



DialogEduShift: Transforming Higher Education Teaching and Evaluation Approaches in the Era of AI ChatTools

Project No: 2023-1-PL01-KA220-HED-000167212

WP2 – National report of survey

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Introduction

Electronic devices have become an indispensable part of our everyday life, including the field of higher education. Universities and higher educational institutions are particularly important for the process of digital transition. According to a recent study, 97 per cent of students use electronic devices in their studies (Sewastianowicz 2023). Moreover, the use of different AI tools, such as ChatGPT has been observed in higher education. Thus, it is crucial to explore the potential and impact of AI tools for this field.

Artificial intelligence (AI) involves e. g. machine learning platforms, language processing, decision-making, speech, and vision recognition, promoting human–computer interaction (Motta Monte-Serrat and Cattani, 2023, 4). The use of AI tools is also connected with concerns among the members of academic community, especially those relating to ethical issues, intellectual property rights and the impact of AI on students and researchers. The objective of this study is to examine the knowledge and perceptions of AI tools by experts in the field, academicians and university administrators. It also aims to analyze the potential strengths, weaknesses, opportunities and threats of AI tools in higher education.

The study has been conducted on 26 respondents from various universities in Warsaw, Poland. There were 10 experts, 11 academic teachers and 5 representatives of university administration who participated in the questionnaire and consequently in the in-depth interviews.



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State-of the-art desk research of current situation in Poland

The emergence of AI tools and their widespread use at all levels in education has caused the need to implement guidelines and recommendations on their use. In April 2023, four Polish universities in cooperation with the Research and Academic Computer Network issued a document titled “Recommendations for students, doctoral students, teaching, and research staff in connection with the use of algorithms, so-called AI and others, such as ChatGPT and similar” (Rekomendacje dla studentów... 2023). This was followed by the adoption of specific regulations by the respective universities.

Some universities started to implement their internal regulations on the use of artificial intelligence tools in higher education. For instance, in October 2023, Cardinal Stefan Wyszyński University in Warsaw adopted a regulation on the use of tools based on artificial intelligence in teaching and learning.

The above regulation recognizes the following benefits of the use of artificial intelligence in higher education (Zarządzenie Nr 57/2023):

- Saving students’ time spent on in preparing scientific texts, reviewing sources and analyzing data, creating text plans, abstracts and summaries.
- Automatic, high-quality translation of texts into any foreign language.
- Use of AI as an idea generator for brainstorming on a selected topic.
- The creation of teaching materials in a shorter time by academics that are more engaging for students, including the development of critical thinking skills:
 - Generating questions, quizzes and scenarios.
 - Creation of lesson outlines in a short time and generation of ideas.
 - Developing of tests and defining evaluation criteria in a short time.
 - Automatic grading of short answers.



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- Faster preparation of syllabus for classes when creating course objectives and learning outcomes.

The University has also issued Recommendations on the use of artificial intelligence (AI) tools in didactics by students, doctoral students and academic teachers at Cardinal Stefan Wyszyński University in Warsaw. In the above documents, the university guaranteed scientific and didactic openness to modern IT tools. It noted that “the freedom to use various IT tools, including such as content generators, is part of the scientific openness of science and didactics” (Rekomendacje dotyczące... 2023). Nevertheless, as AI tools are being constantly developed, universities need to keep pace in order to ensure high academic standards in line with the technological progress.



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Analysis of survey results

Survey

The survey was constructed to address the following questions:

- Demographic questions: country, age, gender, highest education obtained and position.
- **Area 1:** Are you familiar with the concepts such as Artificial Intelligence (AI), Generative AI, data science, machine learning and AI chatbot? The answers to the above questions were rated on a scale: no – rather no – neutral, rather yes – yes. These questions were followed by an open question to describe the knowledge and understanding of AI.
- **Area 2:** Have you used or encountered these AI tools in your daily life such as AI chatbots, Image generator, Image/ video editor, Video generator, Sound and music generator and Computer vision? The answers to the above questions were rated on a scale: no – rather no – neutral, rather yes – yes. These questions were followed by an open question to describe in which situations the AI tools were used.
- **Area 3:** What AI chatbots do you use such as ChatGPT <https://chat.openai.com/>, Google Bard <https://bard.google.com/> and Bing Chat? This was followed by two open questions whether AI technologies could improve the study process in higher education and to share experiences when AI tools were helpful or necessary in the study process (only for academician).
- **Area 4:** Do you think AI technologies could help improve the study process in higher education? Additionally, there were two more open-ended questions: How could AI technologies, in your opinion, help improve the study process in higher education? Could you provide examples or share experiences when AI tools were helpful or necessary in study process? (Only for academicians).
- **Area 5:** Do you use AI tools to create personalized learning approaches? (Only for academician); Do you use AI tools in the assessment process? (Only for academician), Do you use AI tools to create personalized learning approaches? (Only for academician), Do



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you have sufficient knowledge and skills for the use of AI technologies in the study process? (Only for academician), Do you feel the need to enhance your knowledge and skills in using AI technologies in the study process if they were available? (Only for academician), Do you agree that AI creates opportunities for the improvement of the education/study process?, Do you agree that AI poses challenges to the education/study process? The answers to the above questions were rated on a scale: no – rather no – neutral, rather yes – yes.

