

EXPLORING GENERATIVE AI'S ROLE IN HIGHER EDUCATION STUDENT'S STUDY PROCESS

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ABSTRACT

Generative artificial intelligence (GenAI) is advancing at rapid pace, presenting both significant challenges and transformative opportunities for higher education pedagogy [1]. Challenges related to pedagogy, research, and GenAI integration in learning have been highlighted by several studies [2,3]. The concept of trust relating GenAI should also be explored, since it influences on how students act based on their trust or mistrust in technology [2]. Given the close ties to the professional world, universities of applied sciences are increasingly compelled to incorporate GenAI into learning, as it adds value to the student experience through personalization, which in turn potentially enhances academic performance [4]. Graduates proficient in GenAI will potentially also accelerate the adoption of AI technologies in the workforce.

Our research aligns with the strengths of universities of applied sciences and their role in developing pedagogical solutions related to the digital transformation of operational environments. The pilot study aims at enhancing understanding of GenAI's impact on students' studying and provide valuable insights for future research. Pilot is divided into two main parts. First, we aim to investigate students' initial attitudes and usage patterns regarding GenAI in their studies, with the objective of understanding their experiences and perceptions of its use.

Secondly, we designed a framework that integrates GenAI into five consecutive learning tasks, each focusing on a distinct type of application throughout the study process, encouraging its practical use. GenAI was integrated into the course's experiential learning process, where interdisciplinary student teams collaborated on authentic work-life assignments. This aimed to enhance competence development, facilitate problem-solving, foster active student engagement and enable application of knowledge in real-world contexts. GenAI was applied across different contexts within the study process to encourage student collaboration, support learning and teamworking, and foster reflection. This research aims to identify the best practices and challenges in integrating AI as an intelligent assistant for student teams. The goal is to enhance collaboration and problem-solving by exploring how GenAI can effectively support team dynamics, acting as a collaborator and work enhancer [5,6].

AI assistant framework was designed in Spring 2024 and the implementation began in Fall 2024, with results expected to be available by the end of the year. We conducted the survey in the spring of 2024 across two universities of applied sciences (n = 163) drawing on insights from previous studies [7,8] to inform the design of the questionnaire. Statistical analysis is currently underway, including quantitative analysis of the survey results.

Initial analysis of the survey results provides preliminary insights into how students are incorporating AI into their learning processes. The participant pool for the study was predominantly composed of students from business-related fields. The most prominently used GenAI application among the respondents was ChatGPT, with 59% reporting the use of version 3.0 and 4% using version 4.0. The survey results indicated that students employed Gen AI tools for various academic purposes, with a particular emphasis on exploring and understanding new concepts, assisting in ideation, and using GenAI as a tool for information searches. 52,5% of those respondents who used GenAI had not formally studied it's usage, while about 30% mentioned independently studying it. An important aspect of the study was to examine how students perceive and are aware of organizational guidelines and practices related to GenAI utilization within their studies. The survey revealed significant uncertainty among students regarding institutional practices. The results indicated that approximately 19% of the respondents either were unsure or felt that the use of GenAI tools was prohibited in their studies. Many of the respondents were also unsure about the procedures for using GenAI tools in learning tasks or how the use of it would impact their assessments, highlighting the need for transparency regarding GenAI's role in academic work and evaluation processes. A statistically significant relationship was found for example between individuals' trust in GenAI and their frequency of Gen AI use ($\chi^2 = 8,70$, $p = 0,016$). Results revealed that 63,6% of those who expressed high trust in Gen AI also reported frequent or occasional use, suggesting that higher trust in GenAI is linked to more frequent use of it.

Preliminary results from our pilot survey and the implementation of AI assistant intervention within students' study processes provide valuable insights into how GenAI is currently used by UAS students. These findings highlight the need for further development in AI literacy, integration, and student support, as well as the importance of clear guidelines and permissible uses to ensure equal access to GenAI tools and the necessary competencies for their effective use. Additionally, the pilot highlights the need to explore best practices for supporting and instructing students, particularly in promoting equality and providing adequate support to ensure the appropriate and ethical use of GenAI in higher education.

This study underscores the transformative potential of GenAI in higher education through targeted pilot initiatives. These pilots are designed to explore structured GenAI integration into study processes, with the goal of addressing challenges such as digital literacy, trust, and dependency. The findings offer a practical framework for GenAI utilization in educational contexts and highlight essential areas for future research and development. Moreover, the intertwined nature of research and development in these pilots supports international collaboration objectives for

universities of applied sciences, driving the creation of new models for intelligent experimentation and pedagogical innovation.

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