

ALICJA BAUM

Maria Grzegorzewska University in Warsaw

ORCID – 0000-0002-7848-3802

MARIA TRZCIŃSKA-KRÓL

Maria Grzegorzewska University in Warsaw

ORCID – 0000-0002-7018-1922

ARTIFICIAL INTELLIGENCE IN THE PERCEPTION AND EXPERIENCE OF STUDENTS FROM A PEDAGOGICAL UNIVERSITY*

Introduction: The explosive growth of ChatGPT in 2022 has resulted in the terms “ChatGPT” and “AI” (artificial intelligence) becoming almost synonymous in popular perception and everyday speech.

Research Aim: The research was a pilot study and its aim was identification of knowledge and experiences of first-year students from the Maria Grzegorzewska University related to AI.

Research Method: Diagnostic survey using an electronic survey questionnaire.

Results: The survey participants had a broad understanding of the concept of AI. They most often identified it with technology (50.00%). The most common use of AI was generating and working with text (51.35%). All of participants had contact with AI, but 15% had not used it. Most of them encountered it for the first time in the media (52.50%), and they most often gained knowledge about AI from the Internet (76.25%). The largest number of students using AI tools (66.18%) indicated text generators, of which 84.44% were ChatGPT. The participants are supporters of using AI in educational institutions, but most of them did not even know the university guidelines regarding the use of AI in education and declared that they were not interested in them. More than half of the participants believed that using AI tools to complete tasks and exams constitutes cheating or plagiarism and is morally wrong. A statistically significant relationship was found between using AI tools and the opinion on the morality of using them to solve assignments and exams. In other cases, a tendency toward a relationship was observed, specifically in the following areas: 1) the field of study and the knowledge about the tools, regulations and rules regarding the use of AI tools to complete tasks, exams and theses available at the university; 2) the completed secondary school profile and the knowledge about

* Suggested citation: Baum, A., Trzcińska-Król, M. (2025). Artificial Intelligence in the Perception and Experience of Students from a Pedagogical University. *Lubelski Rocznik Pedagogiczny*, 44(2), 37–58. <http://dx.doi.org/10.17951/lrp.2025.44.2.37-58>



the tools, regulations and rules regarding the use of AI tools to preparation of theses available at the university; 3) using AI tools and interest in guidelines on the use of AI at the university.

Conclusions: The conducted research may be a contribution to the analysis of students' knowledge and behaviours related to AI. As research among students from the Maria Grzegorzewska University shows, they are supporters of using AI tools in educational institutions. Bearing this in mind, as well as the fact that graduates the Maria Grzegorzewska University will work with children and young people, for whom AI may become one of the most important learning tools, attention should be paid to properly preparing them for the use of AI in their professional work, including this technology in educational programs, while emphasizing ethical and moral issues.

Keywords: artificial intelligence (AI), generative AI (gen AI), AI applications, AI tools, AI ethics, students of a pedagogical university

INTRODUCTION

The concept of artificial intelligence (AI) is nothing new. It was first used in a 1955 document announcing a conference at Dartmouth College held in 1956 (Cordeschi, 2007; McCarthy et al., 1955). There is no clear definition of the concept of AI. Depending on the field, it is interpreted differently. However, one can accept a general definition of AI as a system based on the analysis, processing, and interpretation of data entered into the system, on the basis of which algorithms prepare the expected output data. On the other hand, the creator of the term "AI", John McCarthy, defined it as "that of making a machine behave in ways that would be called intelligent if a human were so behaving" (1955). "It is the science and engineering of making intelligent machines, especially intelligent computer programs" (McCarthy, n.d.). We currently distinguish between 3 main categories: narrow AI (also known as weak AI) – designed to perform a specific task/tasks, and have no ability to perform tasks outside of their specific domain; general AI (also known as strong AI) – an AI system that could perform any intellectual tasks that a human could perform; superintelligent AI – an AI system defined as being fully self-aware and surpassing the intelligence of humans. Beyond the main division, we distinguish several interrelated levels of AI; machine learning (ML) – enabling computer systems to learn from data; neural networks – whose structure and principle of operation are modelled on the functioning of the nervous system, and the algorithms used allow them to learn from examples and automatically generalize acquired knowledge; deep learning (DL) – a subset of machine learning using neural networks with multiple layers; generative AI (gen AI) – using deep machine learning that leverages large language models (LDMs) to create new content based on input data.

The current development of AI would not have been possible without the growing capabilities of computers and algorithmic methods. Pioneers of AI include Alan Turing, who published *Computer Machinery and Intelligence* in 1950

and proposed a machine test – the Turing test, originally called “The Imitation Game” (Łupkowski, 2010; Turing, 1950) and Marvin Minsky – a pioneer of AI-based robots, who built the first stochastic neural network SNARC in 1951 (Minsky, 1954). In 1956, Allen Newell, Clifford Shaw, and Herbert Simon created The Logic Theorist, a program that imitated the process of human reasoning by proving mathematical theorems in first-order logic, and became the foundation for today’s AI models. It is also worth mentioning the ELIZA program created in 1966 by Joseph Weizenbaum, which was one of the first computer systems to simulate human conversation, described as one of the first chatbots. However, this program did not have the ability to learn in the sense of today’s AI. It was work on perceptrons (the first models of neural networks – designed by Frank Rosenblatt) that started the era of machine learning (Haenlein & Kaplan, 2019; Kubera, 2023) and formed the basis for the development of multi-layer neural networks and deep learning algorithms. Following groundbreaking research and additional funding from governments supporting scientists, the 1980s saw a rapid increase in interest and development of AI. The 1990s also brought enormous progress in AI. In 2020, beta testing of the GPT-3 (Generative Pre-trained Transformer – a deep learning-based autoregressive language model that generates human-like writing) model developed by OpenAI began, introduced to the market in 2021, which became the foundation for DALL-E, which allows the creation of realistic images as well as 3D graphics based on verbal descriptions.

