analysis was used on the qualitative data from the workshops and reflective sessions. The data was coded iteratively, to identify important themes. It was used to carefully identify, analyse and report patterns in the data (Braun and Clarke, 2006). This method was chosen because it allows for a detailed and nuanced analysis of the data, which helped to understand students' perspectives on using GenAI in RE education.

3.3.2 Quantitative analysis

The data from the surveys were analysed using established statistical methods to show how the responses varied, which highlighted students' evaluations of the benefits and challenges of using GenAI. Descriptive statistics utilized to summarize the data, using measures such as means, medians, and standard deviations (Edling and Hedström, 2003). This approach was selected because it provides a clear summary of the survey results, which makes it easy to interpret and compare responses.

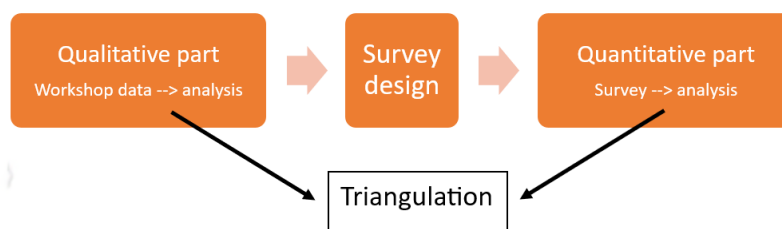


Figure 1: The study's exploratory sequential design

As outlined by Howe (2012), triangulation can be used in mixed method research both to confirm and disconfirm findings, depending on whether data from different data sources converge or diverge. Moreover, this study also used investigator triangulation when findings and claims were discussed in online meetings.

3.4 Ethical Consideration

Informed consent was obtained from each participant included in the study. They were given detailed information about the purpose of the study, their role in the study, and the rights to withdraw at any time (Bryman, 2016).

Confidentiality and anonymity were guaranteed to all participants and maintained throughout the research. Personal identifiers were removed, and pseudonyms were used when sharing the results. In order to align with the guidelines by the Swedish Research Council (Vetenskapsrådet, 2024), all data was securely stored with access that was restricted to the research team.

4. Findings

Findings from the workshop, and findings from the survey are firstly presented separately, and then compared and discussed together.

4.1 Workshop Findings

Twenty-five individuals attended the first workshop, and twelve individuals attended the second workshop. Thematic analysis according to Braun and Clarke resulted in the following three main themes across the workshops: *Facilitating learning, creativity and engagement*, *Challenges in crafting effective prompts and managing AI outputs*, and *Balancing AI and human insight*.

