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Equipping Instructors to Foster *AI Literacy* in the Higher Education Classroom: Preliminary Results from a Pilot Project

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Abstract

The ever-growing number of new and constantly evolving AI-based (writing) tools poses a major challenge for university teaching, especially in writing classes. While students are increasingly exploring these tools without reflecting their use critically enough, many instructors are unsure how to approach these new tools in their own teaching and whether or how to integrate them into their courses. They are unfamiliar with many of the tools or feel overwhelmed by the abundance of options and the obvious or sometimes perceived expectation to integrate them into their teaching. As part of an award-winning pilot project, a platform was therefore developed to support instructors in teaching basic AI literacy skills, providing curated teaching materials and specially designed workshops. Survey results, ongoing subscriptions to the platform, and its partial integration into a new cross-university project all highlight the strong appreciation and continued relevance of these resources among instructors and higher education experts.

Keywords: *AI literacy; higher education; innovative teaching; teaching materials; workshops; emerging educational technologies.*

1. Introduction

The release of ChatGPT by Open AI in November 2022 and the emergence of many other Large Language Models (LLMs) following in its wake have had a disruptive effect on higher education (Farrelly et al., 2023; Sullivan et al., 2023; Bond et al., 2024), especially in the teaching of communication competencies, including business and academic writing. For both students and educators alike, these tools offer many new possibilities, but at the same time, they have also caused unease. While students increasingly use these tools, they often do so without reflecting them critically enough, which then results in unsatisfactory outcomes (Larson et al., 2024). For higher education teachers, this poses a major challenge, and the central question remains how to deal with generative AI inside and outside the classroom (Walter, 2024).

In this, instructors are faced with a dilemma. On the one hand, many universities have decided to approach these developments proactively by incorporating *AI literacy* into their curricula as part of a comprehensive and future-oriented education strategy aligned with digital transformation goals (Martin, 2023). According to Long and Magerko (2020), *AI literacy* is defined as a skill set that helps individuals to critically assess AI, interact with it effectively, and use it in everyday life. Furthermore, it includes recognizing AI tools, understanding how they work, knowing their benefits and limitations, understanding AI programming capabilities, and being aware of ethical issues and the role of humans in AI. The idea is therefore to teach students basic *AI literacy* skills and how to engage with AI appropriately (Southworth et al., 2023; Jensen et al., 2024; McDonald et al., 2024) to make them competent "managers of AI" (Cardon et al., 2023).

On the other hand, many lecturers are unfamiliar with most AI tools or feel overwhelmed by the constantly growing range of options and the obvious need or the (perceived) expectation to integrate them into their own teaching. This has also been reflected in the development of various *AI literacy frameworks*, such as UNESCO's *AI Competency Framework for Teachers* (2024). These circumstances gave rise to a pilot project, whose goal was to create a university-wide platform for lecturers with teaching materials for teaching basic *AI literacy* skills. A variety of workshops on different topics were developed to support lecturers in their teaching and to thereby help them tackle the aforementioned challenges.

2. Moodle Platform with Workshops

Over the course of two semesters (08/2023-07/2024), three main workshops A, B, and C were developed. All workshops were made accessible from the beginning to all interested staff members via the university's Moodle course management system. The sections for each workshop contained a "lesson plan" with recommendations for how to teach the workshop in question, complete lesson slides in the form of a PowerPoint presentation, and additional external materials, such as learning videos and useful links. The course page also offered support in the form of a forum for instructors to exchange experiences, the school's regulations and legal factsheets regarding the use of AI (e.g., in assignments), and further reading material. All workshops could be taught individually or in combination due to their modular nature, enabling lecturers to customize and adapt them to their specific needs. They were designed to support the lecturers regardless of their level of knowledge.

Workshop A served as a general introduction into AI tools such as ChatGPT, explaining their capabilities, limitations, and potential applications in higher education while emphasizing academic integrity. It included a short video overview, discussion prompts, and practical exercises where students, under instructor supervision, explored several AI tools in groups and reflected on their advantages and challenges. Workshop B built on the foundation established

in Workshop A by focusing on the use of AI tools for writing tasks such as summarizing and paraphrasing, introducing tools such as QuillBot to demonstrate advanced text modification features. Lecturers guided students in critically evaluating these tools, understanding quality standards, and addressing benefits, potential challenges, and limitations. Finally, Workshop C focused on academic research, specifically on the development of research questions, helping students leverage AI for brainstorming and refining queries. It encouraged a critical assessment of AI-generated research questions in terms of relevance, accuracy, and clarity, fostering a deeper reflection on the role of AI in the research process.

The instructions of each workshop included a brief concluding discussion on the importance of applying human judgement when evaluating and critically assessing AI-generated content. This was essential for ensuring adherence to quality and academic standards and for fostering critical thinking skills.

