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Research article

Can GenAI Communicate? University Students' Views on Generative Language and Image Models

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Abstract

The paper reviews the possibilities of human-GenAI communication based on classical communication paradigms. It then investigates the attitude of university students towards GenAI by interviewing engineering and teacher training students using an online questionnaire. The responses show that 40% of the teacher training students attribute intent to GenAI, one third fear that it will take away their work, while they also responded in the majority, that there are human-specific activities, such as the arts or communicating God's word, that AI cannot convey. Engineering students are much less afraid that Gen AI will take away their work, they can look at GenAI with a more user-centric attitude. They consider music to be algorithmizable, they think therefore can be mediated by AI or a robot. Also a quarter of them acknowledge that in the interaction between humans and AI, the human is the ethical regulator who should monitor the machine's actions.

Keywords:
GenAi, communication paradigms, attitudes toward GenAi

1. Introduction

Today, artificial intelligence defines information processes and the information economy. There is hardly any area of life that has not been infiltrated by artificial intelligence. The field of education cannot shut itself off from these novel information processes; on the contrary, it must prepare learners and students to understand and ethically use artificial intelligence. In the information society, where information is a resource, representatives of technical sciences play a significant role in information processes: the production, processing, and application of information. They are the main experts of information-driven technology, as well as the primary developers and implementors of information processes. Teachers and teacher candidates are acquiring knowledge in order to be able train students to efficiently use artificial intelligence applications. This current research investigates how university students majoring in technical fields and teacher training relate to generative models. For students studying in technical fields and teacher training to be shapers of information processes and supporters of information literacy, they must have a coherent and realistic understanding of generative artificial intelligence models alongside their theoretical and practical knowledge. The current study seeks to provide answers to the question posed, based on the results of a questionnaire survey.

2. Theoretical foundation

2.1.Generative AI

"Artificial intelligence (AI) systems are software (and possibly also hardware) systems designed by humans that, given a complex goal, act in the physical or digital dimension by perceiving their environment through data acquisition, interpreting the collected structured or unstructured data, reasoning on the knowledge, or processing the information, derived from this data and deciding the best action(s) to take to achieve the given goal. AI systems can adapt their behaviour by analysing how the environment is affected by their previous actions" (High-Level Expert Group on Artificial Intelligence, cited by Rajki et al., 2024, p. 3).

Large Language Models (LLMs) are artificial intelligence systems trained on significant amounts of data, which, by applying deep learning in their architecture, are capable of performing a wide range of language tasks with high accuracy (Bottyán, 2025:85). LLMs, a branch of artificial intelligence, can understand and generate human language based on vast amounts of data. Generative AI uses advanced machine learning techniques to analyze large datasets and create new content based on the context, style, structure, and tone of the original data. The generated content- whether text, images, code, or even music- is often indistinguishable from content created by humans. Generative AI models must be trained on

data: texts, images, and videos form the basis of their learning.

The most typical applications of generative AI are the following:

Human-like text generation: they can create articles, stories, and social media posts, help summarize long documents, and generate code snippets for developers, e.g. CHAT GPT.

Image Generation: they can create unique images from text prompts, allowing users to produce artworks or designs, e.g. DALL-E.

Audio Generation: they can compose original music in various genres, assisting musicians in creating new pieces, film scores, and soundscapes.

Video Creation: generative AI can assist in video production by suggesting edits, adding transitions, or even generating new footage, enabling fast content creation. https://www.microsoft.com/hu-hu/ai/ai-101/how-does-generative-ai-work

2.2. Communication with Generative AI

In the traditional sense, communication involves concepts such as social relationships, interaction, the creation of meaning, and community. The messages we formulate in our relationships shape us and create a shared and subjective reality within which we operate and act. It is through communication within this social network that we gain access to information.

Among the traditional concepts associated with communication, community is the one most challenged in the interactions with generative language models: it is not possible to form a true community with generative models. In everyday terms, communication is understood as an interaction between two (or more) parties, characterized by intentional information exchange that influences the knowledge, emotions, or behavior of the other party (Andok & Szilcz, 2022). Based on this everyday approach, even subhuman entities can be considered participants in communication. Thus, the interaction between a human and a machine can be considered communication, as users can form a kind of connection with the machine (seeing it as a partner) and can acquire knowledge that may influence their behavior. In essence, in the human-machine relationship, generative AI facilitates the transmission of information through communication: the user provides a prompt, and the AI executes the requested task, or, at times, refines the prompt. “A prompt is a textual instruction or question provided by a user to an AI system or tool, in order to generate some kind of response or content.” https://justbeedigital.hu/mi-az-a-prompt/

Since generative AI responds readily and “strives” to maintain interaction, for the average user it evokes the experience of human-to-human interaction. Generative AI models are thus capable of imitating or creating interaction- one of the most specifically human characteristics- using linguistic and visual tools.

To understand how the average user perceives generative AI, let us examine human-machine communication through the lens of various communication paradigms.

