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STUDENTS' PERCEPTIONS OF GENERATIVE AI USAGE AND RISKS IN A FINNISH HIGHER EDUCATION INSTITUTION

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Abstract

The latest developments in modern technologies, in particular Generative AI (GenAI) have prompted a significant change in education. This trend of growing GenAI tools is expected to cause significant changes in the use of technological tools in higher education. Consequently, it will influence the skills of the students and their ability to adjust to these new trends.

The aim of this study is to describe the perceptions of Bachelor of Business Administration (BBA) students regarding their use of generative AI tools, the possible risks associated with the tools and the support they seek from their lecturers when using these tools. The data has been collected via two surveys during the autumn semester 2023. All students participating in this research are BBA students in a university of applied sciences in Finland.

A vast majority of students have used GenAI in their studies. Some of the commonalities included asking clarifying questions on topics related to their studies or improving their own text. Furthermore, the study reveals that there are two primary categories of risks. The first category focuses on issues related to the answers generated by GenAI. These issues included outdated information, AI's ability to fabricate answers, and the potential risks of plagiarism. The second category centres on the risk of becoming dependent on AI. The students emphasized that GenAI undermined their creativity and imagination, while also reducing their critical thinking skills. Moreover, nearly half of the students reported to be unaware of the guidelines for reporting the use of GenAI. The students expected lecturers to inform them clearly of the permissibility of usage and guidance on how to refence its use.

In conclusion, the results show that students are aware of the possibilities and the challenges related to the use of GenAI. Therefore, lecturers need to take an active role in instructing the appropriate use of GenAI and tailoring the course assignments and assessments to align with the challenges posed by the era of GenAI.

Keywords: Generative Artificial Intelligence, Learning, Risks, Teacher Support, Higher Education, Survey.

1 INTRODUCTION

The use of GenAI has shifted the paradigm in teaching and learning in higher education institutions. This shift in education is not only limited to the classrooms but it also expands in the overall education, and it creates new learning endeavors and risks.

Artificial Intelligence (AI) as part of education is dating back to the 1950s, starting as intelligent tutoring systems and evolving into a broad range of educational technologies as chats, bots, etc.[1,2] Furthermore, in the 1980's, AI in education has evolved as a separate field of study and research.[3] In the field of AI, towards the end of 2022, Generative Artificial Intelligence (GenAI) has grown exponentially [4]. However, despite this rapid advancement, the integration of GenAI tools into teaching and learning is a relatively new phenomenon. Both lecturers and students are in the early stages of adopting this technology in their teaching and learning practices. It is expected that the integration of AI applications will transform lecturers' work and impact students' learning outcomes. Nevertheless, it is important to acknowledge that these applications introduce risks and ethical issues in education [5]. Therefore, a comprehensive understanding of the technology limitations and risks of AI-based digital tools is crucial [6]. Lecturers need to be equipped with the knowledge and capabilities to support students when using GenAI in their learning endeavors [7].

Based on these changes in education and particularly in higher educational institutions (HEI) this paper focuses on the following research questions:

Research question 1: What are the perceptions of Bachelor of Business Administration (BBA) students in Finland regarding their use of GenAI tools in course tasks?

Research question 2: What are the possible risks and expectations for lecturers' support associated with students' use of the GenAI tools in course tasks?

1.1 Finland's position on Artificial Intelligence in education

Finland's mission is to become AI leader and trendsetter in the world. Finland has taken a significant step in the implementation of AI in the public sector and other businesses as well as education. Additionally, to the national AI strategy [8] of The Finnish Ministry of Economic Affairs, in 2018, has released a policy report on growth and employment regarding the future skills: communication and social skills, cognitive skills, creativity, also it promotes the student's flexibility and freedom to organize their own studies, updating teaching methods [9]. The report suggests advancing the educational system with AI as a driver for the forthcoming changes to support learning by urging educational institutions to increase the diversity of programs where learners will be able to use the new technologies and artificial intelligence. [9]

In the field of Artificial Intelligence (AI), towards the end of 2022, Generative Artificial Intelligence (GenAI) has grown exponentially [4]. GenAI is defined as: "a technology that (i) leverages deep learning models to (ii) generate human-like content (e.g., images, words) in response to (iii) complex and varied prompts (e.g., languages, instructions, questions)" p.2 [10]. Within the scope of Generative Pre-trained Transformers (GPT), ChatGPT, is not only able to generate text, videos or images but also engage in a conversation which makes ChatGPT generative AI and conversational AI with enhanced capabilities and usage. [10]

The debut of ChatGPT in November 2022 has reignited a debate within the field of education. [11] UNESCO [12] has recommended the integration of GenAI in education as collaborative tools where students engage in conversation to co-create knowledge. Furthermore, among the numerous advantages of GenAI in education are mentioned timely feedback, assessments, ideation, personalized and adaptive learning and various other aspects where GenAI can be effectively used by both lecturers and learners [1,13,14]. However, the use of GenAI in education is still not clear but has a potential to aid students and lecturers in learning and teaching and achieving positive learning goals. [2] The university of applied sciences (UAS) where this research was conducted has recognized the potential of AI in education and further in society. In alignment with Finland's mission the UAS actively adopts the use of GenAI as a tool in teaching and learning to aid students and lecturers in attaining learning outcomes.