The explosion in popularity of AI occurred after the public release of the ChatGPT 3.5 model in 2022 (Ritchie, 2024), belong to generative AI category, which was able to perform a wide range of tasks from translating texts, summarizing, answering questions (Cotton et al., 2023), to generating content for articles (Transformer et al., 2022), stories (Lucy & Bamman, 2021), and the text generated by it was difficult to distinguish from text written by humans (Elkins & Chun, 2020; Grimaldi & Ehrler, 2023; Thorp, 2023). The boom in ChatGPT in the initial phase caused it to be identified with AI, and the terms ChatGPT and AI became synonymous and began to be used interchangeably.

AI can be an effective tool in education, which will not only relieve teachers of routine tasks, but can also be support in working with students, e.g. through individualised learning environments (Sysło, 2022). The benefits of using AI in education include: individualization of education, support for teachers, automatic assessment, detection of learning difficulties, interactive tutoring, development of soft skills, learning foreign languages, searching for information, help with tasks, simulations and experiences (Fazlagić, 2022). ChatGPT offers many benefits, including: increased student engagement; collaboration on projects and assignments; enables brainstorming; can provide students with writing and editing assistance, especially for non-native English speakers; is a useful aid in generating ideas (Chan & Lee, 2023; Lewis, 2022; Li & Xing, 2021). Automation, machine learning,



and other AI-based technologies are making life easier and more efficient. AI has changed the landscape of education and has become a hot topic of discussion, including academic ones. are developing strategies and procedures that provide support for users on the one hand, and guidelines on when and how AI can be used in academic work on the other.

RESEARCH AIM AND QUESTION

The aim of the pilot research was to identify the knowledge and experiences of first-year students from the Maria Grzegorzewska University (hereafter referred to as MGU) related to AI. Research problems, which defined the pilot research area, were formulated:

How do students understand the concept of AI?

What applications of AI do students see?

What are students' experiences with using AI tools?

How do students perceive ethical and moral aspects related to the use of AI?

Are there relationships between the field of study and interest in guidelines on the use of AI at the university, knowledge of tools, regulations, and rules regarding the use of AI tools for completing assignments, exams, and theses, views on the ethical and moral aspects of AI usage, and concerns about professional future in relation to its development?

Are there any relationships between the completed secondary school profile and interest in guidelines on the use of AI at the university, knowledge of tools, regulations, and rules regarding the use of AI tools for completing assignments, exams, and theses, views on the ethical and moral aspects of AI usage, and concerns about professional future in relation to its development?

Are there any relationships between students' use of AI and their interest in guidelines on the use of AI at the university, knowledge of tools, regulations, and rules regarding the use of AI tools for completing assignments, exams, and theses, views on the ethical and moral aspects of AI usage, and concerns about professional future in relation to its development?

RESEARCH METHOD AND SAMPLE CHARACTERISTICS

The pilot study was conducted using a diagnostic survey method. The survey technique and an original questionnaire consisting of a personal data sheet and 11 questions – three open-ended and eight closed-ended – were used. The study was conducted in February 2024 in electronic form. The study was voluntary and anonymous.

The study was addressed to first-year students from the MGU in Warsaw. The sample was selected randomly – 3 fields of study conducted at the MGU were selected. Only first-year students of the selected fields were invited to the study. The questionnaire was completed by 80 people. Women constituted 86.30% ($n = 69$) of the study sample, men 8.75% ($n = 7$). The study included one non-binary person (1.25%) and one who defined their gender as genderfluid (1.25%). Two people (2.50%) did not answer the question about gender. The average age of the respondents was 19.38 years ($SD = 0.973$). The respondents were representatives of three fields of study – special education ($n = 50$; 62.50%), resocialization pedagogy ($n = 19$; 23.75%), and pedagogy of abilities and computer science ($n = 11$; 13.75%). The same number of respondents, 33 (41.25%), completed a secondary school program related to mathematics and natural sciences as well as humanities and social sciences, while 11 people (13.75%) indicated a different profile. Three people (3.75%) did not provide an answer. The majority of respondents ($n = 68$; 85.00%) declared that they use AI tools, while 15.00% ($n = 12$) admitted that they do not.

STATISTICAL DATA ANALYSIS PROCEDURE

The open-ended questions, particularly the question about explaining the concept of AI, were developed following the grounded theory approach (Gibbs, 2011). The categories were created based on an analysis of the collected data, without prior theoretical assumptions. The process involved systematically reviewing respondents' answers, identifying recurring themes, and grouping them into coherent categories. Using MS Excel, the counts and frequencies were determined in the form of percentages for individual response categories (qualitative data) and the mean and standard deviation (quantitative data).

To determine the relationships between variables, the chi-square test was used. In cases where the assumptions of the chi-square test were not met (more than 20% of the cells had an expected count of less than 5), alternative tests were applied – the Fisher's exact test and the Monte Carlo method for the chi-square test. The SPSS program was used.

RESULTS

The respondents were asked to characterize AI in the context of their own experiences and to specify the resulting understanding of this concept. Eight categories were selected from the statements, some of which were multi-threaded and assigned to several categories. Two people (2.50%) did not explain the concept of AI.



Half of the respondents ($n = 40$) identified AI with technology. The definitions they created used the following terms: “technology”, “program/software”, “application”, “programmed system”, “computer system”, “robot”, “bot/chatbot”, as well as “generator” or “computer science”. Example definitions in this category were formulated:

“The developing fields of computer science and technology, thanks to which, with less of our own input, we can produce graphic works, texts, generate music and sounds, etc.”

“I understand artificial intelligence as a programmed system that is designed to function independently”.

“This is a concept closely related to technology. I associate it most strongly with robots with a human appearance and a computer’s »mind«”.