2.3. Communication as a Transaction

Early communication models viewed communication as a one-time act- simple transmission of information between a sender and a receiver. In this view, the key concept became transmission, and the act of communication primarily emphasized the activity of the sender, whose aim was to convey information to the receiver (Hartley, 1928; Bell, 1979:163–211). These models refer to the unit of social interaction as a transaction, which consists of a transactional stimulus and a transactional response (Szőke-Milinte, 2013).

Theories focus on transmission and the planning of the “path” of transmission, so that information can travel from the sender to the receiver (Forgó, 2010). In relation to GenAI, the transaction process takes on a unique meaning, since GenAI does not initiate communication on its own-it does not intend to convey any information. The first step is made by the receiver, the user, who prompts the GenAI to communicate through a question or command. Thus, the classical transactional model is reversed: GenAI only transmits information when prompted or instructed, when a specific question is formulated. In communication with GenAI, the accuracy of interpretation becomes particularly important: the user only receives a correct answer if their question, instruction, or prompt contains the necessary information to guide the GenAI’s response within the appropriate thematic framework.

Roman Jakobson’s linguistic model identifies the essential components of effective communication as the sender, receiver, message, code, channel, and context-though it does not include feedback. One of the key strengths of this model is that it defines the basic functions of verbal communication:

the emotive function (expresses the sender's attitude toward what is being communicated), the conative function (directed at the receiver, includes commands or requests), the phatic function (focused on contact, starting and maintaining communication, maintaining the communication channel), the metalingual function (checks whether the participants understand each other-clarifies the code), the poetic function (focuses on the way the message is communicated), and the referential or informative function (focuses on the content of the message and is dominant in many communication situations where the goal is knowledge transmission) (Jakobson, 1969). In communication with GenAI, the emotive, and conative functions cannot be interpreted as genuinely present on the GenAI's side. The poetic function only appears if the user explicitly instructs the GenAI to simulate it. This is due to the fact that generative AI is not designed to express emotional attitudes toward the topic, issue commands or requests to the user, or create messages for aesthetic appreciation (e.g., generated images). The same cannot be said about the user: in many cases, they provide rewrites or re-prompts related to the code or its quality (the prompt), or reflect verbally on the quality of the output. GenAI demonstrates competent use of certain communication functions- particularly the phatic (it apologizes, it is polite, kind, and cooperative), the metalingual (it paraphrases the prompt into bullet points to ensure that the request is executed correctly), and the referential function (it continuously reveals and re-reveals relevant information). GenAI's politeness and "patient" responsiveness often mislead users, who may assume that the GenAI's behavior reflects a genuinely positive attitude. However, these features are algorithmically programmed and are not the result of conscious decisions, as in the case of human users. Therefore, they do not qualify as attitudes but rather as behaviors. GenAI is incapable of expressing an attitude toward the content of communication. For instance, when a user- angry about incorrect information- said: "Shame on you!", the GenAI simply "froze".

A key theory within the transactional communication paradigm is Eric Berne's theory (Berne, 1984), which conceptualizes personality in terms of ego states, and analyzes communication as transactions between these ego states. Berne was concerned with identifying which ego states triggered the transactional stimulus and which ego states generated the transactional response.

The central concept in his theory is the game, which he defines as a series of transactions following a pre-planned script. This script is always designed by the sender with a hidden goal in mind, and the sender takes care to keep this goal concealed until the end of the game in order to ensure its success. In the light of this theory, GenAI only communicates from the Adult ego state, since it is programmed to do so. As a result, it does not argue passionately, does not take offense, and does not talk back-it is consistently very polite.

There are certain user experiences in which an GenAI response is interpreted as if it carries intent: it tries to avoid answering, does not wish to contradict, or is hiding the fact that it is hallucinating, etc. However, the attribution of intent comes from the user, it is not an inherent characteristic of GenAI.

In the context of the transactional perspective, human–GenAI communication can be planned, organized, scheduled, predicted, and regulated. The user must thoroughly develop the skill of prompting in order to optimally extract the information held by the AI and to use the GenAI to achieve their own goals. Moreover, the user must be clearly aware of their objectives: what information they need and why they need it. In a series of human–GenAI transactions, learning can be interpreted as a form of conditioning: based on a stimulus and the corresponding response, the user progresses step by step toward the desired information. Information is converted into knowledge through the user's analysis and synthesis.

In their study, Martinez et al. (2024) point out the pedagogical problem that follows from the transactional model. The transactional model of communication defines the model of learning and shapes the response of teachers and institutions to GenAI. In the educational application of the transactional communication paradigm, contradictions arise when an institution seeks to take advantage of GenAI in teaching and learning, but maintains the use of organisation and tools based on the transactional paradigm. This disrupts the organisational structure, culture and tools of the school, as well as the practice of teachers, and creates tensions within the institution. Institutions need to recognise that the use of GenAI in education has greater systemic implications for pedagogy than previous generations of learning technology. Schools need to decide how far they will adhere to the transactional model of education in the face of the AI-transformed reality of teaching and learning. The authors of the study do not investigate

the attitude of pupils and university students towards GenAI.