3. Methods

Prior to the first implementation of the workshops in fall semester 2023, 50 faculty members from different fields within the university were asked in an online survey (Google forms) about their use of AI tools in the classroom to better understand general needs and concerns. Moreover, a focus group of 12 communication lecturers, who had expressed their interest in using the workshops in their teaching in spring semester 2024, was invited for an interview, in which the workshops were presented to the lecturers in detail. The discussion was recorded and focused on the following pre-defined topics: 1. use of AI tools and self-assessment of own competence in using these tools; 2. dealing with AI tools in higher education; and 3. AI tools in the context of the home university. The main statements were transcribed and organized in thematic categories. In addition, a Padlet was made available to the lecturers to collect further feedback. The results of the survey, the discussion, and the feedback provided were then used for the further development of the workshops.[1]

After each implementation of the workshops in fall semester 2023 (version V.1) and spring semester 2024 (improved version V.2), the lecturers who had taught them were asked to participate in a semi-structured, open-ended interview and to complete structured feedback forms in order to detect potential need for changes and adjustments in the teaching materials.

[1] Students were also asked to provide feedback in an anonymous quantitative and qualitative online survey before and after being taught the workshops. Since these results are currently being published elsewhere and the focus of this paper is on higher education instructors, the findings are not discussed here.

4. Results

4.1. Faculty Survey

The results of the faculty survey revealed that while 49% of the lecturers had increased their use of AI in the classroom since the launch of ChatGPT in November 2022, 51% had not. Moreover, when asked about their level of confidence regarding the use of AI tools (1= not at all, 6= very), 60% indicated feelings of insecurity (see Figure 1). At the same time, however, when asked whether they thought it was expected of them to use AI in their teaching (1= not at all, 6= absolutely), 68% had the impression that they were indeed expected to use AI tools in the classroom, 34% of them even stating that they believed they absolutely had to (see Figure 2).

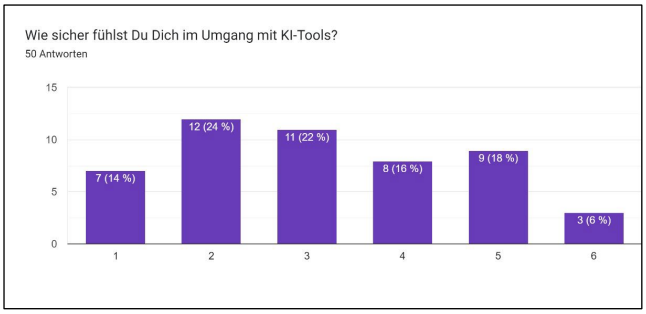

Figure 1. Survey question: "How confident do you feel about using AI tools?" Source: KI in der Hochschullehre (n.d.).

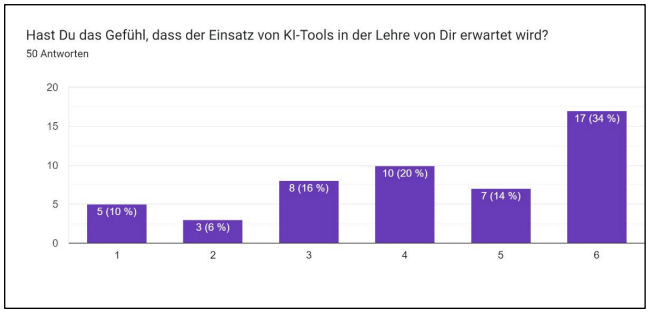

Figure 2. Survey question: "Do you have the impression that you are expected to use AI tools in your teaching?" Source: KI in der Hochschullehre (n.d.).

The faculty members were also asked for their opinion about the extent to which students used AI tools (1= not at all, 6= always). 79% believed that students used them often (23%), very often (52%), or always (4%) (see Figure 3).

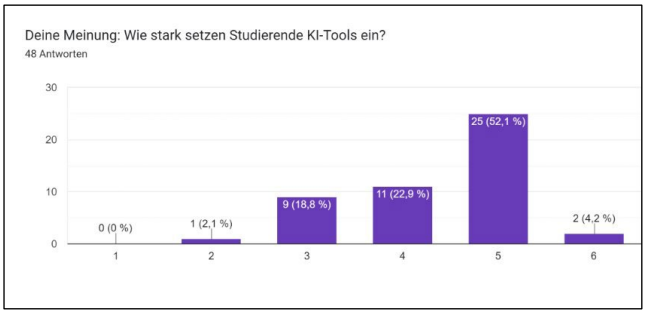

Figure 3. Survey question: "Your opinion: To what extent do students use AI tools?" Source: KI in der Hochschullehre (n.d.).

Yet, 80% believed that students were not or only somewhat skilled in their use of AI tools and did not consider ethical implications enough, with 22% stating that students never did so and 59% stating they did so only rarely.