Almost every fourth person surveyed ($n = 19$; 23.75%) in their definition of AI drew attention to the practical aspect related to the possibility of using it as an aid in work and everyday life. Here are some examples of definitions of AI that capture it in this way:

“It is a certain option for me, making it easier to perform certain tasks in everyday life, such as: creating ideas for business development, helping to come up with a topic for a written paper, etc.”

“Help in everyday life. Answers questions we don’t know the answer to”.

“A tool that makes work easier”.

According to 15 respondents (18.75%), AI can be helpful in obtaining information and solving problems. The following are the sample definitions classified in this category:

“For me, artificial intelligence means faster filtering of data that we can find on the Internet. Thanks to this, instead of visiting several pages, we immediately get a satisfactory answer”.

“Artificial intelligence helps to answer/solve the problem or tasks asked by users”.

A similar percentage of respondents, i.e. 17.50% ($n = 14$), saw AI as a scientific aid.

The respondents described it as follows:

“This is a learning aid that is often used by students (e.g. ChatGPT)”.

“AI, in my opinion, is a learning aid that can help people learn new things, but it can also make people stupid if they use it too much”.

“A learning tool”.

The next category that emerged was *AI as an independent entity that can replace humans*, to which 13 people (16.25%) were classified. The autonomy of AI was perceived by the respondents in many aspects – from independent generation of text or drawings, through aspects of self-development of technology, to

the possibility of inventing reality or replacing human intelligence. This is how the respondents saw it:

“A system that enables the generating of images, text works, etc. without human intervention”.

“An alternative to human thinking”.

On the other hand, the definitions formulated by nine people (11.25%) were classified as AI using existing resources, including:

“AI is taking existing information on the Internet or images and transforming them in increasingly intelligent ways that make it difficult to distinguish between what is human-made and what is not”.

“A computer that has collected so much information from people that it is able to use it to produce images, films or, for example, essays on demand”.

Eight people (10.00%) drew attention to the provenance of AI, attributing its authorship to a human:

“AI is a human-made scientific construct”.

“It is a creation created by man, whose task is to make man's life easier”.

Five people (6.25%) drew attention to aspects related to the threat that AI brings. These people did not specify the threats directly, as illustrated by the examples below:

“Something generated by man that has surpassed him”.

“It is a modern technological solution that can have both positive and negative impact on humanity”.

Areas of application of AI

The respondents were asked to list the applications of AI known to them. Two people (2.5%) did not answer this question, and four (5.0%) stated that AI has applications in every field. The statements of the remaining people ($n = 74$) were classified and presented in Table 1.

More than half of the people who indicated a specific application of AI (40.54%) mentioned generating and working with tests, slightly less often indicated generating and processing images. According to 28.38% of people, AI has found application in chatbots, and almost every fourth respondent indicated searching for information and supporting learning as the applications they know. Other applications were indicated less often. The *Other* answer, which included the answers of 15 people, included, among others: assistance in education, smart homes, spy programs, scientific research, simulation of character behaviour in games, education. There were also more general statements such as: assistance, personalization or answers to all my questions.

Table 1.
Applications of AI according to respondents

Response categories	<i>n</i>	%
text generator/working with text	38	51.35
image generation and processing	30	40.54
chatbots	21	28.38
information search	18	24.32
learning support	18	24.32
sound generation	10	13.51
movie, video generation	9	12.16
translators/language learning	6	8.11
projects/presentations	4	5.41
programming/robotics	4	5.41
idea generation	4	5.41
medicine	3	4.05
computing	3	4.05
facilitating functioning	3	4.05
robots/self-driving cars	2	2.70
other	15	20.27

Percentage calculated for $n = 74$, i.e. people who indicated specific AI applications. Percentages do not add up to 100 because respondents indicated more than one application.

Source: Authors' own study.

Next, the respondents were asked to indicate the categories that they believed to belong to AI. It should be emphasized that all the categories listed in the survey questionnaire belong to AI. However, none of the respondents indicated all of them, and the most frequently indicated were: image and voice generators, chatbots and avatar generators. The least frequently indicated were applications for learning foreign languages and navigation applications. The exact distribution of the respondents' answers is presented in Table 2. One person indicated the category *other* and gave NPC (a term for non-playable entities in games that exhibit autonomous behaviour) as the AI group he belonged to.

Table 2.
AI categories according to respondents

Response categories	<i>n</i>	%
image generators	68	85.00
voice generators	68	85.00
chatbots	67	83.75
avatar generators	64	80.00
intelligent assistants, e.g. in online stores	63	78.75
movie generators	59	73.75
tools supporting writing or improving text	43	53.75
creating live subtitles in real time	40	50.00
algorithms in internet search engines	39	48.75
personalization of advertisements and displayed websites	32	40.00
language translators	28	35.00
navigation applications	19	23.75
language learning applications	18	22.50
other	1	1.25

Source: Authors' own study.

Experience with using AI

All the people taking part in the study declared that they had contact with AI. Most of the respondents first encountered it in the media ($n = 42$; 52.50%), followed by school ($n = 13$; 16.25%), friends ($n = 13$; 16.25%) and home ($n = 10$; 12.50%). Snapchat and the Internet were mentioned as the place of first contact with AI by one person each (1.25%), and no one indicated books or articles.

Respondents most often declared that they draw knowledge about AI from websites ($n = 70$; 87.50%), including: information posted on the Internet ($n = 61$) and social media ($n = 60$) (The number of people assigned to individual subcategories does not have to add up to the number of people assigned to the main category – the responses of one respondent could have been assigned to several subcategories.) Slightly over half ($n = 44$; 55.00%) indicated other people as a source of knowledge about AI (peers $n = 42$ and family environment $n = 8$). In turn, education was indicated by $n = 25$ (31.25%) of respondents. Here, the respondents indicated classes at the university ($n = 24$) and courses and training ($n = 2$). Literature was indicated by $n = 19$ (23.75%) students (articles $n = 18$; pro-

fessional literature $n = 1$). Five people (6.25%) indicated the answer *I do not draw knowledge about AI*.