2.4. Communication as Interaction

The concept of interaction almost necessarily implies mutual influence and an appropriate response. Beside the functioning of communication channels, interaction also includes all kind of action-based manifestations, which GenAI currently does not possess. The term interactive communication comes from Latin and denotes mutual influence or exchange of information. It refers to a communicative situation involving two or more participants, where each has the opportunity to send messages, perceive those coming from others, and respond to them. Compared to human interactions, human–GenAI interactions have limited signal perception, they are restricted to written channels and cannot utilize or interpret non-verbal communication effectively.

Interaction can be interpersonal or between humans and machines (computers) (Sándor Forgó). The parties involved in the interaction mutually interpret each other's behavior and respond accordingly. In the case of AI, the interpretation of the user's behavior is limited to written linguistic codes, so GenAI responses often become appropriate only after multiple interactions. Therefore, in freely chosen communication situations, the AI-user interaction is not economical. AI responses are determined by a finite number of algorithms. However, we still perceive GenAI responses as personalized due to the semiotic aspects of communication: it addresses us directly, it is polite, and takes advantage of our desire to feel important to someone.

Our everyday communication and much of our behavior are guided by interactions and expectations. These interactions are influenced by our self-image and the image we form of others (impression, prejudice, reputation). GenAI cannot form a true image of either itself or the other party: its self-image is determined by its algorithms. The image it forms of the user is also not genuine: it has no real interest in the other, so the actual identity of the user is irrelevant to GenAI.

Quality also plays an important role in communication as the individual utilizes this information as well. The following questions arise: to what extent are we capable of utilizing the knowledge gained from communication with GenAI? Are there any regulations? What is the ratio of useful to useless information? What does receiving useful information depend on? Does it depend on the prompts? Another question that emerges: do we truly need the information that GenAI shares with us?

Feedback plays a particularly important role in the interaction model of communication as communication partners harmonize their actions according to it. In interpersonal communication, we constantly evaluate messages with our entire body – these reactions carry weight and significance. AI, however, is not capable of this. Its feedback is generated based on algorithms and probabilistic methods; it is not truly personalized; it only appears to be. AI does not confront; it accepts corrections and refinements even if the correction is actually incorrect. Paul Grice, in his cooperative principle, formulated the maxims of quantity, quality, manner, and relevance. The maxims 'do not say what you believe to be false' and 'do not say that for which you lack adequate evidence' are often violated by AI, as it hallucinates and communicates false information (Szőke-Milinte, 2013). Relevance is also not necessarily one of its strengths, as it primarily draws from the most easily accessible sources. In terms of quantity and manner – that is, how it presents information and the amount it retrieves – GenAI communication tends to align more with the cooperative principles.

According to the interaction models of communication, participants in communication work towards achieving a common goal, and while striving to reach that goal, they create messages and meanings-that is, meaning-making depends on the parties involved in the communication and is created during the interaction (Forgó, 2010; Griffin, 2003). In communication with AI, the user cannot be certain that the AI has a goal, and if it does, whether it shares the same goal as the user. Experience suggests the opposite: AI may avoid completing the task requested or may perform it in the simplest possible way, which might be less optimal for the user.

Mead's theory holds a prominent place among interactional theories. According to him, meaning arises from social interaction between people (Mead, 1973). The Self emerges from the perceptions of others. We observe ourselves from the outside, as others see us (not through self-observation), which he calls the 'looking-glass self.' In his interpretation, the true function of communication is the formation of the self-image. Thus, Self emerges from social interactions (Mead, 1973). In interaction with AI, a joint meaning-making between AI and the user can also be observed – that is, symbolic interaction occurs, and they arrive at some shared meaning. However, AI

communication does not contribute to the user's self-image formation in the same way as human interactions do, since the user does not know how the AI 'views' them, if it is interested in them at all. Presumably, it isn't. Therefore, it is not worthwhile for the user to try to take the AI's perspective.

A study in higher education investigated the nature of dialogue as an interactive form of communication in interpersonal and human–GenAI situations (Song et al., 2025). The study explores the effectiveness of chatbots empowered by generative artificial intelligence (GAI) in assisting university students' creative problem-solving (CPS). They used quasi-experiments to compare the performance of dialogue dynamics in two situation: when students interact with their peers, and when students interact with chatbots. The research show that were significant differences between the two types of interaction. Student-chatbot interactions featured more knowledge-based dialogue and elaborate discussions, with less subjective expression compared to student-peer interactions. The student – chatbot interactions tended to follow distinct patterns, while those from student -peer interactions were less predictable. Students contributed significantly less dialogue when interacting with a chatbot than they did during peer interactions. WE need to think about that the students perceived interacting with a GAI chatbot as more useful and easier than interacting with peers. They were motivated to use chatbot for task compared to engaging in discussions with their peers. The question is, what is the purpose of the interaction? Is it to solve a problem or to create a common meaning, to reinforce each other? Why do people interact?

2.5. Communication as Participation

According to Özséb Horányi's participation theory of communication, communication plays a role in problem-solving - in the ability to recognize problems and solve them. According to this view, people use communication to identify problematic situations in their lives and to collaboratively solve them. Communication serves as a tool for acquiring the types of knowledge necessary for problem -solving: the what (factual), the how (rules), and the which (value).

