AI EU-phoria? Exploring International Sentiments on the Use of AI in Higher Education

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Abstract

The onset of artificial intelligence (AI) tools has affected various areas in business and society. AI has also begun changing the way higher education institutions carry out their work, leading educators, students, and university staff to adapt to the peculiarities of AI. While research has begun investigating the impact of AI tools on higher education, these studies largely focus on specific countries, lacking the integration of international perspectives. Since there is a need for information on available resources and cultural differences, this integration should prove highly beneficial to help countries develop strategies to enable a safe, inclusive, and sustainable use of AI in higher education. We conducted five focus group interviews with $N = 38$ participants from three EU countries (Germany, Spain, and Greece), combining international experiences in the use of AI in higher education, possible benefits and challenges, and requirements for a sustainable use. Using a collection of different methodical approaches, we fostered an open exchange with teachers, students, and staff from higher education. Our preliminary findings offer a cross-national perspective on the use of AI in higher education.

Keywords

Focus groups, AI use, AI benefits and challenges, recommendations for higher education

1. Introduction

Even though artificial intelligence (AI) has its roots in the 1950s [1], public access to ChatGPT has moved the technology to the center of society. One of these areas is higher education, where AI tools have found a plethora of applications [2]: teachers are using AI to enhance their teaching practices [3, 2] and offer course material in more accessible ways, while students use generative AI (GenAI) to follow-up with their lectures [4].

To ensure a safe, inclusive, and sustainable implementation of AI, the technology needs to be studied in higher education institutions. Existing research has started to theorize how this implementation might be carried out (e.g., [5, 6, 7]), yet few researchers have initiated an exchange with higher education stakeholders and a majority of studies focus on just a single country. While many countries might have vastly differing framework conditions for the use of AI in higher education, at least the countries within the European Union (EU) are bound by the EU AI ACT [8]. This means that – at least in the EU –

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an integration of individual countries' perspectives and strategies is sensible and might unlock new knowledge in the pursuit of fostering a safe, inclusive, and sustainable use of AI in higher education.

To enable this integration of international perspectives and experiences, we conducted five focus group interviews with a total of $N = 38$ stakeholders from higher education in Germany, Spain, and Greece. Participants included higher education teachers, students, and administrative university staff. Following a semi-structured set of questions, we deployed different methods within the focus group interviews, generating various types of artifacts (such as recordings and digital notes). Using qualitative content analysis (QCA), we clustered answers to collect stakeholders' experiences, needs, and perceived challenges.

Our preliminary findings contribute to the growing body of research on the use of AI in higher education by offering insights into different countries' approaches for AI implementation, as well as their experiences and needs. These findings can assist stakeholders and researchers from across different EU member states in developing their own comprehensive AI strategies, balancing protective measures, universal design, and environmental stewardship.

2. Related Work on AI in Higher Education

Touching briefly upon work regarding how higher education institutions should implement AI, a common recommendation states that academic integrity might suffer unless institutions establish comprehensive guidelines on how and for what AI may or may not be used [6, 9]. Research highlights the possible benefits of AI in that it could shape more individualized and inclusive learning experiences, leading to a more equal access to education [7]. At the same time, AI being used in higher education raises numerous concerns, including data privacy, transparency, and biases [10]. Addressing some of these concerns, there are calls to include AI developers in the process of implementing AI into higher education institutions [11]. Additionally, ethical principles such as clear accountability for AI tools, inclusiveness, sustainability, and security must be considered and addressed when integrating AI [5].

Crucially, most of previous research focuses on holistic analyses, rather than involving stakeholders directly by carrying out open exchanges. Individual publications suggest involving educators [2], higher education experts [12], or decision-makers at institutions [10], yet many of the existing studies rely on literature reviews (e.g., [2, 9, 13]). Little research has used focus group interviews, which would lead to more detailed findings [14] and offer more personal and in-depth perspectives. Additionally, many studies predominantly focus on a single country, even though a more international examination of this topic might lead to more generalizable findings [15]. In contrast, our cross-national, bottom-up design provides grounded, comparative insights that are often missing in top-down, policy-oriented analyses. The combination of qualitative content analysis and diverse data artifacts (including creative identity assignments and digital whiteboards) introduces an innovative layer to traditional focus group methods. In the process, we investigate what experiences, opinions, and requirements higher education stakeholders have regarding the use of AI.

3. Research Design

To explore international perspectives on AI in higher education, we conducted five focus group interviews with a total of $N = 38$ participants from three EU countries (Germany, Spain, and Greece). The interviews were carried out between January and March of 2025 and were conducted by different authors in the different countries. They followed a shared semi-structured questionnaire, ensuring that the same topics were covered. The interview guide covered six different parts, comprising the participants' familiarity with AI in general, their interest in AI, which benefits they expect from AI for students, which benefits participants expected for their own academic work, what concerns were present regarding the implementation of AI in higher education, and whether they felt prepared for using AI in their daily work context, or whether they needed additional skills or support to do so.