The respondents were also asked about the frequency of using AI tools. A similar number of respondents declared that they did so often ($n = 24$; 30.0%), rarely ($n = 22$; 27.5%) or very rarely ($n = 17$; 21.25%). 12 people did not use AI tools at all (15.0%) and five (6.25%) did so very often.

Of the 68 people who declared that they used AI, three (4.41%) did not indicate any tools they used. The largest number of respondents, 45 (66.18%), used text generators. It is worth noting that as many as 38 of those using text generators (84.44%) indicated ChatGPT. The respondents mentioned much less frequently: image generators ($n = 10$; 14.71%), translators/dictionaries/applications for learning foreign languages ($n = 10$; 14.71%), chatbots ($n = 8$; 11.76%), AI in applications and built into websites ($n = 7$; 10.29%) and navigation tools ($n = 3$; 4.41%). Almost every tenth respondent ($n = 7$; 10.29%) indicated other AI tools they used, including: text scanners, speech generators, real-time subtitles and games.

Ethical and moral aspects of using AI

Interest in guidelines for the use of AI at universities was not widespread among the respondents. As many as 78.75% ($n = 63$) admitted that they were not interested in such guidelines, and only 21.25% ($n = 17$) answered affirmatively to the question: Were you interested in guidelines for the use of AI at your university?

The vast majority of respondents declared that they had no knowledge about the tools, regulations and university rules regarding the use of AI tools to complete tasks, exams and theses. Only every fourth person answered affirmatively to the question: Does your university have tools, regulations and rules regarding the use of AI tools to complete tasks?, and 30.0% each that they have such tools to complete exams and theses (Table 3).

Table 3.
The knowledge of the respondents about the tools, regulations and rules regarding the use of AI tools available at the university

Response categories	tasks		exams		diploma theses	
	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%
yes	20	25.00	24	30.00	24	30.00
no	3	3.75	3	3.75	2	2.50
I don't know	57	71.25	53	66.25	54	67.50

Source: Authors' own study.

More than half of the respondents believed that using AI tools to complete assignments and exams constituted cheating or plagiarism (60.00%) and was moral-

ly wrong (57.50%), but as many as 30.00% had the opposite opinion. About 10.00% of the respondents had no opinion on the matter (Table 4).

Table 4.

Respondents' opinions on the use of AI in teaching and learning processes

Response categories	Using AI tools to complete assignments and exams constitutes cheating or plagiarism		Using AI tools to solve assignments and exams is morally wrong		All AI tools should be banned in educational institutions	
	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%
yes	48	60.00	46	57.50	7	8.75
no	24	30.00	24	30.00	62	77.50
I don't know	8	10.00	10	12.50	11	13.75

Source: Authors' own study.

The respondents were in favour of using AI tools in educational institutions – 77.50% believed that these tools should not be banned in institutions. Almost every tenth person surveyed, however, had the opposite opinion (Table 4). The respondents' answers to the question: Are you worried about your professional future in connection with the development of AI? were varied. 53.75% of the respondents ($n = 43$) were not worried or rather not worried, and 23.75% ($n = 19$) had the opposite opinion. The remaining respondents, i.e. 22.50% ($n = 18$) had no opinion on concerns about professional work in the context of AI development.

Relationships between variables

The last step in the analysis of the research results was to search for answers to three research questions concerning the relationships between the selected variables.

Monte Carlo method result for chi-square test ($p = 0.089$) indicates a tendency for a relationship between the field of study and the knowledge about the tools, regulations and rules regarding the use of AI tools to complete tasks available at the university. Almost half (47.40%) of students of resocialization pedagogy declared that the university has the tools, regulations and rules regarding the use of AI tools to complete tasks, while 27.30% of students of pedagogy of abilities and computer science made such a declaration, and only 16.00% of special education pedagogy (Table 5). It should be emphasized that this result did not reach full statistical significance, which suggests the need for further research on a larger sample.

Table 5.
The field of study and the knowledge about the tools, regulations and rules regarding the use of AI tools to complete tasks available at the university

The field of study									
The knowledge about the tools, regulations and rules regarding the use of AI tools to complete tasks	Response categories	special education		resocialization pedagogy		pedagogy of abilities and computer science		Total	
		<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%
	yes	8	16.00	9	47.40	3	27.30	20	25.00
	no	3	6.00	0	0	0	0	3	3.80
	I don't know	39	78.00	10	52.60	8	72.70	57	71.30
Overall		50	100.00	19	100.00	11	100.00	80	100.00

Source: Authors' own study.

Table 6.
The field of study and the knowledge about the tools, regulations and rules regarding the use of AI tools to complete exams available at the university

The field of study									
The knowledge about the tools, regulations and rules regarding the use of AI tools to complete exams	Response categories	special education		resocialization pedagogy		pedagogy of abilities and computer science		Total	
		<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%
	yes	10	20.00	10	52.60	4	36.40	24	30.00
	no	3	6.00	0	0	0	0	3	3.80
	I don't know	37	74.00	9	47.40	7	63.60	53	66.30
Overall		50	100.00	19	100.00	11	100.00	80	100.00

Source: Authors' own study.

Monte Carlo method result for chi-square test ($p = 0.087$) also indicated a tendency for a relationship between the field of study and the knowledge about the tools, regulations and rules regarding the use of AI tools to complete exams available at the university. In this case, too, students of resocialization pedagogy (52.60%) more often than students of pedagogy of abilities and computer science (36.40%) and special education (20.00%) declared that the university had the tools, regulations and rules regarding the use of AI tools to complete exams (Table 6).

Table 7.