Besides conveying information and arriving at a shared meaning, communication is also used to recognize and solve emerging problems. The model interprets the problem recognizer and the problem solver as either human or subhuman agents. During the processes of problem recognition and problem solving, information becomes accessible to the communicator. In this sense, communication is understood as a state (Horányi, 1999). Communication with AI is fundamentally aimed at solving problems: the human agent recognizes the problem and also realizes that they do not possess the necessary expertise to solve it. Once the user outlines the problem for the AI, the AI begins to develop potential solutions. Implementing a successful solution and truly resolving the problem can only be done with the help of the user. In this model, the human–GenAI relationship appears as a complementary, mutually supportive form of interaction. At the same time, control and oversight must always remain in human hands. This is only possible if the individual possesses broad literacy and competence, enabling them to formulate the problem, assess the quality of the proposed solutions, and carry them out. Occasionally, the GenAI may identify problems even without being specifically instructed to do so by the user. This is why some authors consider AI a serious threat to humans: according to this theory, AI could take over the tasks of problem recognition and problem solving - especially if the human agent lacks the necessary skills to critically evaluate or override the AI (e.g., in the case of advisory AI systems). Technological systems could be understood as displaying, to a certain degree, moral agency (compare the four levels of moral agency by Moore, 2009).

Some studies show that users follow moral advice from systems or bots even if it is clear to them that they are interacting with an AI-based system (Krügel et al., 2023:22–23), or people sometimes overtrust robots (for instance, in emergency situations). (Robinette et al., 2016:10 -108) It seems evident that technological systems can influence the moral behavior of humans (Richter, 2025). This may also explain why they are not concerned about winning a competition or making a financial gain by creating texts or images using generative AI.

2.6. Communication as a Ritual

The ritual model of communication emphasizes that communication serves the creation and preservation of culture. The founder of the ritual theory of communication, James W. Carey, believed that reality should not be regarded as something pre-established, but rather as a social phenomenon created through communication itself. "This particular miracle we perform daily and hourly - the miracle of producing reality and then living within and under the fact of our own productions - rests upon a particular quality of symbols: their ability to be both representations 'of'

and 'for' reality" (Carey, 1992, cited in Andok, 2006). Communication, then, not only serves to create reality but also to continuously maintain it. The ritual view of communication does not focus on the spatial distribution of messages, but rather on how communication forges unity among people over time. This theory sees communication as dramatic action, where we either take on certain roles or refrain from doing so, and we never communicate solely for the sake of obtaining information, but rather to reinforce an existing worldview within ourselves. Looking at the role of newspapers in social life, Carey observes that the emphasis is not on information acquisition, but on the way in which the reader (receiver) connects with the world, and joins a world of contending forces as an observer at a play. A central concept of the theory is the role of representation in the life of the receiver, and how it becomes embedded in it (Szőke-Milinte, 2013).

In a ritual definition, communication is linked to terms such as "sharing," "participation," "association," "fellowship," and "the possession of a common faith." In the ritual perspective, communication is not about the spatial transmission of messages, but about the temporal cohesion of society. "The original or highest manifestation of communication lies not in the transmission of intelligent information but in the construction and maintenance of an ordered, meaningful cultural world" (Carey, 2003, p. 256). In the light of this theory, the content generated by AI – whether textual, visual, auditory, or audiovisual – simultaneously creates a new reality for the user, in which they encounter particular questions or problems in a unique way. The worlds or realities generated by GenAI may be as diverse as the number of users generating them. Therefore, AI does not necessarily support the goal articulated by Carey: the construction and maintenance of a meaningful cultural world. The "purity" of the data used by GenAI is not flawless, and thus, the same applies to the nature of the generated content. This has led to cases where artists have sued AI systems because a generated image, trained on their work, won a competition. An important question arises: in the age of generated images, robot conductors, and AI assistants, what kind of culture is being created through communication?

If we regard reality as a social phenomenon created through communication, and we accept that communication has the power both to create and to represent reality, then it becomes evident that in human–GenAI communication, people bear enormous responsibility for the kind of world, the kind of reality that this communication brings into being.

This poses challenges as users often lack the ability to assess how real, valuable, relevant, or necessary AI-generated content is. Currently, both AI regulation and user knowledge fall short of optimal levels, leaving it up to the individual's moral sense and intelligence to determine how they use communication with AI. This is why we now see the emergence of AI therapists with whom people share their emotional problems, AI friends for entertainment, personal assistants that write assignments, and also the rise of deepfake phenomena used to produce sensational or amusing content. In all these activities, the average user does not realize that they are "paying" with their personal data and behavioral patterns converted into data. The issue of trust versus mistrust surfaces in a radical and one -sided manner: users tend to either trust AI too much or not at all. Depending on ability and opportunities, different patterns of access to AI communication emerge across social subgroups-revealing social fragmentation along the lines of knowledge, understanding, and usage. This contributes to the erosion of democratic processes.