4.2. Focus Group of Lecturers

The interviewed lecturers described varied use of AI tools, employing different tools for diverse tasks to varying degrees. In teaching, for example, some used AI to create case studies or exam questions. Many were in a "trial and error" phase, partly due to the rapid emergence of new tools becoming available. The discussion revealed varying knowledge levels and attitudes toward AI tools. Some lecturers were highly experienced, while others had limited familiarity. Many expressed uncertainty or concern about the rapid development of AI tools and knowledge gaps regarding university regulations ("what is allowed, what is not allowed"), asking for clear guidelines and specifications from the study directors to ensure a consistent approach across courses. They identified dealing with exams as the biggest challenge, revealing two contrasting views: namely restricting versus incorporating AI use. Some favored designing exams to prevent AI usage to focus on assessing students' knowledge without tool assistance, while also raising concerns about tool reliability. Others suggested integrating AI tools into exams from the outset. The discussion also addressed the values that students should be taught at university in the context of AI, how to best prepare them for their future professions, and lecturers' needs to be able to use and teach AI tools effectively and appropriately.

4.3. Qualitative Interviews: Lecturer's Feedback on Workshops

According to the lecturers who taught the workshops, these were well-organized and structured, effectively encouraging active participation and providing meaningful exchanges among students of all levels through practical demonstrations and hands-on activities. Students reportedly improved their understanding of AI tools and increased confidence in various aspects of business and academic writing, including text structure, the possibilities and challenges of

AI, and issues such as academic integrity and dishonesty. The workshops were particularly impactful for students without prior experience with LLMs; for more experienced students, the focus on academic integrity and institutional guidelines added value. All lecturers agreed that time management was the most significant challenge, as it limited the opportunity for proper discussions and comprehensive execution of tasks. Another challenge was the rapid evolution and market maturity of new AI writing tools, which required adaptations to some workshops.

5. Discussion

The survey completed by faculty teaching staff showed a large discrepancy in terms of knowledge, application, and competence but also attitudes and approaches towards these tools. While half of them saw a benefit or need to increase their use of AI tools in the classroom and had already done so, the other half had not, which might point to reluctance or insecurities with regard to incorporating AI into their teaching. This interpretation was further underscored by the fact that the majority (60%) expressed a lack of confidence about the use of AI technologies. At the same time, an even larger number of the educators (68%) felt pressured to incorporate AI in their teaching, 34% of them even stating that they believed they absolutely had to. This could be interpreted as pointing to a potential dilemma: On the one hand, teachers did see a growing need or expectation to include AI in their teaching – probably also because 79% of them had realized that students were increasingly using AI in their assignments, but in an inept or ethically questionable way. On the other hand, many did not feel adequately equipped to do so.

A similar ambivalence was found in the discussion with the lecturers of the focus group, indicating that they not only had different attitudes towards AI, but also different levels of confidence and competence regarding the use of AI tools. The knowledge advantage that lecturers normally have over students seemed to be softened here for once. This led to uncertainty regarding the didactic approach. In addition, there were few guidelines from the university management in fall 2023 that the lecturers could follow. Hence, what all lecturers agreed on was that the university needed to implement clear guidelines and instructions for both instructors and students to ensure consistency in the context of AI.

The lecturers who taught the workshops reported that the developed workshops were mostly appreciated by their students and worked quite well in their classes; moreover, they resonated well with lecturers across the entire school. The lecturers added that they appreciated the opportunity to stick to certain guidelines and lesson notes, especially at the beginning. This was especially true in the first two semesters (fall semester 2023 and spring semester 2024), when ChatGPT brought the AI writing tools into focus for all students and lectures, and when guidelines from the university management were mostly missing. The teachers' feedback was

useful to realize that, between the first and final versions of the workshops, only time management had to be adjusted for their improvement.

6. Conclusion and Outlook

Cooperating closely with the university's teaching staff over the course of two semesters revealed important needs and challenges on their side. This information was used to continuously develop useful and supporting teaching materials, which were meant to facilitate their teaching of *AI literacy* skills in the classroom. In general, the workshops were very well received and continue to be taught. The project was awarded the university's innovation prize in June 2024, and staff members still ask for access to the materials on the Moodle platform. Therefore, it was suggested by several higher education experts within the university that the workshop materials be published in an Open Educational Resources (OER) repository to make them publicly available. Insights and content from this pilot project will also feed into a new joint initiative by FHNW and the University of Basel, funded by the swissuniversities network. The aim of this project is to strengthen the digital and AI competencies of all university members and to foster a cultural shift by developing tailored frameworks and learning opportunities that support the effective integration of AI in teaching and learning.

7. Limitations

This study is limited as it relies on insights from only a small number of lecturers. Further research could be conducted to analyze the experiences and feedback of a larger group of instructors who have taught the workshops by now. Nevertheless, we have realized the ongoing validity and relevance of our work due to the continuing demand for the workshops.

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