The field of study and the knowledge about the tools, regulations and rules regarding the use of AI tools to preparation of theses available at the university

		The field of study							
	Response categories	special education		resocialization pedagogy		pedagogy of abilities and computer science		Total	
		<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%
The knowledge about the tools, regulations and rules regarding the use of AI tools to preparation of theses	yes	10	20.00	10	52.60	4	36.40	24	30.00
	no	2	4.00	0	0	0	0	2	2.50
	I don't know	38	76.00	9	47.40	7	63.6	54	67.50
	Overall	50	100.00	19	100.00	11	100.00	80	100.00

Source: Authors' own study.

A tendency towards dependence was also demonstrated in the case of an attempt to establish a relationship between the field of study and knowledge about the tools, regulations and rules regarding the use of AI tools to prepare theses. This is indicated by the result of the Monte Carlo method for the chi-square test ($p = 0.092$). Similarly to the two previous examples, students of resocialization pedagogy more often (52.60%) than those of pedagogy of abilities and computer science (36.40%) and special education (20.00%) declared that the university had the tools, regulations and rules regarding the use of AI tools to prepare theses (Table 7). This result should also be confirmed on a larger sample.

Table 8.
The completed secondary school profile and the knowledge about the tools, regulations and rules regarding the use of AI tools to preparation of theses available at the university

The completed secondary school profile									
The knowledge about the tools, regulations and rules regarding the use of AI tools to preparation of theses	Response categories	mathematics and natural sciences		humanities and social sciences		other		Total	
		<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%
	yes	6	18.20	15	45.50	2	18.20	23	29.90
	no	1	3.00	1	3.00	0	0	2	2.60
	I don't know	26	78.80	17	51.50	9	81.80	52	67.50
	Overall	33	100.00	33	100.00	11	100.00	77	100.00

Source: Authors' own study.

The Monte Carlo method result for the chi-square test ($p = 0.083$) indicates a tendency for a relationship between the completed secondary school profile and the knowledge about the tools, regulations and rules regarding the use of AI tools to prepare theses available at the university. Almost half (45.50%) of students who completed a humanities and social sciences profile in secondary school declared that the university had the tools, regulations and rules regarding the use of AI tools to prepare theses, while less than one in five students (18.20%) completing a mathematics and natural sciences or other profile in secondary school (Table 8).

Table 9.
Using AI tools and interest in guidelines on the use of AI at the university

Using AI tools							
Interest in guidelines on the use of AI at the university	Response categories	yes		no		Total	
		<i>n</i>	%	<i>n</i>	%	<i>n</i>	%
	yes	17	25.00	0	0	17	21.30
	no	51	75.00	12	100.00	63	78.80
	Overall	68	100.00	12	100.00	80	100.00

Source: Authors' own study.

Fisher's exact test analysis showed a tendency for a relationship between the use of AI tools and interest in guidelines for their use at the university ($p = 0.061$). The analysis of the respondents' responses shows that people who do not use AI tools are not interested in the university's guidelines for their use either. Among those who use AI tools, 25.00% were interested in these guidelines (Table 9). The result also did not reach full statistical significance, which suggests the need for further research on a larger sample.

Table 10.

Using AI tools and the opinion on the morality of using them to solve assignments and exams

	Response categories	Using AI tools				Total	
		yes		no			
		<i>n</i>	%	<i>n</i>	%	<i>n</i>	%
Using AI tools to solve assignments and exams is morally wrong	yes	34	50.00	12	100.00	46	57.50
	no	24	35.30	0	0	24	30.00
	I don't know	10	14.70	0	0	10	12.50
	Overall	68	100.00	12	100.00	80	100.00

Source: Authors' own study.

The Monte Carlo method result for the chi-square test ($p = 0.003$) indicates a statistically significant relationship between the use of AI tools and the opinion on the morality of using them to solve tasks and exams. All people who do not use AI consider such use to be morally wrong, while only 50% of AI users do so (Table 10).

DISCUSSION

The key element of adopting technological innovations is their acceptance (Davis, 1989). The way students perceive these innovations, their beliefs, concerns, and personal experiences can influence the degree to which they use information and communication tools (ICT), including AI. Understanding how students perceive and interact with AI is important for the effective integration of new technology into educational systems, as well as preparing students for professional life, where they will be forced to deal with AI systems (Ng et al., 2021; Southworth et al., 2023).

The students from the MGU have a broad understanding of the concept of artificial intelligence, not identifying it only with ChatGPT. The formulated definitions show that they most often identify it with technology (50.00%), but also with: help in work and everyday life, help in obtaining information and solving problems, scientific help, an independent entity that can replace a human, an entity that uses existing resources, a human product but also a threat. Although many definitions

of AI refer to machines that behave like humans or perform activities that require intelligence (cf. e.g.: Kaplan, 2016; McCarthy et al., 1955; Nilsson, 1998; Russell & Norvig, 2010), students from the MGU describe AI mainly through the prism of technology and algorithms. No one defines it by reference to human intelligence, “the concept of creating computer programs or machines capable of behaviour we would regard as intelligent if exhibited by humans” (Kaplan, 2016, p. 1).

The most frequently mentioned application of AI by the students from the MGU is generating and working with text (51.35%). Slightly less often indicated were generating and processing images, chatbots, searching for information or supporting learning. The applications of AI indicated by the surveyed were classified into 14 different categories.

All of the students in our study declare that they have contact with AI, but 15% do not use it. Similar results were obtained by Kharroubi et al. (2024), who found that 97.2% of the surveyed students from universities in Lebanon were familiar with AI, with 43% of respondents having a high level of knowledge about it. In turn, studies among students from universities in Hong Kong showed a moderate positive correlation between their knowledge and the frequency of AI use (Chan & Hu, 2023).