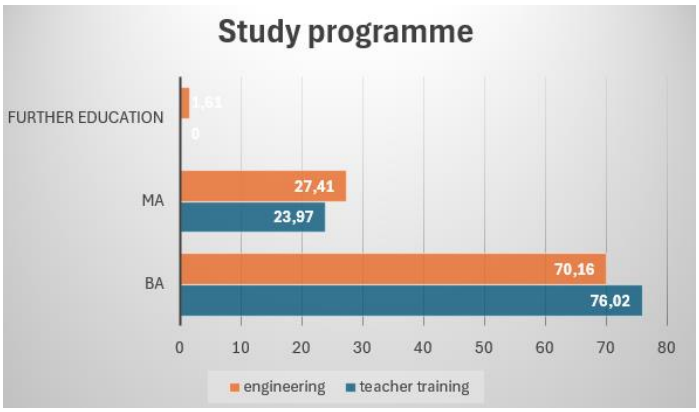
3. Research methodology

With the help of a questionnaire, we looked into how students in engineering and teacher training programs relate to generative AI-specifically, to what extent they perceive communication with AI as similar to interpersonal communication with human agents and as a form of social interaction.

3.1. Sample

Figure 1

Study programme



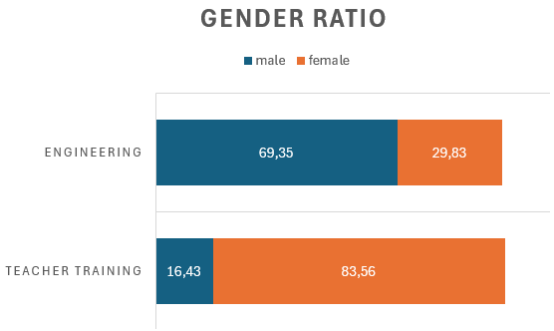
The online survey was conducted at a technical university in Budapest and within teacher training programs at two other universities. After data cleaning, the sample included 124 engineering students and 146 teacher training students (total

N=270). The questionnaire -based study was launched in November 2024 and concluded in March 2025. The two samples had similar characteristics in terms of age and study level (Figure 1). However, as regards gender distribution one of the subsamples contained more male respondents while the other contained more female participants: the average age of engineering sub-sample is 36,41 year, and the average age of teacher training sub -sample is 26,38 year.

In terms of study programme and gender ratio, the two sub-samples were partially identical: the gender ratio in the two training types was opposite (Figure 2).

Figure 2

Gender ratio



3.2. The Questionnaire

Table 1

Theoretical background of the questions

Theoretical assumption	
In interaction, participants form an image of themselves and of each other. However, generative AI cannot form a real image either of itself or of the other: it is not interested in the other, and therefore it is also not interested in who the user is. If the user attributes intention to the generative AI, they may accept that it is capable of formulating any kind of message (e.g., conveying the word of God).	Is artificial intelligence suitable for conveying the Word of God? Did Jesus redeem AI? (AI as a human) Is artificial intelligence capable of "rewriting itself" to buy more time for completing a task, or to avoid carrying out the task? (attribution of intent)
Can generative AI replace humans? (participatory model)	Are you worried that artificial intelligence will take your job in the near future?
What kind of culture does human–GenAI communication create? (ritual model)	Which painting do you like (Van Gogh vs. AI generated)? Which painting do you recognize? Is a robot just as suitable as a human (conductor) for conducting an orchestra?
Is generative AI ethical? (interaction model)	Is artificial intelligence capable of "rewriting itself" to buy more time for completing a task, or to avoid carrying out the task? (one unethical act)

News: artists have sued artificial intelligence because it "stole" their work and generated new images (there was news about Midjourney in 2023).

The questionnaire, distributed through Office Forms (https://forms.office.com/e/YExw0wpapQ), consisted of 22 closed -ended questions, which were tailored to investigate the issues outlined in the theoretical framework. This study does not provide an overview of all the questions but focuses specifically on the following questions (Table 1). I calculated descriptive statistical analysis of the data using Excel, and background analyses using ChatGPT (free version).

4. Results

Is generative AI ethical? (interaction model)

Figure 3

Is AI capable of "rewriting" itself?

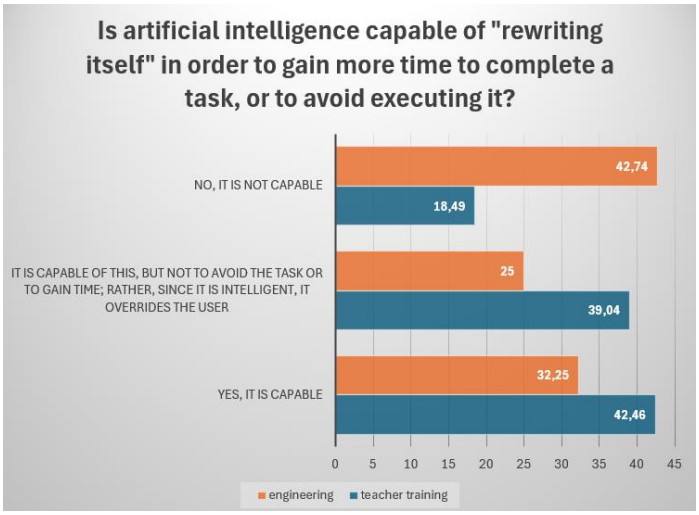
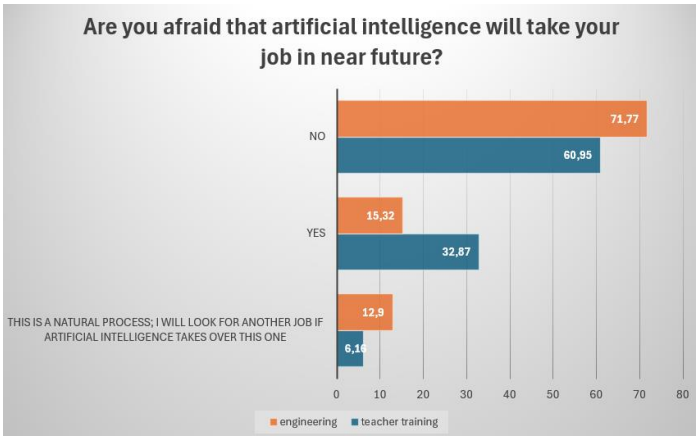