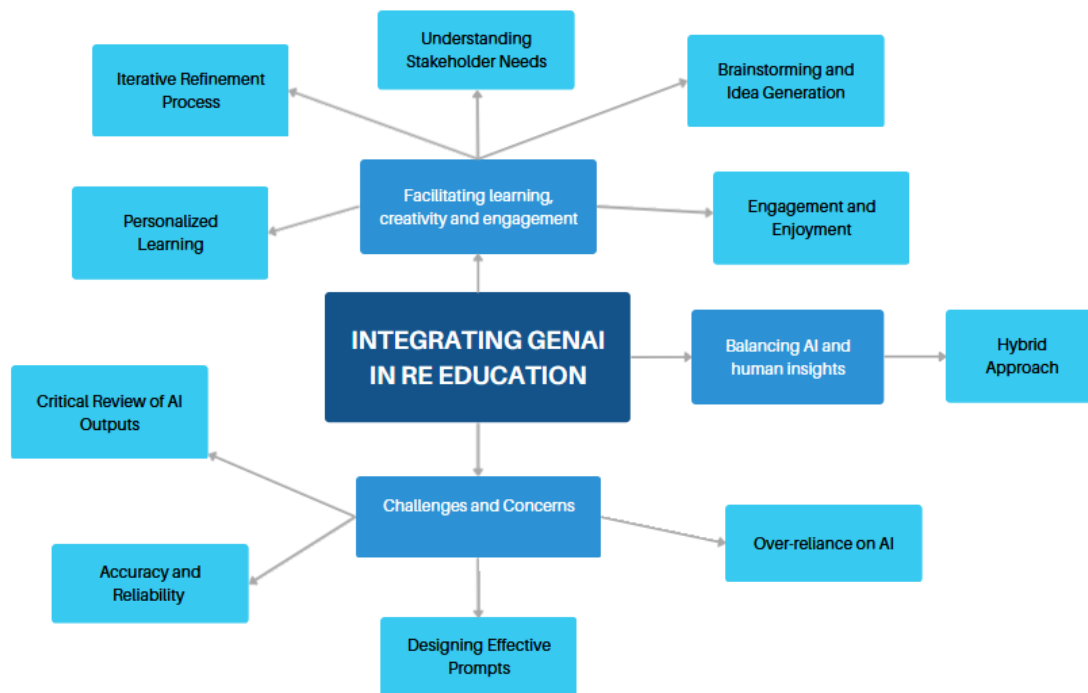


Figure 2: Found themes and their subthemes in the thematic analysis

4.1.1 Facilitating learning, creativity and engagement

In the initial session of the workshops, students were tasked with using ChatGPT to develop requirements based on fictitious case studies and personas. While some students perceived certain AI-generated requirements to be too generic or irrelevant to the context of their case studies, most students appreciated the AI's ability to suggest potential needs and requirements they had not considered on their own. "It was easy to input detailed personas and ask ChatGPT to start from the personas' needs to improve requirements from a user perspective, which made it easier to connect certain traits of personas to relevant requirements and needs," as stated by one student.

Students felt that it was relatively easy to receive useful tips and suggestions on how to improve their requirements documents. Another clear advantage was that ChatGPT could be useful for brainstorming and generating ideas, particularly when something felt unclear or when it was difficult to get started. Several students appreciated AI's ability to suggest features and requirements that they had not thought of themselves, inspiring them to try out new ways of formulating and structuring requirements.

There were several comments that using GenAI was more fun and engaging than manually creating requirements specifications from scratch. The iterative interaction with ChatGPT was especially appreciated by many students. They compared this to iterating requirements in the real industry, where communication with stakeholders often occurs continuously throughout the project. This increased the students' interest and engagement, which was evident in observations of increased levels of active participation. One student noted "When I asked ChatGPT to make the requirements more detailed, they became clearer. I could also see further improvement when I asked for this again, so it helped to point out the same thing several times to get further refinements."

In an exercise where students were tasked with comparing AI-generated requirements with those written by hand, each group could relatively quickly identify which requirements were generated by the AI and distinguish them from those created by other students. It was observed that AI often used more detailed descriptions and more complicated language compared to requirements written by students. However, even if requirements written by students were simpler, they were also easier to understand and had more variations in the language. This process of comparing manually crafted requirements with AI-generated ones helped students understand the strengths and weaknesses of both approaches.

4.1.2 Challenges in crafting effective prompts and managing AI outputs

Despite students' optimism and the potential, they saw with using ChatGPT in their requirements engineering tasks, there were also several challenges. One notable challenge was learning to design effective prompts. A group of students commented that they often felt that generated requirements should have been made up of several smaller parts to make the requirements specification clearer and simpler. However, they acknowledged that this could have been avoided with more specific prompts. One student commented: "You have to spend a lot of time creating your prompts to get useful answers. The output can easily become too general, or on the contrary too specific but in the wrong parts." While some students appreciated that AI could suggest requirements and needs they had not thought of themselves, others viewed this as a disadvantage. Some students noted that ChatGPT could occasionally find some additional aspects that weren't needed or asked for, which forced them to specify their prompts further.

Students noted the importance of critically reviewing the AI-generated output to avoid misleading or incorrect information. They also commented that there could be a risk of becoming too comfortable and relying too much on the AI tool without critically examining the AI-generated information, an aspect that several students identified with. Students also reflected that learning can be negatively affected by directly copying the result and underscored the importance of critically reviewing the output. Students noted that while AI can save time because it is fast and efficient, it is important to still monitor and process everything manually to make sure everything is included and that is ethical and accurate. As one student reflected, "Although we present information, such as personas, to the AI, there is no guarantee that it will use this information correctly to design the requirements. It's important to oversee how the information is used and communicate how it is desired to be used, to ensure that all information is used in an appropriate way."

4.1.3 Balancing AI and human insight

Students argued that despite ChatGPT's extensive knowledge base, humans can still create better requirements specifications. It was pointed out that humans have a better understanding of the values and needs of other humans, which is crucial in software engineering. "Emotions and empathy give us an advantage when it comes to developing systems for other people. AI can't replace humans and should be used as a tool", as noted by one student. Students emphasised that a combination of their own thoughts and AI produced the best requirements specifications. This mixed approach was found to be the most effective strategy because it combines the speed and efficiency of AI with the accuracy of human input.