Table 1
Distribution of participants and their background

Focus Group ID	Country	# of Participants	Participants
1	Germany	5	Teaching, research, and administrative staff
2	Germany	4	Teaching, research, and administrative staff
3	Germany	5	Teaching and research staff
4	Greece	12	Teaching and research staff
5	Spain	12	Teaching and research staff, students

Each focus group consisted of five to twelve participants and involved teachers (both lecturers and professors), research staff, administrative staff (e.g., university decision-makers), didactics experts, and students (both from bachelor and master programs). The compositions differed, with some focus groups involving no students at all, while others actively fostered exchanges between teachers and students. An overview of participants, along with their background per focus group can be found in Table 1 below.

To gather as many insights as possible, focus groups across the different countries were conducted slightly differently, yielding different artifacts. The artifacts that were generated during the focus groups included interview recordings, notes summarizing the participants' main points, and clusters of digital notes, as well as various quantitative data. For three focus groups in Germany, participants self-assigned superhero identities, which allowed for an anonymous connection of their recorded utterings and the notes they left on a shared digital whiteboard. All artifacts were anonymized and transcribed into written documents for further analysis, following common recommendations [16].

All focus groups followed a shared interview guide, which is included in the digital appendix provided at OSF under the following link: osf.io/p8xuv.

Artifacts were then analyzed using QCA, inductively creating a coding scheme. After the first focus group interview had been coded in its entirety, the coding scheme was shared with the other countries' authors, who then applied and inductively extended the coding scheme to create a shared collection of codes mentioned by participants. This combined coding scheme was then used to derive and cluster participants' responses into fitting categories, resulting in a total of 36 categories, which are laid out in more detail in the following chapter.

4. Preliminary Findings

4.1. Experience with and Benefits of AI

For n = 14 participants, we quantified their experience with AI in their daily work. These university stakeholders were using AI tools semi-regularly (M = 4.32, SD = 1.88), with the lowest value being 1 ("never using AI for work") and the highest value being 7 ("using AI all the time for work"). A rough organization of respondents into *minimal users, intermediate users,* and *expert users* further revealed that for most findings, the frequency of AI use was connected to whether participants saw more benefits or challenges in the application of AI into their daily workflows. Additionally, we identified the **tools and models** that were being used already, resulting in a list of 18 different tools: *ChatGPT (13 mentions), Deepl (6 mentions), Consensus (2 mentions), Elicit (4 mentions), Midjourney (2 mentions), Copilot (3 mentions), Gemini (2 mentions), Grammarly, Dall-E, Connected Papers, QuillBot, Copy.ai, Bard, Claude, Otter.ai, MonkeyLearn, Turnitin,* and *LaTeX AI (one mention each).*

Regarding the possible applications of AI for both **teachers** and **students**, we identified a total of seven categories: *Effectiveness, quality improvement, creativity, inclusion & accessibility, personalized learning support, assisted decision-making,* and *resource finding.* Under **effectiveness**, students and teachers described that using AI helps them conduct their daily tasks more quickly. For example, one participant said: *"I'm doing a lot of programming at the moment, so I have a massive increase in productivity thanks to ChatGPT".* Similarly, participants reported using especially generative AI for

quality improvement, by for example increasing text readability, checking for grammar and spelling mistakes, and fixing errors in their code. Additionally, participants underlined that they use AI tools to foster **creativity**, for example through the generation of new ideas, images or content such as blog entries: *"When you need a transition from one topic to another, it's super helpful to actually get an output with small inputs that you can then use to create your own ideas"*.

Beyond these performance benefits, participants also highlighted the boost of **inclusivity and accessibility**, since existing content can be checked for accessibility or lecture videos can be enriched with subtitles for deaf students, thereby improving access to course content independent from disabilities. In this context, free access to many tools was seen as reducing economic barriers, along with the possibility to use generative AI as a personal translator. Specifically students stressed receiving **personalized learning support** from AI tools, since lesson content can be summarized and changed to the preferences of individual students.: *"The individual learning approach is strengthened and [the tool] can then react more readily to a person's personal sensitivities"*. In addition, students highlighted that AI can help them in **finding resources**, such as additional publications or tutorials for their course content. Finally, teachers suggested that AI can help their **decision-making**, for example when grading exams: *"You can get advice from the AI tool to see whether you make some outlier decisions"*.