In the studies we present, respondents admit that they first encountered AI in the media (52.50%), and most often draw knowledge about it from information posted on the Internet (76.25%), social media (75.00%) and from peers (52.50%). The largest number of people using AI tools (66.18%) use text generators, and as many as 84.44% of those using them indicated ChatGPT. Research on the use of AI in education shows that students consider AI tools such as chatbots to be useful in teaching (Chan & Hu, 2023). They help students of language groups improve, among others, language grammar or communication (Gayed et al., 2022), and in business education, students indicated the responsiveness, interactivity and support of chatbots (Chen et al., 2023). Other researchers have shown that the use of chatbots in education improves student achievement by allowing them to go through content multiple times, stimulate interest, and improve focus on learning (Bii et al., 2018; Fu et al., 2020).

The vast majority of students at Polish universities believe that universities should allow the use of AI in educational processes (Wieretilo, 2023), while at the same time emphasizing the introduction of clear regulations regarding its use (Malmström et al., 2023; Wieretilo, 2023). The students from the MGU are supporters of using AI tools in educational institutions, but only 21.25% declare that they were interested in guidelines regarding the use of AI in the university. The vast majority do not have knowledge about the tools, regulations and rules of the university regarding the use of AI tools to complete: tasks, exams and diploma theses. More than half of the respondents believe that using AI tools to complete tasks and exams constitutes cheating or plagiarism and is morally wrong. Completely

different results were obtained by researchers from the University of Economics in Krakow, who observed that the majority of their respondents (70.18%) believe that the use of the ChatGPT system in classes is ethical (Cabała et al., 2023). Additionally, our research indicated a statistically significant relationship between the use of AI tools and the opinion on the morality of using them to solve tasks and exams. All people who do not use AI consider such use to be morally wrong. Similar conclusions were drawn by Bozkurt and Gursoy (2023), who found that people who do not use AI are usually slightly more likely to perceive it as a threat compared to people who used it. As other studies show, students are supporters of the use of AI systems in educational processes (see, e.g. Chan & Hu, 2023; Chan & Lee, 2023; Hennessey, 2023), with clear disapproval of AI-generated content for academic work (Chan, 2023), believing that the use of AI-based systems in homework or exams is cheating or plagiarism (Nam, 2023).

It should also be noted that there is a tendency for a relationship between the field of study and knowledge of the tools, regulations and rules available at the university regarding the use of AI tools to complete tasks, exams and prepare theses. People who studied resocialization pedagogy more often than students of abilities pedagogy and computer science and special education declared that the university has the tools, regulations and rules regarding the use of AI tools to complete these tasks. The completed secondary school profile is also important. Students who completed the humanities and social science profile more often declared having knowledge about the university's regulations regarding the use of AI tools.

CONCLUSION

The growing popularity of AI systems and their omnipresence in our environment also requires defining its place in traditional education. Current knowledge of technology, aspects and competences will not be sufficient to function in an environment filled with AI.

Many years ago, when describing a Polish school, Kargulowa aptly used the metaphor of a mirror. School is precisely a mirror of social life, in which phenomena characteristic of contemporary reality are reflected.

Today's school, trying to define its role in the environment (...), cannot forget that it works in a more complex reality than before, cannot pretend that nothing is changing around it and in it, that the school remains eternally "young" and the same, that it knows well why it was created and what its tasks are. Returning to the metaphor of the mirror, whether the school wants it or not, it reflects postmodern reality and must cope with the dilemmas arising in it within its work. (Kargulowa, 2003, p. 26)

With the development of technology based on AI, its popularity and usefulness, we will not avoid its presence in educational institutions. Systems based on AI allow for a change in the form and organization of teaching and learning processes. As research shows, AI-based tools, including chatGPT, are and will be used by students, future teachers, who are supporters of their use in educational institutions. Graduates of the MGU will work with children and young people, for whom AI can become one of the most important learning tools. Therefore, it is even more important to pay attention to properly preparing them to use AI in their professional work, including this technology in educational programs, paying attention to university guidelines regarding the use of AI tools in scientific work, while emphasizing ethical and moral issues. Additionally, it is worth monitoring students' attitudes towards AI because they will change with the growth of knowledge and experience in using AI-based tools.

STUDY LIMITATIONS

The conducted study was subject to typical limitations resulting from the nature of pilot research. The first was the small sample size, consisting mostly of first-year students at the MGU. The results cannot be applied to the general population due to the small sample size of the university community, lack of predictors of age, gender, and field of study. The second was the limitation imposed by the tool used, i.e. the survey questionnaire. In order to obtain a more complete picture, it would be necessary to deepen the study using other methods.

REFERENCES

- Bii, P., Too, J., & Mukwa, C. (2018). Teacher attitude towards use of chatbots in routine teaching. *Universal Journal of Educational Research*, 6(7), 1586–1597. <https://doi.org/10.13189/ujer.2018.060719>
- Bozkurt, V., & Gursoy, D. (2023). The artificial intelligence paradox: Opportunity or threat for humanity? *International Journal of Human-Computer Interaction*, 1–14. <https://doi.org/10.1080/10447318.2023.2297114>
- Cabała, P., Kwiatkowska, K., Woźniak, K., & Zakrzewska, M. (2023). Opinie studentów wobec możliwości i ograniczeń wykorzystania systemu ChatGPT. *E-mentor*, 5(102), 48–56. <https://www.doi.org/10.15219/em102.1638>
- Chan, C.K.Y. (2023). *Is AI Changing the Rules of Academic Misconduct? An In-depth Look at Students' Perceptions of 'AI-giarism'*. <https://doi.org/10.48550/arXiv.2306.03358>

