



Thoughts on the AI Act of the EU, the Trustfulness of AI and its Applicability in Management Methods Courses in Higher Education

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ABSTRACT: The application of artificial intelligence (AI) in higher education is now an established but still not sufficiently transparent area. The European Union has only recently adopted the Regulation (EU) 2024/1689 Laying Down Harmonised Rules on Artificial Intelligence (AI Act), which already raises questions about its application. We have already examined the role of artificial intelligence in the teaching of a communication science subject. In our current study, we also address the AI-related context of teaching Management Methods, as a typical Management subject at the University of Dunaújváros, Hungary. This research focuses rather on the above-mentioned topics and examines the applicability of AI in a less algorithmizable scientific field. The students participating in the study are Communication and Media, also Business Administration majors.

Keywords: AI, (EU) 2024/1689, higher education, University of Dunaújváros, research.

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1. Introduction

The AI Act (Regulation (EU) 2024/1689 laying down harmonised rules on artificial intelligence) is the first-ever comprehensive legal framework on AI worldwide. The European Union's 2024 regulation on AI made it clear that the aim of EU codification is to filter out risks in order to allow the use of AI to spread across Europe. The aim of the act is evidently to foster trustworthy AI in Europe. Nowadays, there are continuous, significant changes that do not spare organizations. Amid the organizational effects of robotics, artificial intelligence (hereinafter referred to as: AI), digitalization, pandemics, and inflation, however, the human factor must remain in focus (Jóźwiak & Falus, 2022: 125-126). In order to achieve future goals in the face of increasing pressure, it is essential to manage the growing effects of innovative solutions in higher education as well.

As one of the achievements of the development of AI, OpenAI ChatGPT is considered a defining milestone. News about its application and potential applicability appears daily, and it is often difficult to decide how much of it is actually realistic and how much of it is imagination or marketing considerations (Falus et al, 2022: 20-32). This picture is further colored by news about competitors' developments. Every digital technology company wants to get its share of the market share of AI applications. In the field of higher education, application experiences are also increasing, despite the fact that these are mostly in the experimental phase.

In a previous paper (Kókuti, 2024) we examined the role of AI in the education of a subject in the field of communication science. In the current study, we also address the AI-related connections of the higher education of a typical management subject at the University of Dunaújváros, Hungary. This research, therefore, focuses on the above-mentioned topics and explores the applicability of AI in a less

algorithmizable field of science. For this, we rely on a study conducted with the participation of university students, in which the focus is, or could be, the role of AI in the development of management methods and organizational behavior education and teaching processes. The students involved in the study participate in undergraduate university education in the fields of Communication and Media Science, as well as Business Administration.[5]

2. Theoretical Background

2.1. A brief summary on the development of ChatGPT

The emergence of AI in the modern sense can only be attributed to the second half of the last century, but its development has accelerated in recent decades (Russell– Norvig, 2005). ChatGPT was also created as a result of the development of machine learning, natural language processing and other modern technologies. In fact, it is a special chatbot developed by the OpenAI AI research laboratory. Early research in the development of AI was about scientists expecting machines to model intelligence. The basic algorithms led to future developments. In the later period, which meant the 1980s and 1990s, machine learning techniques and neural networks were in focus. Only from the 2010s, due to developments in the field of language processing, more complex processing became possible. Big data sets and the ability to deep learning also contributed to this. GPT (Generative Pre-trained Transformer) is capable of generating texts and answering questions (Gokul et al, 2024).

Its appearance was prompted by the desire that OpenAI has been serving humanity since 2015, to make AI such that its responses and communication style are helpful and direct, and therefore more acceptable. Through continuous development, different versions have been released. In 2020 the GPT-3 version, which was trained on trillions of words from the Internet, appeared (Journal of International Affairs, 2022). In 2022, version 4 was made available to users in some rare languages as Hungarian as well. Since then, its popularity in our country has remained unbroken, which is mainly due to the fact that the chatbox is able to continuously communicate with users interactively.