1.2 Perceptions and Risks of Using Generative Artificial Intelligence in Studies

The focus of this study in on the perceptions of GenAI usage and associated risks that come along with studies in HEIs in Finland. Prior research suggests [15,16] that students expressed willingness to adopt new technologies into their studies. Despite this openness for adopting GenAI, it is reported [17] that students need additional training to effectively utilize GenAI tools. Additionally, it is noted that lecturers show insufficient knowledge of GenAI and lack appropriate trainings to gain the necessary competencies [7]. Furthermore, to the technological challenges notable risks are foreseen regarding the ethical use of GenAI, human rights, critical thinking, and biased generated texts.[5,18]

Risk is defined as "the possibility of loss or injury" [19] , while ethics is "a system of moral principles"[20]. This study focuses on the risk perceived by students when using GenAI tools, as the use of AI can have a potential negative impact on their learning outcomes. Ethics are moral values and principles that underlie decisions and actions and guide human behaviour in terms of what is right and wrong. It is important to understand the differences between the concepts of risk and ethics in the use of GenAI in education. However, this study does not focus on the ethical perspective.

Perceived risk is people's intuitive assessment of the hazards to which they are or may be exposed. Risk perception is influenced by individual factors and various social, cultural and contextual factors that influence risk perception [18].

An individual's perceived risk varies according to a number of factors: voluntarily perceived risks are perceived as less dangerous, lack of information about the risk increases its perceived severity, invisible risks are often perceived as riskier, and reliable information from authorities tends to reduce perceived risk. [18]

Additionally, to the obvious risks discussed in this research further hindrances need to be considered when using GenAI. There are many weaknesses in the automated responses provided by GenAI applications that pose risks to learning activities. These include the AI's poor ability to judge the quality of responses, its lack of contextual understanding, or its potential to produce biased responses or discriminate against certain groups based on the data used. Such biased responses could potentially

perpetuate discrimination against groups in society based on gender or ethnicity. This can lead to risks such as increased social discrimination in society. [11,21]

Data privacy and security are concerns when using AI technologies in education [22]. Although GenAI applications assure users that they do not use personal data, they cannot fully guarantee the privacy and security of users' accounts. Therefore, students must be aware of security and privacy issues when using these applications.

All students should have equal access to the GenAI tools. Some of the tools have premium versions with associated costs. Not all students can afford to pay for these tools, which can lead to inequality in the learning process and widen the digital divide between students [22].

2 METHODOLOGY

This research aims to study students' perceptions related to the use of GenAI on course tasks. The research is conducted in an International Business Degree Programme in a University of Applied Sciences in Finland. The respondents are participating in courses from various disciplines related to business. All of these courses included course tasks where students were encouraged to use GenAI tools.

The research follows quantitative research design. This research approach was chosen to collect data in the form of surveys from all the students participating in the courses. A set of two surveys were created based on the literature review. In addition, as preliminary research for survey creation, two focus group discussions were organised to enable the researchers to gain insights on the students' views on the use of GenAI. Furthermore, the research data contains both quantitative and qualitative data as the surveys contained open-ended questions. [23]

The first survey focuses on students' prior experiences using GenAI in their studies. The second survey focuses on the students' views regarding the use of AI-enabled tools in course tasks. Additionally, the need for lecturer's support in using the GenAI was examined. Both surveys were created with Webropol software and distributed to the students via online learning environment Moodle. The first survey was open for a week at the beginning of the courses in late October 2023. The second survey was distributed at the end of each course in mid-December 2023. Both surveys were anonymous, and thus, individual respondent's answers cannot be connected to each other. In total, 129 respondents answered the first survey and 80 respondents the second survey. All questions were set as non-mandatory; thus, the number of responses varies from question to question.

The data was analysed with the IBM SPSS Statistics software. The quantitative methods focus on descriptive statistics. Additionally, the open-ended questions were analysed with qualitative analysis techniques.

3 RESULTS

3.1 Introduction to the respondents

The students of the BBA Degree Programme studied in this research are international. A third (34%) of the respondents are Finnish, a third (31%) are EU citizens and the rest (35%) are non-EU citizens.