- Chan, C.K.Y., & Hu, W. (2023). Students' voices on generative AI: perceptions, benefits, and challenges in higher education. *International Journal of Educational Technology in Higher Education*, Article 20:43. <https://doi.org/10.1186/s41239-023-00411-8>
- Chan, C.K.Y., & Lee, K.K.W. (2023). *The AI generation gap: Are Gen Z students more interested in adopting generative AI such as ChatGPT in teaching and learning than their Gen X and Millennial Generation teachers?* <https://arxiv.org/abs/2305.02878>
- Chen, Y., Jensen, S., Albert, L.J., Gupta, S., & Lee, T. (2023). Artificial intelligence (AI) student assistants in the classroom: Designing chatbots to support student success. *Information Systems Frontiers*, 25, 161–182. <https://doi.org/10.1007/s10796-022-10291-4>
- Cotton, D.R.E., Cotton, P.A., & Shipway, J.R. (2023). Chatting and cheating: Ensuring academic integrity in the era of ChatGPT. *Innovations in Education and Teaching International*, 61(2), 228–239. <https://doi.org/10.1080/14703297.2023.2190148>
- Cordeschi, R. (2007). AI turns fifty: Revisiting its origins. *Applied Artificial Intelligence*, 21(4–5), 259–279. <https://doi.org/10.1080/08839510701252304>
- Davis, F.D. (1989). Perceived usefulness, perceived ease of use, and user acceptance of information technology. *MIS Quarterly*, 13(3), 319–340. <https://doi.org/10.2307/249008>
- Elkins, K., & Chun, J. (2020). Can GPT-3 pass a writer's Turing test? *Journal of Cultural Analytics*, 5(2), 17212. <https://doi.org/10.22148/001c.17212>
- Fazlagić, J. (2022). Rozwój sztucznej inteligencji jako wyzwanie dla systemu edukacji. In J. Fazlagić (Ed.), *Sztuczna inteligencja (AI) jako megatrend kształtujący edukację. Jak przygotowywać się na szanse i wyzwania społeczno-gospodarcze związane ze sztuczną inteligencją?* (pp. 25–37). IBE.
- Fu, S., Gu, H., & Yang, B. (2020). The affordances of AI-enabled automatic scoring applications on learners' continuous learning intention: An empirical study in China. *British Journal of Educational Technology*, 51(5), 1674–1692. <https://doi.org/10.1111/bjet.12995>
- Gayed, J.M., Carlon, M.K.J., Oriola, A.M., & Cross, J.S. (2022). Exploring an AI-based writing assistant's impact on English language learners. *Computers and Education: Artificial Intelligence*, 3, 100055. <https://doi.org/10.1016/j.caeai.2022.100055>
- Gibbs, G. (2011). *Analizowanie danych jakościowych*. PWN.
- Grimaldi, G., & Ehrler, B. (2023). AI et al.: Machines are about to change scientific publishing forever. *ACS Energy Letters Journal*, 8(1), 878–880. <https://doi.org/10.1021/acsenergylett.2c02828>
- Haenlein, M., & Kaplan, A. (2019). A brief history of artificial intelligence: On the past, present, and future of artificial intelligence. *California Management Review*, 61(4), 5–14. <https://doi.org/10.1177/0008125619864925>
- Hennessey, M. (2023). *Exclusive: Almost half of Cambridge students have used ChatGPT to complete university work*. VARSITY. <https://www.varsity.co.uk/news/25463>
- Thorp, H. (2023). ChatGPT is fun, but not an author. *Science*, 379, 313–313. <https://doi.org/10.1126/science.adg7879>



- Kaplan, J. (2016). *Artificial Intelligence: What Everyone Needs to Know*. Oxford University Press.
- Kargulowa, A. (2003). Szkoła wobec dylematów współczesności. In D. Jankowski (Ed.), *Szkoła w społeczności lokalnej* (pp. 25–36). Wydział Pedagogiczno-Artystyczny UAM.
- Kharroubi, S.A., Tannir, I., Abu El Hassan, R., & Ballout, R. (2024). Knowledge, attitude, and practices toward artificial intelligence among university students in Lebanon. *Education Sciences*, 14(8), 863. <https://doi.org/10.3390/educsci14080863>
- Kubera, G. (2023). *Skąd wzięła się sztuczna inteligencja? Historia najważniejszych postaci i ich wkład w rozwój AI*. Business Insider. <https://businessinsider.com.pl/technologie/poczatki-sztucznej-inteligencji-postacie-ktore-zmienily-bieg-historii/mgjr6y8>
- Lewis, A. (2022). Multimodal large language models for inclusive collaboration learning tasks. In *Proceedings of the 2022 Conference of the North American Chapter of the Association for Computational Linguistics: Human Language Technologies: Student Research Workshop* (pp. 202–210). Washington.
- Li, C., & Xing, W. (2021). Natural language generation using deep learning to support MOOC learners. *International Journal of Artificial Intelligence in Education*, 31(2), 186–214. <https://doi.org/10.1007/s40593-020-00235-x>
- Malmström, H., Stöhr, C., & Ou, A.W. (2023). Chatbots and other AI for learning: A survey of use and views among university students in Sweden. *Chalmers Studies in Communication and Learning in Higher Education*, Article 2023:1. <https://doi.org/10.17196/cls.cslhe/2023/01>
- McCarthy, J., Minsky, M.L., Rochester, N., & Shannon C.E. (1955). *A proposal for the Dartmouth summer research project on artificial intelligence*. <http://www-formal.stanford.edu/jmc/history/dartmouth/dartmouth.html>
- McCarthy, J. (n.d.). *What is AI? / Basic Questions*. Stanford. <http://jmc.stanford.edu/artificial-intelligence/what-is-ai/index.html>
- Minsky, M. (1954). *Theory of Neural-Analog Reinforcement Systems and Its Application to the Brain Model Problem*. PhD dissertation. Princeton University.
- Nam, J. (2023). *56% of College Students Have Used AI on Assignments or Exams*. Best Colleges. <https://www.bestcolleges.com/research/most-college-students-have-used-ai-survey/>
- Ng, D.T.K., Leung, J.K.L., Chu, S.K.W., Qiao, M.S. (2021). Conceptualizing AI literacy: An exploratory review. *Computers & Education: Artificial Intelligence*, 2, Article 100041. <https://doi.org/10.1016/j.caeai.2021.100041>
- Nilsson, N.J. (1998). *Artificial Intelligence: A New Synthesis*. Morgan Kaufmann Publishers.
- Lucy, L., & Bamman, D. (2021, June 11). Gender and representation bias in GPT-3 generated stories. In *Proceedings of the Third Workshop on Narrative Understanding* (pp. 48–55). Mexico City.
- Łupkowski, P. (2010). *Test Turinga. Perspektywa sędziego*. Wyd. Nauk. UAM.