The development process has also brought such changes in the spheres of society and the economy that it has become necessary to define it. The European Union has done this with a clear approach, according to which AI means human-like abilities of machines, such as reasoning, learning, planning and creativity (European Parliament, 2021).

2.2. Version change and competitors

The evolution of ChatGPT is not over. There are several key differences between 3.5 and the current version (4.0), which can be summarized as follows (Sharma & Sharma, 2024):

2.2.1. Improved language understanding: It is able to interpret questions and contexts even more accurately, so its answers can be more relevant.

2.2.2. Richer knowledge: Its knowledge base is constantly expanding, so it has more up-to-date information about the latest events and trends. It is important to note that the “training” reflects the state of October 2023, so it can process the latest information and news up to that date.

2.2.3. Improved creativity: In creative tasks (writing, ideas), it is even more able to give usable answers.

2.2.4. More specific dialogue management: During the dialogue, it can pay increased attention to the dynamics of the conversation, so it can adapt to the needs and style of the questioner.

According to Sam Altman, CEO of OpenAI, “the devastatingly strong GPT-4 will soon be remembered as weak. Version 4.5 or 5 is coming” (Zeff, 2024).

The increased interest is also shown by the magnitude of the US budget for AI developments, e.g. by financing the project called Stargate (Bloomberg, 2025). Competitors are not lagging behind either. Various companies are announcing the availability of Gemini, Siri, Copilot, Aria, and even AI Office packages. The competition will be judged from the users’ perspective by the experiences of which one is

faster in operation or which one provides a more usable answer. The issues of market price and free access are also decisive factors in the development process. Everyone develops while also wanting a return on these investments. As a result, there are many costs, e.g. for developing server parks. Although investments reaching the order of a hundred billion dollars exponentially increase the performance of the systems, their unpopular energy hunger, which goes against sustainability trends, has not been published. AI requires enormous computing capacity, which has hindered its development for a long time. This demand also induces a large energy demand. Therefore, operation also has an ecological footprint, which is usually not discussed (Wang et al, 2023).

However, these companies are not creating AI to assume social responsibility. OpenAI's founding creed was about this, but here economic interest will override social. It seems that the depth of useful answers increasingly depends only on computing capacity, which is developing exponentially (Keleti, 2025).

Recently, the Chinese-developed DeepSeek was released, which is available with free registration. Surprisingly, it is open source, which could be a significant milestone in terms of trust. Furthermore, you can download the whole thing to your own computer (there are different sized versions), but you can also communicate with its servers, as in the case of ChatGPT. When used in local mode, it can even comply with GDPR (Fraiori, 2025).

3. On Regulation (EU) 2024/1689

The Regulation (EU) 2024/1689 laying down harmonised rules on artificial intelligence (AI Act) is the first-ever comprehensive legal framework on AI worldwide. The aim of the rules is to foster “trustworthy AI” in Europe. The AI Act sets out clear risk-based rules for AI developers and users for specific uses of AI. The AI Act includes the AI Innovation Package, the AI Factory and the Coordinated Plan on AI. Together, these measures will ensure safety, fundamental rights and human-centric AI, and strengthen the uptake, investment and innovation in AI across the EU (European Commission, AI Act). The main provisions of the proposed rules are: to prohibit AI practices that pose unacceptable risks; to define a list of high-risk applications; to clarify the requirements for AI systems used for high-risk applications; to formulate specific obligations for users and providers of high-risk AI applications; and finally to impose a conformity assessment obligation before a given AI system is deployed or placed on the market (Madiaga, 2024).

The AI Act ensures that Europeans can trust what AI has to offer. While existing legislation provides some protection, it is not sufficient to address the specific challenges that AI systems may pose. Any AI system that may threaten to the safety, livelihoods and rights of people is prohibited. The AI law categorically prohibits the following practices: harmful AI-based manipulation and deception; harmful AI-based exploitation of vulnerabilities; and social scoring; non-targeted scraping of internet or CCTV footage to create or augment facial recognition databases; emotion recognition in the workplace and in educational institutions; biometric categorisation to infer certain protected characteristics; and real-time remote biometric identification for law enforcement purposes in publicly accessible locations (Cancela-Outeda, 2024). Education at university level has also been included among the AI systems identified as high-risk, thus affecting access to higher education and professional training, so specifically in the evaluation processes (AI Act, 2024).

