

GENERATIVE ARTIFICIAL INTELLIGENCE FROM THE PERSPECTIVE OF STUDENTS OF THE BUSINESS FACULTY

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Abstract

Generative artificial intelligence is one of the most exciting miracles of the latest technological development. It is raising a lot of discussion among different groups of theorists and people who practically use it. Although we still cannot capture all aspects of this new tool and cannot predict whether it is the step forward, or the disadvantages it brings will prevail, we must accept that it exists and influences many aspects of our lives, including education. This paper discusses the survey results among the students of the master program of the Faculty of Business Administration of the Prague University of Economics and Business on what they think about generative artificial intelligence and how they use it.

Keywords: generative artificial intelligence, information, knowledge,

JEL Code: M10, M19

Introduction

Generative artificial intelligence (GAI) is one of the most exciting developments in information technology. It provides a new perspective for working with knowledge and influences all knowledge-intensive sectors, including education. As such, it is raising much discussion about its future and impact on our lives. Different constituents, from theorists, people who use it and like it, people who use it and do not like it, the general public, and many others, are participating in these discussions. Generative artificial intelligence tools are too new to allow us to capture all their aspects, advantages and disadvantages.

This paper looks at generative artificial intelligence from the perspectives of students of the Faculty of Business Administration at the Prague University of Economics and Business who are studying in the Program Management. The survey objective was to determine what students think about generative artificial intelligence and how they use it in their work with knowledge. The students were asked what they think about GAI, why they use it, for what purposes they use it, what advantages and disadvantages of GAI tools they see, and their personal experience with GAI.

The answers to the questions were analysed using qualitative research methods.

The survey results indicate that students mostly use generative artificial intelligence tools as a supportive tool for knowledge acquisition. In their opinion, the major advantage of generative artificial intelligence tools is the user-friendly interface. They see the central problem of the GAI tools in the quality of answers they provide. Some of the reported personal experiences were very interesting, even curious. The survey at least partly fills the research gap about generative artificial intelligence and its use in knowledge work.

1 Theoretical Background

1.1 Generative Artificial Intelligence

UNESCO World Commission on the Ethics of Scientific Knowledge and Technology (2019, p.3) states that “Advancements in this field (artificial intelligence) are introducing machines with the capacity to learn and to perform cognitive tasks that used to be limited to human beings.” “Generative artificial intelligence (GAI) is a type of AI (artificial intelligence) that generates images, text, videos, and other media in response to inputted prompts“ (Coursera Staff, 2024, What Is Generative AI? Definition, Applications, and Impact). GAI tools “use neural networks to identify patterns in existing data to generate new content“ (Coursera Staff, 2024, How does generative AI work?). “It is an advanced language model (Large Language Models, LLM for short), capable of generating text, images, voice, code, music, etc. in response to user requests expressed in natural language” (Galent et al., 2023, p. 3). GAI “operates based on probabilities, which means that it evaluates the probability (suitability) of words or phrases in a given context. Its output may contain errors, so users need to check the output. Despite this, the technology provides a good simulation of surpassing human capabilities and will continue to evolve and attain ever higher levels of perfection in operation.“ (Galent et al., 2023, p. 3).

There are many GAI tools available at the moment, among others, ChatGPT, Sudowrite, GitHub Copilot, Dall-E2, Humata.ai, Google Bard, and Stable Diffusion (Chan & Hu, 2023; Coursera Staff, 2024). GAI raises positive and negative emotions; enthusiasts see its huge impact, bringing benefits to all spheres of human endeavour, while opponents fear ethical and other damages it may cause to humanity (Flores-Vivar & García-Peñalvo, 2023).

1.2 Generative Artificial Intelligence in Higher Education

“Generative Artificial Intelligence has revolutionized the field of higher education, and sparked debates on the potential of tools such as ChatGPT in teaching, learning and assessment

processes (Galent et al., 2023, p. 1). These tools “offer numerous opportunities but also poses significant challenges. that raise ethical and academic integrity concerns, such as the reliability of information, transparency regarding the sources used, or data privacy and security” (Galent et al., 2023, p. 1). Hence “educational institutions will need to continuously adapt their curriculum due to the rapid development of AI. Generative AI has the potential to change education in several ways” (Țală et al., 2024, p.73).

There is a huge discussion about the benefits and challenges of GAI in education. “Recognising that AI is a tool to enhance learning and not a replacement for human teachers, it is essential to strike a balance between the advantages and disadvantages of AI in the classroom.” (Țală et al., 2024, p.75). “One of the key uses of GenAI in higher education is for enhancing students’ learning experience through its ability to respond to user prompts to generate highly original output” (Chan, & Hu, 2023, p. 2), and can help non-native English speaking students with language issues, helps to generate ideas, analyse data, edit writing (Chan, & Hu, 2023; Țală et al., 2024; Galent et al., 2023) .