The length of the BBA Degree Programme in a UAS in Finland is 3.5 years. The majority (46%) of the respondents are first year students, 23% are second year students and the rest (31%) are in their third or final year.

3.2 The use of generative AI tools in studies

In the first survey, 80% of the students indicated that they had used GenAI tools in their studies earlier. When asked which GenAI tools the respondent have used, almost all respondents mentioned ChatGPT but additionally Microsoft Bing and Grammarly were mentioned several times. Only 11% of the respondents mentioned three or more different GenAI tools.

The GenAI tools were considered useful or very useful by 68% of the respondents. None of the respondents assessed the GenAI tools as useless. Moreover, the GenAI tools were considered simple to use by 71% of the respondents. Only 6% assessed the use of the tools difficult.

In the second survey, conducted at the end of the courses, nearly all (98%) of the respondents had used GenAI tools in their course tasks. The most common use of the GenAI tools was to ask clarifying questions about challenging course topics (76%). Other commonly chosen uses were e.g., creating

ideas related to study themes (48%) and editing their own text to improve it (37%). (Fig. 1.) On average, each respondent has chosen 3 different uses.

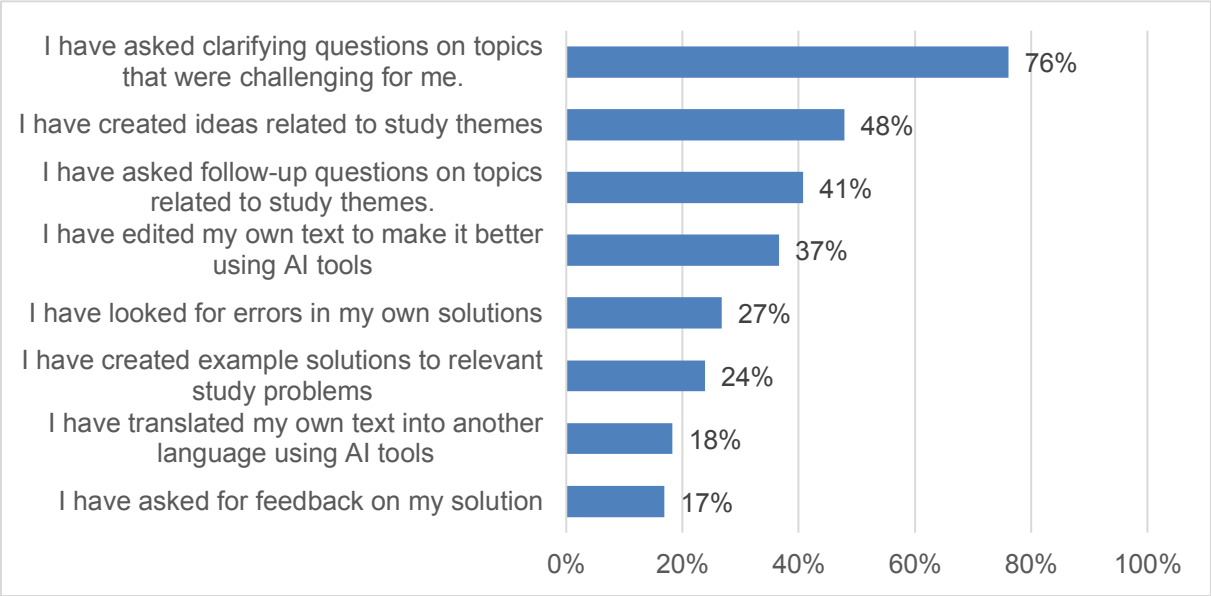

Figure 1. The use of generative AI tools (n=80)

3.3 The risks associated with the use of generative AI tools

The respondents were asked to assess the risks that they recognized in the beginning of the course in the first survey. A similar question was included in the second survey, after having used GenAI tools in the course tasks. Overall, 87% of the respondents in both surveys responded to these open questions. The responses formed two main categories.

In the first category, the respondents indicated that they were concerned about the reliability of the answers provided by the GenAI tool. Many students were worried about plagiarism due to lacking sources as well as receiving fabricated answers and sources. Another typical concern in the category was the trustworthiness and timeliness of the answers. Additionally, the possible lack of context was mentioned in several responses. Most of the students indicated a risk belonging to this category.

Several responses related to the first category indicate that the respondents seemed to expect to get complete and correct answers from the GenAI tools. One respondent commented as follows: “You have to clarify your question in order to get the right answer and also ask follow-up questions only then Chat GPT will give you a specific answer”.