4. Conditions for the Application of AI in Higher Education

The Social Science Research Centre and Corvinus University examined social attitudes towards AI. The research also covered in detail the usefulness and fears people associate with the increasingly emerging AI solutions in everyday life. One of the main findings of the research is that the usefulness and sense of danger associated with individual AI technologies vary greatly (Herke & Vicsek, 2022).

Apart from the detailed results, the 3rd segment of the research is closest to the focus of our study, according to which the application in the field of higher education was characterized by low utility and

high fear, taking into account the stipulation that here the researchers focused mostly on systems that monitor students. One of the experimental elements of the research also examined metaphors related to artificial intelligence. This meant that the respondents had to compare artificial intelligence to a selectable concept. In identifying the possible answers, the majority of the respondents thought of robots and computers (Bokor et al, 2022). This also entails significant assumptions regarding the field of higher education.

A further survey of university students' attitudes towards robots, AI and their effects on employment also revealed their ideas and expectations for the future. AI is socially and economically useful, and according to student attitudes, its applications will radically transform educational processes, within which the effects will fundamentally affect both teacher-student and student-student relationships (Kőkuti, 2022). Lack of experience does not necessarily constitute an obstacle to the application of technology (Yüzbaşıoğlu, 2020).

Although many in the field of education have drawn attention to the risks of using AI (Dietz 2020; Bowman 2022; Kappel 2023), experiences are still growing. Despite the opportunities, schools and universities are still slow to adopt various solutions. In the background, the lack of trust in the educational applicability of AI is more of a deterrent than a lack of resources (Buda, 2024).

AI can be used in higher education in several ways, such as taking over professors' repetitive tasks (administration and assessment); accurately tracking student progress; personalizing learning, as educators cannot provide individual learning experiences in the current system; and making education more accessible through AI solutions, tools, and global classrooms (Mundra & Kataria, 2024: 134-138). Teachers are often afraid of using AI, which leads to their prohibition of its use among students. Nowadays, some universities have completely banned the use of ChatGPT, while others are urging its fullest use (Verma, 2023).

Risks should also be mentioned regarding the use of AI in higher education: it can endanger the teachers' trust in students and the students' belief in the meaningfulness of learning, and retrograde educational methodological solutions may appear in order to prevent cheating (Buda, 2024). In addition to teaching the basic elements, AI programs can help students to progress, and can also immediately answer their questions and provide regular feedback. Today's chatbots are already models of AI teachers (Tölgyessi, 2023).

In a study exploring openness to collaboration with AI and related narratives through concrete and practical situational questions, students had to imagine the following situations: mathematics, foreign language, and Hungarian literature classes are taught by a computer algorithm. A computer or "robot" speaks to them in a foreign language. The student picks up and asks for help and advice from AI if they get stuck in their academic matters. In the case of mathematics classes, 24.7% of respondents can imagine that a computer algorithm is teaching the class, with a similar magnitude, 25.3% of participants indicating that it is difficult to imagine this (Bokor, 2023). Lack of experience does not necessarily constitute an obstacle to the application of technology (Yüzbaşıoğlu, 2020).

5. The Method

5.1. Briefly about a preventive, preparatory examination

In our previous study (Kőkuti, 2024), within the framework of the Business Communication course, students were given a task that required them to prepare an interview related to communication skill development using ChatGPT. This meant that the interview had to be conducted with AI. The instructions intentionally did not include interview questions the only restriction was that they had to investigate how AI could help them in the success of business communication and in the development of business communication skills. The results of the student assignments have shown that AI is already capable of participating in business communication, and increasingly advanced applications are emerging in this area. It is capable of linguistic analysis and interpretation, so it can even interpret and respond to text messages, emails and documents. These routine tasks can already be automated with its help, such as

responding to emails and messages when they arrive, communicating with customers, managing and analyzing data, and tracking tasks and deadlines. During the experiment, we found that AI still struggles with limitations in interpreting human language and communication, so the responded messages can sometimes contain misinterpretations or misunderstandings, which can be harmful in business communication. It is also important to know that it is not able to manage communication relationships in a human way, i.e. it lacks the ability to take into account emotions, context and cultural differences, which can be crucial in business communication. Therefore, the application of AI in this way still produces compromise solutions, but the student tasks highlighted the advantages and disadvantages of its applicability.