In 2023, UNESCO published a guide to ChatGPT and generative artificial intelligence in higher education (Sabzalieva & Valentini, 2023) where they propose how to use GAI in teaching and learning, research, administration and community engagement and address important challenges and ethical implications as academic integrity, lack of regulation, privacy concerns, cognitive bias, gender and diversity, accessibility and commercialisation (Sabzalieva & Valentini, 2023). “All these guidelines have been drawn up to address the ethical and legal challenges posed by using this technology in higher education and in that way minimize its potential risks” (Galent et al., 2023, p. 4).

2. Methodology

This paper aims to discuss the results of the survey among students of the Program Management at the Faculty of Business Administration, Prague University of Economics and Business, on their ideas and experience with generative artificial intelligence. The survey objective was to find out what students think about generative artificial intelligence and why they use it in their work with knowledge. The survey was done in January 2024. The data of the survey were collected in the form of a written questionnaire with open-ended questions. We asked students if they use GAI (all respondents do), why they use it, for which type of tasks, and what advantages and disadvantages GAI has from their perspective. We also asked them to share

their most memorable (interesting, crazy) experiences with GAI. The questions were anonymously answered by 50 respondents, age 22-28. Twenty respondents were female, and 30 respondents were male.

The theoretic background represented by the literature cited in this paper provides the most important ideas of papers collected in the WOS keyword search we did before the empiric survey. We searched the combination of the words "generative artificial intelligence" and "students." The search provided 99 papers. Due to the space limitation, we do not present a full literature review, and we provide only ideas that are most relevant to the topic of our paper.

The data were analysed using thematic content analysis, which allowed us to capture and organise the main ideas of respondents. The analysis started with open coding. It was done sentence-by-sentence because sentence-by-sentence coding allows for the capture of ideas and their context, giving codes clarity (Willig, 2013). We coded all answers of a particular respondent before moving to another respondent to limit the potential researcher bias from coding question by question (expectation of codes based on previous codes identified). Students answered the questions in the Czech language; therefore, it was necessary to translate codes into English. This process did not allow in vivo coding. We then did axial and selective coding to get higher-level categories.

Due to the space limitations, the paper provides only examples of codes to demonstrate how the higher-level categories were developed.

3 AI from the perspective of students – results of the survey

All 50 respondents to our survey reported that they know GAI and use some of its tools.

The reasons why respondents use GAI are summarised in table 1. The codes collected from the questionnaires were organised into six 1st-level categories – want to learn new technological innovations, fast, simple, provides information, combines information into new knowledge and editing text. These 1st-level categories show that respondents are interested in technological development, like GAI tools, as they intensify the work and see it as a valuable tool for knowledge work. For example, respondent A1 wrote, "I am excited about new technology; respondent A10 wrote, " It saves time and explains things simply," and respondent A20 noted, "It helps me to understand what I am learning." Five of 1st first-level categories were organised into second-level categories that show the major reason why respondents use GAI – it intensifies their work and improves work with information and knowledge.

Table 1: Why students use generative GAI

Examples of codes	Category 1 st level	Category 2 nd level
Pity not to use new innovations; curiosity	Want to learn new technological innovations	-
Fast, saves time, speeds up work	Fast	Intensifies work - character of GAI
Simplifies work, easy search	Simple	
search for I; availability of inf. from different resources in one place; definitions	Provides information	Improves work with information and knowledge
helps organise ideas; to help me to understand what I learn; explanation of problems	Combines information into new knowledge	
good for translation; text editing	Editing of text	

Source: The author

The answers to the questions for which type of task respondents use GAI copied answers to the questions about why they use it. Some students answered these two questions as one question; in such case, we used their answers twice and coded them separately for each of the questions. Still, when organizing codes to the higher level, we got 1st level categories fast, simple, provides information, combines information into the new knowledge and editing text that led to two 2nd level categories - work with information and knowledge, and intensifies work.

Respondents were asked what, in their opinion, the major advantages of using GAI are (Table 2). Codes were organised into seven 1st level categories – fast, simple, provides good results, provides information for everyone, availability, entertainment, work with information and knowledge. These develop two second-level categories: GAI is user-friendly, and the type of service is provided. For example, respondent A10 notes, "GAI provides explanation without long search on Internet; it helps and fastens understanding," respondent A17 writes, "It provides opportunities not available in other tools," respondent A23 answers, "Always find a solution and offers proposal," respondent A32 thinks that it is "Fast, provides usable results. It is free of charge, can be used on all equipment and for every activity."