4.2. Challenges of AI and Use Barriers

Regarding potential challenges of AI use in higher education, participants mentioned a total of nine different aspects: *Ethical problems, missing knowledge, unclear rules, loss of cognitive abilities, replacement of human labor, continuous advancement of AI, questioning the need to learn traditional skills, limits of AI, homogeneity* and *AI as an essential skill*. The **ethical problems** participants identified comprised **unequal opportunities** caused by unequal skill levels regarding the use of AI, the **reproduction of stereotypes and discrimination** through biases in training data, and the **unfair use of AI**, for example for submitting theses or assignments that should have been written by the students themselves: *"If we have students who barely use AI [...] compare their [submissions] with someone who has used a lot of AI, [we cannot know] whether he or she has really informed themselves about [the topic]"*.

Additional ethical concerns surround **sustainability** – as AI tools need a lot of energy –, a possible loss of **digital sovereignty**, and increase of **fake news, plagiarism, and misinformation**, **distinguishing between AI and human-made academic work**, and possible **negative effects on self-esteem** (for example when comparing one's own work against AI-generated content). The **lack of knowledge** suggested by participants comprises different sub-codes: Knowledge on *biases, over-reliance, manipulation,* and *data protection*. Even though most participants were aware that AI is often biased, they claimed to lack knowledge on the types and extent of these **biases**. Further, there were concerns that participants lack knowledge on the impact of **over-reliance** on AI, **manipulation** of results from foreign forces, and *data protection* laws and regulations.

Participants were further concerned that using AI might lead to a **loss of cognitive abilities** or the **replacement of human labor**. At the same time, especially teachers explained that the **continuous advancement of AI** forces them to stay up-to-date with the rapid emergence of new tools, with some participants questioning whether there is still a **need to learn traditional skills**: *"And it is simply more difficult to convey that you should be able to do [things traditionally], this necessity is called into question"*.

Interviewees also referred to the **lack of true social interaction and emotional connection** and *technical* limitations, such as limitations in processing power and more complex tasks, like for example in physics calculations. A further challenge is that many institutions still have **unclear rules** on how AI may be used: *"I would like to use more AI in my job, but don't know whether that's allowed [...] or whether that could entail data protection related issues"*. Beyond that, participants remarked on the **homogeneity** of outputs, and a lack of ideas regarding the **added value** that AI might offer: *"I totally forget that this tool exists. [...] And apart from that, I don't think I really had any impulse to use it [...] because it's not that commonplace for me yet"*.

4.3. Preconditions for the Use of AI

We asked participants what they required to feel prepared for broader AI use. Their responses include *skills, knowledge, uniform rules, resources,* and *self-initiative in learning AI*. The **skills** that most participants needed are both in regards to their AI **expertise** – i.e., how they can operate AI tools – and the **critical reflection** of outputs, since many participants stressed that they did not feel confident in always recognizing false information generated by AI.

Similarly, some staff and students lack **knowledge on AI**, on how it works and how it can be used, as well as **knowledge on content**, which includes knowing how to interpret different types of outputs. From their institutions, most participants agreed that they need **uniform rules and guidelines** on the use of AI, **resources for effective AI usage** – such as tutorials or workshops – and time to be able to take **self-initiative for learning AI usage**: *"I have done some training, but I haven't really had the time to really get into it"*.

5. Discussion and Future Work

We set out to gain an integrated understanding into the experiences with and opinion on the use of AI in higher education. For this, we conducted focus group interviews in three EU countries. These focus groups included different stakeholders from higher education institutions, such as teachers, students, and didactic and administrative staff. Our preliminary findings show that there is a high variability in how frequently and for what purposes AI tools are being used. The participants highlight many benefits, such as more personalized, inclusive, and effective learning and teaching. At the same time, there are various concerns such as unclear legal frameworks, university guidelines and the lack of knowledge on how AI affects universities in the future. Regarding feelings of preparedness, some participants feel well-prepared, while others require time and resources to understand the way AI works and how its negative side effects can be mitigated. While we cannot claim generalizability since we conducted a qualitative study rather than quantitative analyses, the focus group interviews offered individual and in-depth perspectives from different stakeholders at universities.

At this early stage of research on AI in higher education, this introduces a breadth of findings, which provides opportunities for more focused further research. Nevertheless, our work has a limitation: The generation of different artifacts and slight differences in the detailed method might introduce biases that make comparisons of data problematic. However, we did not compare the countries' results, but rather decided to pool results to gain integrated insights.

Our current steps include carrying out more focus groups in a fourth EU country (Italy) and an even deeper analysis of how the attitudes of higher education stakeholder might be quantified and measured to achieve generalizability. Additionally, we are examining how different countries vary in available resources and constraints (such as legal regulations). Through this, we are hoping to gain a deeper understanding of how higher education stakeholders, and especially teachers, can be enabled to confidently reap the benefits of AI while carrying out their teaching duties.

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Declaration on Generative AI

The authors have not employed any Generative AI tools for writing this manuscript.

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