5.2. Study involving students

Inspired by the results of the previous study and the interest shown among students, we decided to conduct another study. In doing so, we chose a field of science in which AI has, in principle, “weak” capabilities. The primary goal of studying organizational behavior and organizational psychology is to familiarize students with the theories, models, and methods that constitute the behavioral foundation of managerial work – these can be considered a kind of “toolkit” of managerial work. (Bakacsi, 2015). The study was particularly interesting because this knowledge is less algorithmizable. The essential elements of the research covering management methods were the following. The students had to process topics related to management methods. The task consisted of 3 parts for each of the 12 topics. They had to “test” ChatGPT by asking 10 questions, i.e., they had to reveal what its subject knowledge was. After that, they also had to find out, using 10 questions, what AI could be used for in the given topic if we wanted to use its help in a real organizational situation. After all this, the students had to write a short essay about their opinions and experiences based on the answers to the 20 questions. The participants in the study were a mix of BA students studying business and management, as well as communication and media studies. The instructions deliberately did not contain many specifics in order for the students to have to look up their study materials in order to prepare the interview.

The uniqueness of the “interviews” conducted was again provided by the fact that they did not meet the criteria of field research in the classical sense at all (Babbie, 2020). Although they were different interviews, the subject of the interview was the same, if this can be interpreted at all in this qualitative research constellation. The task therefore consisted of 3 parts. The topics were as follows: individual in the organization; learning; decision and problem solving; motivation with a focus on content theories and with a focus on process theories as well; group in the organization; group decision; communication in the organization; conflict and power in the organization; organizational culture; and organizational change management tasks. The focus of the study was on the following: the subject’s knowledge of the topic, quasi-examined on the topic based on the literature. It was also important to find out what AI could be used for in this topic area during the collaboration. In the case of the first two questions, they simply asked questions. However, the third question could be answered by writing a short essay in which they had to explain what quality work ChatGPT did within the framework of the collaboration, i.e. what experiences and opinions the student had in this regard.

6. Results of the Student Interviews

Unlike the previous study, all students used the personal pronoun (singular, second person = you) when asking the question. We evaluated this direct address as an indicator of the initial phase of user uncertainty being overblown. The entire group of students conducted a structured interview with predefined questions. The new version of ChatGPT is particularly capable of handling dialogues dynamically and possibly even directing the topic. This opportunity was only rarely used by the students.

The chatbot gave similar answers to different questions in several cases. An important step forward is that the students dared to ask back in these cases, as a result of which ChatGPT explained and then corrected. In some cases, this also gave the students momentum to complete the task, as they considered it “particularly exciting to put the interviewee in an uncomfortable position”. He doesn’t always do the right thing when it comes to computational tasks. This can even be influenced by the way he asks

questions. He sees people as being too positive about being open to collaborating with him.

Based on our previous research results, we believe that he overestimated this. In another large-scale student survey conducted in the same year as this study, the partial results of the 5-point Likert scale questionnaire were as follows (1: Not at all important and 5: Very important). In the case of the research conducted on the social impact of AI, 756 of our main students stated the following (average values): the barrier to the introduction of AI is the resistance of the people involved 3.12; AI does not replace humans, but those who do not use it may be at a disadvantage 3.56; built-in AI makes robots capable of performing the most diverse tasks in private life. 2.78. Based on the results of the attitude survey, it appears that the students' tendency to cooperate with AI is more divided.