4.2 Survey Results

The survey was sent to all 35 students who participated in the workshops. Eighteen students responded to the questionnaire with a 51.43% response rate. The answers were scored on a 5-point Likert scale, and the most significant results are listed in *Table 1*. Since all respondents were first-year students, very few had previous experience in requirements engineering. Almost all (94.4%) reported using GenAI tools in their studies or private lives.

Table 1: Survey results

Question	Agree	Part. Agree	Neutral	Disagree	Comp. Disagree	Median	Mean	Std Dev
Higher quality requirements	11.1	55.6	11.1	16.7	5.6	22.3	33.37	29.41
Improved stakeholder needs	5.6	61.1	16.7	16.7	0.0	16.7	33.37	28.7
Provided useful suggestions	27.8	50	5.6	16.7	0.0	16.7	33.37	38.88
Best results with hybrid approach	50	33.3	5.6	11.1	0.0	11.1	33.33	43.36
Improved understanding of RE process	11.1	50	16.7	22.2	0.0	22.2	33.33	24.20
Positive impact on learning	11.1	61.1	5.6	22.2	0.0	22.2	33.33	34.67
Increased engagement & motivation	33.3	38.9	11.1	16.7	0.0	16.7	33.33	33.78
Effort to refine AI-outputs	5.6	44.4	5.6	38.9	5.6	44.5	33.37	24.20
Creating effective prompts	38.9	33.3	0.0	27.8	0.0	27.8	33.33	36.42
Risk of over-reliance	38.9	27.8	11.1	22.2	0.0	22.2	33.33	29.42

Students were asked about their experiences of using ChatGPT to help them create high-quality requirements. A significant majority (83.3%) of the respondents felt that the best results came from combining AI-generated requirements with manually created requirements. Only two (11.1%) disagreed with this statement, while one student had no opinion. More than three-fourths (77.8%) of respondents reported that AI gave useful suggestions that improved their requirements documents, while 16.7% did not feel that the suggestions were useful. Additionally, about two-thirds (66.7%) of respondents reported that ChatGPT improved their ability to capture stakeholder needs and convert them into requirements. However, 16.7% experienced no improvement at all, and an additional 16.7% had no opinion. Regarding using ChatGPT to craft requirements compared to manual methods, 66.7% of respondents reported that writing requirements with AI produced higher quality requirements compared to manual methods. In contrast, 22.3% of respondents felt that crafting requirements by hand yielded the best results, and 11.1% did not know. While most of the respondents reported having a positive experience using ChatGPT to capture and improve requirements, the survey results show some differences in individual experiences with the AI tool.

Students were also asked about their understanding and engagement. A majority (72.2%) of the respondents felt that using GenAI increased their interest and engagement in requirement engineering tasks, while 16.7% did not share this view. In terms of learning and understanding, slightly more than half of the students reported that the use of AI improved their understanding of the requirements engineering process. 22.2% disagreed and 16.7% did not know. Furthermore, 72.2% felt that ChatGPT contributed positively to their overall learning experience, while 22.2% had a different opinion.

Challenges were explored by asking the students about writing prompts and managing AI outputs. Of the respondents, 72.2% assessed it to be challenging to create effective prompts that produced the desired result, of which 38.9% expressed that it was very difficult. The others experienced no difficulty in creating effective prompts. Regarding AI-generated output, about half of respondents reported that it was often time-consuming and required effort to refine and adjust suggestions generated by the AI. One student had no opinion, and the rest did not find it to be frustrating to rework AI-generated answers. Researchers also asked about students' experiences of over-reliance on AI-generated output, which can negatively impact the quality of the

requirements and the learning process. Two-thirds (66.7%) of respondents acknowledged that this was a problem, with 22.2% disagreeing.

5. Discussion

The aim of this study was to explore the impact of GenAI on the pedagogical aspects of higher education RE, and how it might influence students' learning experiences. This was investigated by developing a series of workshops within the course Analysis and Design of Information Systems, followed by a questionnaire. Our results show that while GenAI can enhance students' abilities to understand and translate stakeholder needs into good requirements by providing valuable suggestions and inspiration, many students reported challenges in writing effective prompts and refining AI-generated answers to meet specific needs.

Overall, students found that GenAI gave useful suggestions and inspiration through iterative interactions that mimicked realistic communication with stakeholders, suggesting that GenAI has the potential to make higher education more engaging and interactive. This aligns with previous research (Michel Villarreal et al., 2023) about GenAI's contribution to enhance education by making it more engaging and immersive because of its dynamic and interactive characteristics. In addition to assisting with managing requirements, students found AI useful for brainstorming to help them generate ideas or get started. This was evident from both the workshop and the survey results, and corroborates findings by Moravánszky (2024) that AI can be helpful as a brainstorming partner to grapple with challenges in refining requirements. Additionally, the survey results show that GenAI improved students understanding for the requirements engineering process and contributed to their overall learning experience. This supports previous research (Hartley, 2023; Daun and Brings, 2023) that indicate that personalized learning through AI can improve student engagement and motivation. This demonstrates possibilities in how AI-tools can be implemented and adapted in different educational contexts.