Table 2: Advantages of Generative GAI

Examples of codes	Category 1 st level	Category 2 nd level
Fast search; fast response	Fast	User-friendly
Easy to use; simple	Simple	

understandable inf.; relevant; possibilities not available in other tools;	Provides good results	
possible to adjust to personal needs; wide use; understand requirements;	Provides value for everyone	
accessible, universal use; free of charge free of charge; on all equipment	Availability	
often fun; possible to play;	Entertainment	Type of service provided
for creative tasks; dB similar to the Internet; editing text	Work with inf. and knowledge	

Source: The author

The codes we got from the answer to the question of the disadvantages of GAI tools students see (table 3) were organised into five 1st level categories – inaccurate/incorrect answer, limited resources, lack of creativity, possible misuse, and others. Respondent A1 wrote, "GAI is wrong. It misuses data and teaches us laziness," and respondent A2 wrote, " It has a limited approach to data. It cannot think critically and does not recognise quality and credibility. Answers miss sense." Respondent A9 noted, "It does not want to answer sensitive questions, and it fabricates. It does not say I do not know, and the feedback control is necessary. It does not have the latest data." Respondent A5 wrote, "People will not think themselves." Respondent A34 stressed that "It is not validated, still many people rely on it. It will bring future ethical and security problems," and respondent A37 noted, "Repeats same phrases to one topic and writes lies."

Four of 1st level categories belong to 2nd level category problems with service quality.

Table 3: Disadvantages of GAI

Examples of codes	Category 1 st level	Category 2 nd level
Inaccurate, it is not verified; fabricates	Inaccurate/incorrect answers	Problem with service quality
Limited resources does not have the latest data	Limited resources	
Not creative; cannot answer complex expert questions;	Lack of creativity	
Problem to distinguishing human and machine work; plagiarism	Possible to misuse	

teaches us laziness; people will not think themselves; addictive; ethical and security problems; jobs disappear	Other	-
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Source: The author

The final question was about the respondents' most memorable (interesting, crazy) experience with GAI. Respondent A3 reported, "I persuaded it that it is my brother." Respondent A9 wrote, "It generates better information if I ask it, praise it and say that my career and life depend on it." Respondent A10 reported an interesting experience, "When asked to explain the topic simply, it started to explain it as to the dog with words rrr haf." Respondent A21 was surprised that "It refused to tell the jokes about Americans and Jews but did not have a problem telling them about Russians." A26 noted, "It helped me to improve academic writing, but we had an argument about who the current president of the Czech Republic is." Respondent A36 admitted, "It wrote me a motivation letter for abroad university, and I was accepted." Respondent A36 mentioned the experience of a colleague who "used it to analyse the data collected from the questionnaire and the chat made opposite conclusions than it was correct." Respondent A50 even wrote that "It created the plan for civilisation annihilation."

4 Discussion

Respondents' answers and analyses show that respondents are well aware of the GAI tools and their advantages and disadvantages. They use it but are careful because the GAI answers may need to be more accurate and accurate.

Our survey findings correspond with other research and papers on similar topics. The finding that students know GAI tools, use them and are aware of their advantages and disadvantages is supported by researches by Johnson et al. (2024), Ibrahim et al. (2023), Amoozadeh et al. (2024) and Țală et al. (2024) who came to the same conclusion.

Our respondents mentioned ethical problems with GAI, like academic integrity, reliability of answers, cognitive bias, and problems with diversity. These findings support major concerns listed in the 2023 UNESCO guide (Sabzalieva & Valentini, 2023) and concerns of other authors. For example, Galent et al. (2023, p. 6) stress that GAI "raises important ethical dilemmas about the reliability of information, transparency of the sources used, data privacy, and authorship, as well as the security, inclusion, diversity, and physical and mental well-being of users." Farrelly and Baker (2023, p. 3) write that GAI models are "fueling significant concerns about how these tools may be used to 'cheat' in academic programming to circumvent

academic norms around originality of thought and written text that are foundational to most understandings.“

Our findings support the conclusion that “generative artificial intelligence (GAI) shocked the world with its unprecedented ability and raised significant tensions in the education field“ (Liang et al., 2023, p. 01). But because “widely used among students ...attempts to ban the use of these technologies or change assessments to be entirely exam-based is unrealistic and not beneficial to students, who will likely need to use these technologies in their careers upon leaving university. Instead, universities need to help students develop their skills to use these technologies in a productive and effective manner“ (Johnson et al., 2024, p. 18).

Conclusion

Generative artificial intelligence and its influence on education represent a "hot" topic of our days and, as such, raises a lot of questions and discussions. Though one of the first attempts to capture the ideas of students on GAI, the presented survey has limits. The major limit of our survey is the number of respondents (50 respondents) and the fact that they belonged to one program at one university. Another limit concerns the fact that we asked respondents what they think and what their experience with GAI is, but did not inquire why they think so and why their experience developed as it developed; thus, the survey is descriptive. These limits cause that the survey is strongly related to the context of our respondents and even though it provides valuable insight into the problematic of GAI it results cannot be generalised and the topic needs future research to fill the knowledge gap about GAI in education. There are many potential directions of future research; for example, it would be interesting to research for which tasks students use the GAI in more detail, how precisely they formulate their questions and how this fact influences the GAI answer, or how ethical aspects of GAI exploitation develop in the field of education.

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