The second category of risks identified from the responses focuses on the extent of using GenAI in course tasks. The respondents indicated that they are concerned about completing assignments extensively with GenAI tools which could lower their learning outcomes and critical thinking skills. Several students were concerned that their creativity will diminish. Some respondents mentioned the concern of deterioration of problem-solving skills when solutions are sought from AI-enabled tools rather than attempting to solve the issues themselves.

In the second survey, the responses were mostly coincided with the first survey, however, there were some new concerns. In the second survey, several students were concerned that by applying AI-enabled tools in course tasks, they would give similar answers to their classmates. Additionally, some respondents had recognised that the answers created by GenAI do not appear as students' work. Additionally, one respondent was concerned that a student using generated text might benefit unfairly if the assessor is not able recognise that, and thus, give higher marks compared to a student that has completed the task independently.

In addition to these main categories, issues related to the data security and privacy were mentioned as well as ethical issues. Notably, two non-EU citizens had not identified any risks in the use of GenAI tools in the course tasks. However, the respondents’ nationality does not appear to be associated with the views on the potential risks.

3.4 Guidelines and lecturers' support needed in the use of GenAI tools

The findings from the first survey state that nearly half of the respondents indicated that they were unaware of the UAS's guidelines regarding the use of GenAI tools. The UAS's guidelines were provided to the students during the courses in which the surveys were conducted. In the second survey, at the end of the course, the majority (73%) of the respondents found these guidelines helpful when completing the course tasks. Notably, almost a third of the respondents did not find the guidelines helpful.

The majority (72%) of the respondents considered that they have received sufficient support from their lecturer in using GenAI during the course. Meanwhile, 9% considered that they did not need any support from their lecturer. However, 19% of the respondents felt that they did not receive enough support.

The respondents were asked to indicate what kind of support they would have needed when using the GenAI tools. There were a variety of issues mentioned. These issues include, for example, information about different GenAI tools (not only ChatGPT), writing the good quality prompts, information on how to refer to GenAI tools and about ethical use of the tools. Overall, several students indicated a need for in-depth discussion about GenAI tools during their studies.

4 CONCLUSIONS

This study presents the students' perceptions of GenAI usage and risks in a higher education institution in Finland. Regarding the students' perspectives and skills, we conclude that mostly students are open to accepting and using new technologies. Studies [15] have reported that students in general are willing to accept and use GenAI in their studies and that GenAI impacts their studies.

Our results showed that students' knowledge and skills in using GenAI are still rather weak, and they wished for more support from their lecturers on how to use GenAI effectively in their studies, for example how to write prompts in ChatGPT. Students' skills and understanding of GenAI varies, which affects the successful use of GenAI in the learning process [16]. However, our results showed that there were large differences in lecturers' abilities to support students. While some students reported receiving excellent assistance, others expressed dissatisfaction. The differences in lecturers' ability to support students indicates that not all lecturers are skilled or confident in using the GenAI tools themselves, let alone support students to maximize their utility.

The results showed that students perceived a risk in the ethical use of GenAI tools. They expressed a need for explicit guidelines and clear instructions on the permissibility to copy and reference GenAI-generated text to avoid plagiarism. Plagiarism in learning tasks is often difficult for lecturers to detect. Without clear guidelines, students may fraudulently produce learning tasks by directly copying answers provided by GenAI, in which case plagiarism may become part of an acceptable way of producing learning tasks [11,21,24]. The rise of AI-assisted plagiarism and threats to academic integrity is a difficult problem in the age of GenAI. [11]

In addition to the problem of plagiarism, Holmes et al. [25] stress that when using AI in teaching, lecturers should ensure fair treatment of all students, provide equal access to AI tools, and respect student autonomy and agency. If lecturers do not recognise or address the risks associated with using AI in education, this can lead to unequal treatment of students and a loss of confidence in using AI to support learning. The adoption of AI should consider its use in culturally appropriate ways to enhance learning and increase AI literacy globally [26,27].

To mitigate the educational risks identified in this paper, higher education institutions should develop appropriate policies and regulations on the use of GenAI and its risks [28]. Also, providing training for advancing the skills in using GenAI tools for lecturers and students, particularly for developing critical digital literacy skills, is necessary for future education [29]. Lecturers should acknowledge and understand how GenAI tools can support students' different learning styles and develop students' cognitive skills without allowing GenAI tools to dictate the learning process. Lecturers need to adopt a holistic approach in their pedagogies and integrate GenAI into their teaching where it supports learning. [22]

In these times of uncertainty, indifference or slow progress in providing additional training can lead to widening of the digital divide between students able and those unable to use GenAI. As Chiu et al.[7] aptly point out, the most knowledgeable and motivated students will always benefit from GenAI. This is because they take responsibility for their own learning, are self-directed and goal-oriented in their learning process.

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