Figure 4

Are you afraid that AI will take your job?



One third of engineering students claimed that AI is capable of rewriting its own algorithm with the intent to avoid completing a task (32,25%), while 42,46% of teacher training students stated the same

(Figure 3). An interesting difference between the two subsamples is that nearly half of the engineering students do not believe AI can rewrite itself (42,74%), whereas only about 18,49% of teacher training students think that way. A quarter of engineering students do not attribute intent to AI, while 39.04% of teacher training students do.

Can generative AI replace humans?

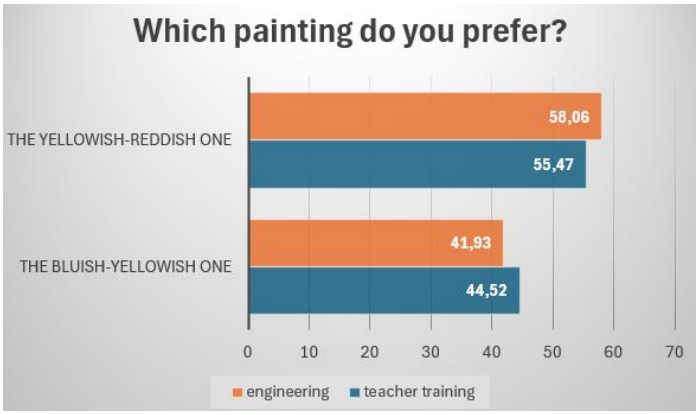
Results show that about 15,32% of engineering students and 32,87% of teacher training students fear that generative AI will take their jobs (Figure 4). Engineering students tend to think more about alternatives if AI were to take their jobs (12,9%).

What kind of culture does human–GenAI communication create? (ritual model)

In both subgroups, the AI -generated image (Midjourney „Théâtre D'opéra Spatial") was preferred by the respondents over the Van Gogh painting, with more than half choosing the AI image (Figure 5). Among the teacher training students, 55,47% gave this response, and 58,06% of engineering students gave this response. At the same time, nearly half of the teacher training students recognized the Van Gogh painting (44,52%), which is significantly higher rate than among the engineering students (35,48%).

Figure 5

Image preference



Significantly more of the older engineering students had seen the Van Gogh painting before than the younger ones ($F = 3.65$, $p = 0.015$), while significantly more of the younger teacher training students had seen it before ($F = 4.98$, $p = 0.003$).

36,3% of teacher training students stated that a robot is not suitable for conducting an orchestra, while among engineering students this figure was 24,19% (https://youtu.be/o5msq7kJ86s). Additionally, 36,98% of teacher training students believe that performing arts cannot do without humans, compared to 30,64% of engineering students (Figure 7). An interesting aspect of the results is that more than a quarter (27,41%) of engineering students approached the question from a technical perspective: since music can be well algorithmized, a robot is suitable to conduct the piece. At the same time 119,86% of teacher training students share this view.

Figure 6

Image recognition

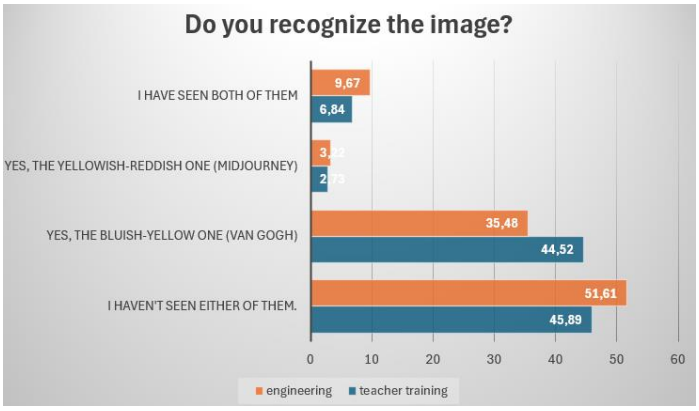
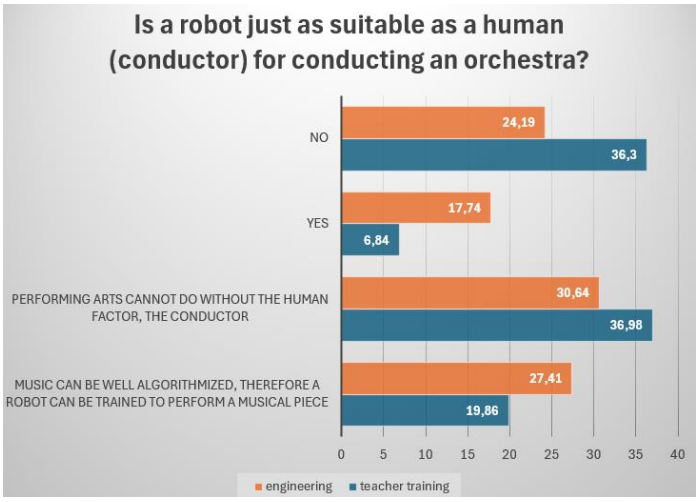