- Ritchie, I. (2024). *AI history*. <https://www.ritchie.studio/wp-content/uploads/2024/04/AI-history-2024.pdf>
- Russell, S., & Norvig, P. (2010). *Artificial Intelligence: A Modern Approach*. Prentice-Hall.
- Southworth, J., Migliaccio, K., Glover, J.[J.], Glover, J [Ja'Net], Reed, D., McCarty, C., Brendemuhl, J., & Thomas, A. (2023). Developing a model for AI across the curriculum: Transforming the higher education landscape via innovation in AI literacy. *Computers & Education: Artificial Intelligence*, 4, Article 100127. <https://doi.org/10.1016/j.caeai.2023.100127>
- Sysło, M. (2022). Sztuczna inteligencja wkracza do szkół: jak uczyć się o AI i z pomocą AI. In J. Fazlagić (Ed.), *Sztuczna inteligencja (AI) jako megatrend kształtujący edukację. Jak przygotowywać się na szanse i wyzwania społeczno-gospodarcze związane ze sztuczną inteligencją?* (pp. 74–98). IBE.
- Transformer, G.G.P, Osmanovic Thunström, A., & Steingrímsson, S. (2022). *Can GPT-3 write an academic paper on itself, with minimal human input?* <https://hal.archives-ouvertes.fr/hal-03701250/document>
- Turing, A. (1950). Computing machinery and intelligence. *Mind*, 49, 433–460.
- Wieretilo, N. (2023). *Shifting Horizons – Transformative Trends Reshaping the Landscape of Higher Education*. Coopernicus. <https://coopernicus.pl/wp-content/uploads/2024/01/Raport-Edukacyjny-PL.pdf>

SZTUCZNA INTELIGENCJA W PERCEPCJI I DOŚWIADCZENIACH STUDENTÓW UCZELNI PEDAGOGICZNEJ

Wprowadzenie: Lawinowy wzrost popularności ChatGPT w 2022 roku spowodował, że w powszechnym odbiorze oraz mowie potocznej chat ten i sztuczna inteligencja stały się niemal określeniami synonimicznymi.

Cel badań: Badanie miało charakter pilotażu, a jego celem było poznanie wiedzy i doświadczeń studentów pierwszego roku studiów Akademii Pedagogiki Specjalnej im. Marii Grzegorzewskiej związanych ze sztuczną inteligencją.

Metoda badań: Sondaż diagnostyczny z wykorzystaniem elektronicznego kwestionariusza ankiety.

Wyniki: Badane osoby szeroko rozumiały pojęcie sztucznej inteligencji (AI). Najczęściej identyfikowały ją z technologią (50,00%). Najczęściej wymienianym przez badanych zastosowaniem AI było generowanie tekstu i praca z nim (51,35%). Wszyscy mieli styczność z AI, ale 15% z niej nie korzystało. Większość badanych po raz pierwszy zetknęła się z nią w mediach (52,50%), wiedzę zaś o AI czerpali najczęściej z Internetu (76,25%). Najwięcej osób korzystających z narzędzi AI (66,18%) wskazywało generatory tekstów, z czego 84,44% ChatGPT. Badani są zwolennikami wykorzystania AI w placówkach oświatowych, jednak większość z nich nie знаła nawet wytycznych uczelni odnośnie do wykorzystania AI w dydaktyce i deklarowała, że nie interesowała się nimi. Ponad połowa badanych uważała, że używanie narzędzi AI do wykonywania zadań i egzaminów stanowi ściąganie lub plagiat i jest moralnie złe. Ustalono istotną statystycznie zależność między korzystaniem z narzędzi AI a opinią na temat moralności ich używania do rozwiązywania zadań i egzaminów. W pozostałych przypadkach stwierdzono ten-

dencję do zależności, a dotyczyła ona: 1) kierunku studiów i wiedzy na temat posiadanych przez uczelnię narzędzi, regulacji i zasad dotyczących wykorzystania narzędzi AI do realizacji zadań, egzaminów oraz prac dyplomowych; 2) ukończonego w szkole średniej profilu i wiedzy na temat posiadanych przez uczelnię narzędzi, regulacji i zasad dotyczących wykorzystania narzędzi AI do realizacji prac dyplomowych; 3) korzystania z narzędzi AI i zainteresowania wytycznymi odnośnie do ich używania w uczelni.

Wnioski: Przeprowadzone badania mogą stanowić przyczynek do analizy wiedzy i zachowań studentów związanych ze sztuczną inteligencją. Jak pokazują badania wśród studentów pierwszego roku Akademii Pedagogiki Specjalnej im. Marii Grzegorzewskiej są oni zwolennikami wykorzystania narzędzi AI w placówkach oświatowych. Absolwenci Akademii Pedagogiki Specjalnej im. Marii Grzegorzewskiej będą pracować z dziećmi i młodzieżą, dla której AI może stać się jednym z ważniejszych narzędzi do nauki, dlatego należy skupić się na odpowiednim przygotowaniu ich do wykorzystania AI w pracy zawodowej, włączając tę technologię do programów kształcenia i jednocześnie kładąc nacisk na kwestie etyczno-moralne.

Słowa kluczowe: sztuczna inteligencja (AI), generatywna sztuczna inteligencja (gen AI), zastosowania AI, narzędzia AI, etyka AI, studenci i studentki uczelni pedagogicznej