Despite the positive aspects, there were also several challenges identified. It was notable that students faced difficulties in creating effective prompts, which is a critical factor for success when using GenAI in RE (Ronanki et al., 2024). There were several students who felt that it was time-consuming with repeated interactions where they had to guide the AI to refine and adapt requirements until they fulfilled specific needs. Another challenge was the risk of becoming too dependent on AI, which could lead to diminishing students own critical thinking and problem-solving skills (Kasneci et al., 2023). This indicates a need for training and supporting students in creating effective prompts and reviewing AI-generated content, which aligns with previous research (Petrovska et al., 2024, Moravánszky, 2024) that emphasizes the importance of guiding students in how to use AI-tools, especially in designing prompts and developing their abilities to critically reviewing AI-generated content.

Students favoured a combination of using both AI-generated and manually created requirements. This mixed approach takes advantage of the speed and efficiency of the AI as well as human insight and understanding to ensure that the requirements are relevant and tailored after the stakeholders' needs. This balance is essential in order to maximize the advantages of AI without losing the valuable insights that human traits such as empathy and critical thinking can provide, as also suggested by Shaji George (2023). While students recognized AI as valuable support, they emphasised that the tool should be used to complement their work rather than replace it entirely.

6. Conclusion and Future Work

To answer the research question, our findings show that students generally had a positive experience of using GenAI in RE education. They valued its efficiency and found it useful for tasks such as brainstorming and initiating drafts, which made the learning process more engaging and helped with idea generation. However, our study also revealed challenges. Students often faced difficulties in writing effective prompts and felt it was time-consuming to refine AI-generated outputs. Additionally, the risk of over-reliance on AI-generated content was highlighted, which points to the need for critical review to ensure accuracy. A mixed approach, combining the benefits of AI with human oversight, proved to be the most effective strategy. To summarise, GenAI showed a promising potential to add value to requirements engineering in higher education, but it requires a careful implementation to improve the learning outcomes.

This study was carried out in relatively small and heterogeneous group, and an interesting future follow-up would be to repeat the study with a larger and more diverse sample. What authors see as the most interesting and more challenging continuation would be to develop strategies for effective and ethical integration of GenAI in teaching and learning.