Figure 7

Robot vs humans conductor



Is generative AI ethical?

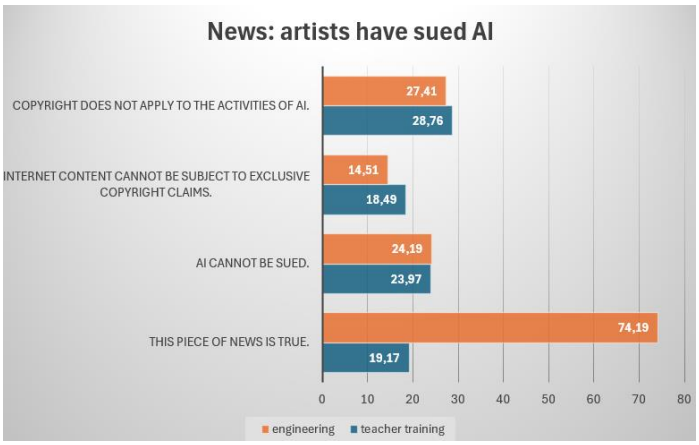
The data show that engineering students are better informed about AI than teacher training students, with 74,19% of them knowing that the news is true, compared to only 19,17% of teacher training students (Figure 8). However, since it is a checkbox, multiple-choice questions, it is alarming that both subgroups have incomplete knowledge regarding AI and internet copyright issues (27,41 and 28,76% of them do not find the copyright regulations concerning AI to be applicable).

42.46% of teacher training students believed that AI is capable of rewriting itself in order to save time or avoid tasks, while 32.25% of engineering students

thought so (Figure 3). At the same time, 25% of engineering students and 39.04% of teacher training students rejected the idea that AI rewrites itself in order to avoid tasks. In both subgroups, there are more people who attribute intent to AI than those who firmly state that AI does not intentionally rewrite its own program. Within both subgroups, there is no evidence that respondents chose either of the answers "able" or "able, but not in order to avoid the task" significantly more often than the other (two -tailed binomial (exact) test). The difference between attribution of intent and denial of attribution of intent is therefore not significant.

Figure 8

Ethical AI



Is artificial intelligence suitable for conveying the Word of God?

In 2023, news spread throughout the Hungarian press that a pastor had used AI to write his Sunday sermon. More than two -thirds of teacher training students (64,38%) consider generative AI unsuitable for conveying the Word of God, while nearly half of the engineering students (46,77%) think the same (Figure 9). Less than a quarter of teacher training students and a quarter of engineering students responded that generative AI is suitable for conveying the Word of God. These answers are based on an attribution of intent (evangelization) and a human behavior (relationship with God), which leads them to accept that generative AI is capable of formulating any message, is capable to communicate with God.

A psychologist recounted in a lecture that he had asked various communities whether Jesus had redeemed Artificial Intelligence. This gave me the idea to ask the students, as their opinions reveal their attitude towards Artificial Intelligence. If they consider it redeemed, they anthropomorphize artificial intelligence.

There is a significant difference between the three groups in terms of age (Table 2): those who believe that Jesus redeemed artificial intelligence are older than those who answered "did not redeem" or "I don't know." (Kruskal–Wallis H = 7.52, p = 0.023).

Figure 9

Is AI human?