If the questions related to management methods were about specific help, he manipulated the answers given "in a helpful manner". The students felt as if he were answering by leafing through a book, mostly correctly. So, "textbook-like" answers are common for the first 10 questions. It is a general experience that he "does not close" the answer. It is as if he is working in a search engine. Overall, his lexical knowledge is of a high standard, only a few small interpretation problems are disturbing. The students, however, also noticed that there are times when he actually just rephrases the question as an extended answer. "It's tricky," said one of the students. In some cases, it can be stated that he would already be able to participate in the "Management" tasks, e.g. developing a performance evaluation criteria system.

Routine tasks can already be automated with its help. "He thinks" it could play a big role in employee training. However, in the case of clarifying questions, it turns out that he specifically meant organizational tasks. Through specific training tasks, he usually suggests this, e.g. organizing time for training. According to the students, you have to ask precisely because you tend to "mess around".

The following results were obtained for the 3-part student tasks. The grade given to ChatGPT's performance: compromise. The reasons for this are as follows. In the first part, it is strong, for which they would recommend a mark when taking the AI exam. They believe that this is a particularly important result in the history of chatbot development, although they think that this is due to the bookish approaches that can be seen in the answers. In the second part, they categorically assessed it as "stupid" and accordingly it would only deserve an average. To paraphrase the student's formulation: it hallucinates, but if it is caught, it tries to clarify and sometimes succeeds. "ChatGPT will not save the world by itself. ChatGPT hallucinates and lies. It needs to be made smart, and our research is about how to make it smarter." (Érdi-Krausz, 2024)

While performing the student tasks, they listed the various elements of group dynamics and convinced each other, and came to the conclusion that, evaluating the two task parts together, the use of ChatGPT in this direction is a compromise, but overall it meets the good standard. However, the level of knowledge of AI is not the most important thing for us; much more important is the process, effectiveness and communication of students with AI, which was characterized by the following. The initial reluctance that had occurred in previous assignments was not typical of this special assignment. The form of assessment that was truly appealing to the students was one in which they hardly had to write at all. Despite the fact that the specific method was not specified, they nevertheless proceeded in a similar manner: they formulated questions based on information from the Moodle system (which is used in higher education in Hungary for uploading course materials, writing digital tests, evaluation, correspondence, etc.); the questions required understanding the material (they read the digital course material several times); the answers were compared with the course material. During the stages of the above process, the course material was repeated several times.

After completing the tasks, we discussed the results in the practical session, during which it became clear that they had completed an experience-based task (the challenge of "making the chatbot sweat" acted as motivation). As a result, they did not consider it a dry learning process or a mandatory one. The result of the process is best expressed in the following student quote: "By the time we completed the task, we realized that we had mastered the course material." This only became apparent to them afterwards, when I reminded them of this thought. At the end of the semester, the result of the written exams was: 87%

completion, far surpassing the grades of the previous semesters.

7. Summary

In a stimulus-rich environment, by which we mean our modern world determined by the internet, digitalization and AI, it is necessary to try to make higher education more colorful, and this is also a teacher's challenge. Since several studies have found that students of our time are less and less interested in processing read literature and the concentration interval has shrunk by several thousandths in two generations, the solution is to transform learning motivation (H. Tomesz 2019: 58). Here, our students demonstrated an experiential learning process and its success. This was clearly reflected in the effectiveness of the papers.

With the advent of advanced AI, robots and other digital technologies are increasingly capable of answering complex questions and providing guidance to users in higher education. In fact, AI-driven platforms such as chatbots and virtual assistants are already being used in many areas of education to help students and teachers resolve their questions and doubts. Our study also demonstrated that formulating the right prompts also requires a new competency.

In addition, robots and other forms of AI can potentially provide advantages that human teachers cannot. For example, they can work around the clock and provide consistent answers to the same questions, eliminating the variability and subjectivity that human professors experience. They also use large amounts of data and advanced algorithms to personalize their responses to the needs and learning styles of each individual.

AI itself claims that, overall, human professors can still play a vital role in higher education, yet it is not correct to say that AI systems cannot provide a similar level of guidance and support. As AI continues to develop, it is likely that technology will increasingly be used to supplement and enhance human lecturing, if not to the point of complete replacement (ChatGPT, 2024). Whatever happens in the future, however, appropriate and clear legal regulation that keeps pace with technical developments is essential.

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