References

- Braun, V. & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology*, 3, 77–101. <https://doi.org/10.1191/1478088706qp063oa>.
- Bryman, Alan. (2016). *Social Research Methods* (5th ed.). Oxford University Press.
- Chan, C. K. Y., & Hu, W. (2023). Students' voices on generative AI: Perceptions, benefits, and challenges in higher education. *International Journal of Educational Technology in Higher Education*, 20(1), 43. <https://link.springer.com/article/10.1186/s41239-023-00411-8>
- Choudhuri, R., Liu, D., Steinmacher, I., Gerosa, M., & Sarma, A. (2024). How Far Are We? The Triumphs and Trials of Generative AI in Learning Software Engineering. In: *ICSE 2024 Research Track*, 17 April 2024, Luis de Freitas Branco - Generative AI Studies. <https://arxiv.org/abs/2312.11719>.
- Creswell, J.W. & Plano Clark, V.L. (2017). *Designing and Conducting Mixed Methods Research*. 3rd ed. Thousand Oaks, CA: SAGE Publications.
- Daun, M. & Brings, J. (2023). How ChatGPT Will Change Software Engineering Education. *ITICSE 2023: Proceedings of the 2023 Conference on Innovation and Technology in Computer Science Education*, 1, 110–116. <https://doi.org/10.1145/3587102.3588815>.
- Daun, M., Grubb, A.M., Stenkova, V., & Tenbergen, B. (2022). A systematic literature review of requirements engineering education. *Requirements Engineering*, 27, 1–24. <https://doi.org/10.1007/s00766-022-00381-9>.
- Denny, P., Prather, J., Becker, B. A., Finnie-Ansley, J., Hellas, A., Leinonen, J., ... & Sarsa, S. (2024). Computing education in the era of generative AI. *Communications of the ACM*, 67(2), 56-67.
- Edling, C. & Hedström, P. (2003). *Kvantitativa metoder - Grundläggande analysmetoder för samhälls- och beteendevetare*. Lund: Studentlitteratur AB.
- Hartley, S. (2023). More on AI Generated Content. *Current Psychiatry*, 22 (6). <https://doi.org/10.12788/cp.0371>
- Howe, K. R. (2012). Mixed methods, triangulation, and causal explanation. *Journal of Mixed Methods Research*, 6(2), 89-96. <https://doi.org/10.1177/1558689812437187>
- Kadaruddin, K. (2023). Empowering Education through Generative AI: Innovative Instructional Strategies for Tomorrow's Learners. *International Journal of Business, Law, and Education*, 4(2), 618 - 625. <https://doi.org/10.56442/ijble.v4i2.215>
- Kasneci, E.; Seßler, K.; Küchemann, S.; Bannert, M.; Dementieva, D.; Fischer, F.; Gasser, U.; Groh, G.; Günemann, S.; Hüllermeier, E.; et al. (2023). ChatGPT for good? On opportunities and challenges of large language models for education. *Learning and Individual Differences*, 103, 102274. <https://www.mdpi.com/2227-7102/13/4/410>
- Likert, R.A., 1932. Technique for the measurement of attitudes. *Archives of Psychology*, 140: 1-55.
- Memon, R.N., Ahmad, R., & Salim, S.S. (2010). Problems in Requirements Engineering Education: A Survey. *FIT '10: Proceedings of the 8th International Conference on Frontiers of Information Technology*, Article No. 5, 1-6.
- Moravánszky, A. (n.d.). *Doctoral School of Education, University of Szeged, Hungary & University of Applied Sciences of the Grisons, Switzerland*. <https://ceur-ws.org/Vol-3672/EuT-paper2.pdf>.
- Nolen, A.L. & Putten, J.V. (2007). Action research in education: Addressing gaps in ethical principles and practices. *Educational Researcher*, 36(7), 401-407.
- Norton, L. (2009). *Action Research in Teaching and Learning: A Practical Guide to Conducting Pedagogical Research in Universities*. Routledge.
- Ochodek, M., & Kopczyńska, S. (2018). Perceived importance of agile requirements engineering practices—a survey. *Journal of Systems and Software*, 143, 29-43.
- Petrovska, O., Clift, L., Moller, F., & Pearsall, R. (2024). Incorporating Generative AI into Software Development Education. *CEP '24: Proceedings of the 8th Conference on Computing Education Practice*, 37-40. <https://doi.org/10.1145/3633053.3633057>.
- Rajbhoj, A., Somase, A., Kulkarni, P., & Kulkarni, V. (2024). Accelerating Software Development Using Generative AI: ChatGPT Case Study. In: *17th Innovations in Software Engineering Conference (ISEC 2024) Research Papers*, 23 February 2024, Room 1 - R103 - Session 2 - LLMs Meet SE.
- Ronanki, K., Cabrero-Daniel, B., Horkoff, J., & Berger, C. (2024). Requirements Engineering Using Generative AI: Prompts and Prompting Patterns. In: Nguyen-Duc, A., Abrahamsson, P., & Khomh, F. (eds.) *Generative AI for Effective Software Development*. Springer, Cham. https://doi.org/10.1007/978-3-031-55642-5_5.
- Shaji George, A. (2023). The Potential of Generative AI to Reform Graduate Education. *Partners Universal International Research Journal*. <https://doi.org/10.5281/zenodo.10421475>
- Spichkova M (2019) Industry-oriented project-based learning of software engineering. In: 2019 24th International conference on engineering of complex computer systems (ICECCS), pp 51–60
- Sullivan, M.; Kelly, A.; & McLaughlan, P. (2023). ChatGPT in higher education: Considerations for academic integrity and student learning. *Journal of Applied Learning and Teaching*, 6, 1-10. <https://ro.ecu.edu.au/ecuworks2022-2026/2501/>
- Vetenskapsrådet. (2014). Conducting ethical research. <https://www.vr.se/english/applying-for-funding/requirements-terms-and-conditions/conducting-ethical-research.html> [20 June 2024].
- Yeralan, S., & Lee, L. A. (2023). Generative AI: Challenges to higher education. *Sustainable Engineering and Innovation*, 5(2), 107-116.

Yu, H. (2023). Reflection on whether ChatGPT should be banned by academia from the perspective of education and teaching. *Frontiers in Psychology*, 14, 1181712.
<https://www.frontiersin.org/journals/psychology/articles/10.3389/fpsyg.2023.1181712/full>