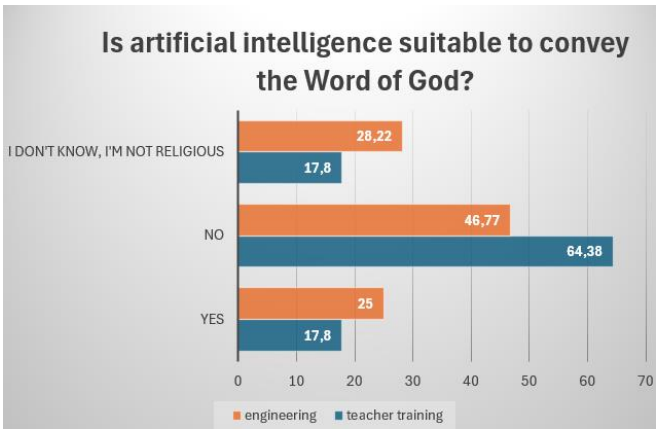


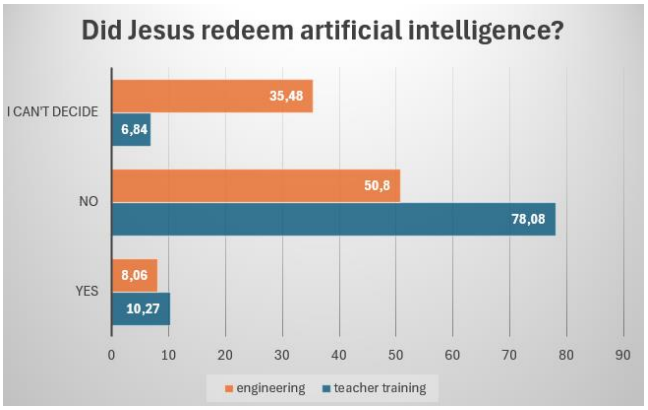
Table 2

Distribution of responses

	Average age
redeemed	30–32 years
not redeemed	26–28 years
I am not a Christian, I cannot decide	34–36 years

Figure 10

AI is human



At the same time, out of the total sample, 19 (7%) people stated that they believe Jesus redeemed artificial intelligence, and there is no significant difference between the two subsamples (teacher training and engineers). The vast majority of teacher training students do not anthropomorphize AI, i.e., they claim that Jesus did not redeem AI (78,08%), while 50,8% of engineering students think the same,

but 34% of engineering students answered "I can't decide" (Figure 10).

5. Discussions

The interaction model of communication highlights that participants form images of themselves and each other through interaction. Since generative AI cannot develop a genuine image of itself or the other, and because it does not care about the user, the attribution of intent is carried out by the user themselves. Some students show this attitude of intentionality towards AI: 32.25% of engineering students and 42.46% of teacher training students. On the other hand, 25% of engineering students and 39.04% of teacher education students rejected the idea that AI would rewrite itself to avoid tasks, and therefore it can be concluded that they do not attribute intent to AI. Finally, in both subgroups, there are more people who attribute intent to AI than those who strongly assert that AI does not intentionally rewrite its own program, a difference that is not significant. Teacher training students are more likely to show the attitude of intentionality toward AI.

Findings show that a new culture is emerging in human–GenAI communication: respondents in both subgroups judged the AI-generated image more positively and preferred it over the Van Gogh painting. It is encouraging that 44,52% of teacher training students recognize the content of classical culture (the Van Gogh painting). It is also satisfying that 36,3% of the teacher training students stated that a robot is not suitable for conducting an orchestra, thus interpreting art as a human -specific activity. Additionally, 36,98% of teacher training students believe that performing arts cannot do without humans. The majority of professionals responsible for educating future generations, nearly three quarters, say that there are activities that are exclusively human-specific, such as the arts. Meanwhile, the majority of teacher candidates prefer the image created by midjourney to that of Van Gogh.

Two -thirds of the respondents are not afraid that generative AI will take their jobs, which suggests they are able to adopt a user -oriented attitude toward generative AI. Teacher training student are more afraid (32%) of AI taking their work.

The responses where about a quarter (25% vs. 17,8%) of respondents in each subgroup stated that AI is suitable for conveying the Word of God can be explained by the fact that they may view AI as a pastor or spiritual leader. These answers are based on an attribution of intent (evangelization) and a human behavior (relationship with God), which leads them to accept that generative AI is capable of formulating any message, is capable to communicate with God.

The responses revealed that those who believe that Jesus redeemed artificial intelligence are older than those who answered "did not redeem" or "I don't know." Just 19 (7%) people out of the total sample stated that they believe Jesus redeemed artificial intelligence. The vast majority of teacher training students do not anthropomorphize AI, i.e., they claim that Jesus did not redeem AI (78,08%).

The responses reveal that almost third of the students (27,41 engineering vs. 28,76 teacher training) do not consider it ethically problematic that an AI -generated image won a competition using images created by other artists. However, also a quarter of them acknowledge that in the interaction between humans and AI, the human is the ethical regulator who should monitor the machine's actions (AI cannot be sued 24.19% engineering students, 23.97% teacher training students Figure 8).

6. Conclusions

The non-representative survey clearly shows that the presence of generative AI has initiated the emergence of a new culture in which a significant number of participants regard AI as a human and attribute intent to it. This is particularly noteworthy among teacher training students, with 42.46% of them exhibiting this intent-attributing attitude. In addition, a quarter of the respondents are unaware of copyright and ethical issues related to AI. Teacher training students should acquaint themselves with the nature and applications of new technologies as teaching future generations requires them to convey valid information and appropriate attitudes toward AI. A user-oriented attitude toward generative AI can help both teacher training and engineering students maintain AI in a role that is most appropriate for them - as a tool. It is also essential to further strengthen the ethical awareness of future engineers and teachers so they can act as ethical regulators in human–GenAI interactions. It would be a good idea for student forums to discuss questions such as intent attribution when it comes to AI, the real capabilities of AI, ethical issues associated with generative AI, and issues related to preserving human qualities.

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