- **Area 6:** A SWOT analysis of the strengths, weaknesses, opportunities, and threats that the use of AI in the higher education process according to respondents.

Each survey was followed by an in-depth interview. In total, the research included 10 experts in the field, 11 academicians and 5 university administrators.

Findings of Experts in the field

As many as 10 experts from Poland participated in the survey, mostly with background in information technology. The age range of participants was from 35 to 67 years old. Both male and female experts participated (please see Figure 1), with educational backgrounds either master's degree or doctoral degree or higher (associate professor or full professor).

Figure 1: Gender of Participants



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Gender

Female
10.0%

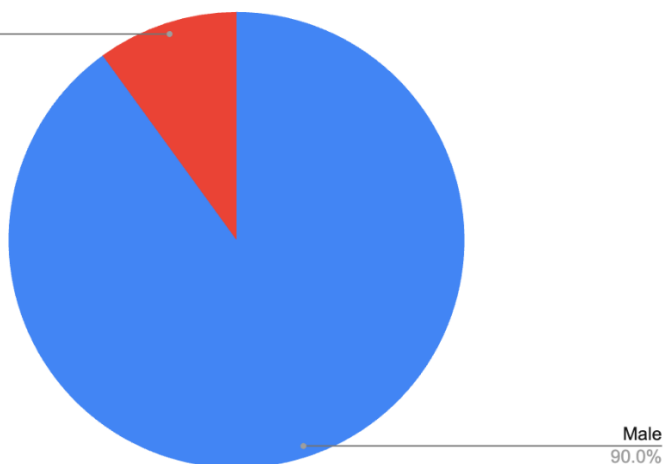
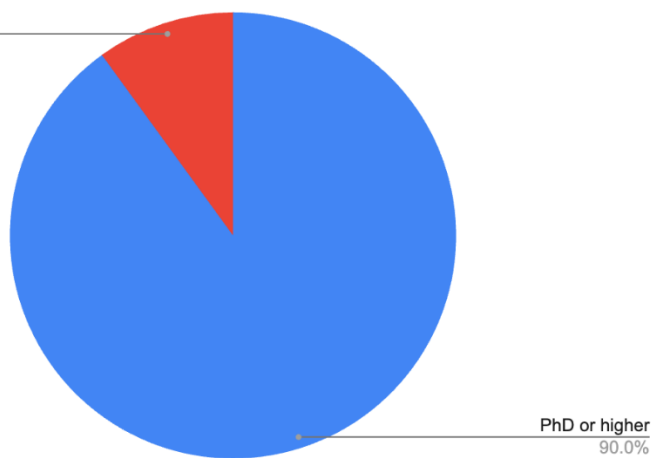


Figure 2: Highest education obtained

Highest education obtained

Master
10.0%



All participants in this category had comprehensive knowledge of AI tools. Artificial intelligence was described by them as a set of methods and techniques that allow the user to classify or find solutions to given problems or questions based on available sources thanks to prior learning or



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training. They also described artificial intelligence as a system that can analyze a very large amount of data and quickly provide the result. Artificial intelligence tools may also serve as solutions to certain problems, classification of information, finding solutions to given problems or answers to questions based on many available sources.

Area 2: Utilization of AI tools

All participants stated that they used AI tools in their daily lives. The vast majority of participants claimed that they used AI tools for obtaining preliminary information about given issues as well as in order to receive help with preparing correspondence. Additionally, they used AI tools in order to search for inspiration and ideas to help them perform various tasks in their everyday life.

Area 3: Most used AI chatbots

Most participants claimed to use Chat GPT to answer their queries, as well as Bing Chat. They also claimed to know Google Bard, however, not to use this tool often.

Area 4: Perception on AI in higher education

According to experts who participated in the survey, artificial intelligence offers diverse benefits for higher education. Firstly, they noted that there was a great potential of AI to improve the process of higher education, thanks to its ability to process large amount of information. In this context, experts highlighted the utility of AI in language learning, communication exercises, and scientific research, particularly in desk research analysis. Furthermore, they acknowledged the efficiency of AI in generating algorithms, especially in computer science, but emphasized discipline-specific applicability. For instance, they believed that artificial intelligence would have a larger impact on natural sciences as well as technical science, whilst it would have a limited impact on social sciences and humanities. Secondly, they believed that AI could also be used by academic teachers in order to provide easy access to information in university databases. It could also be beneficial for exchange of information between universities and assist academic teachers in the preparation of teaching materials. Experts also underscored the administrative advantages,



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noting that AI can relieve lecturers of tasks like writing e-mails and grading assessments, thereby significantly saving their time. Thirdly, they believed that AI could be used by students to access explanations of concepts, search for information, finding different solutions to problems. However, they pointed out some potential drawbacks, suggesting that while AI makes tasks easier, it may lead to complacency in information search. These perspectives showcase the multifaceted advantages of AI in enhancing educational processes, spanning language learning, academic research, discipline-specific tasks, and administrative responsibilities.

Area 6: Strengths, Weaknesses, Opportunities, and Threats (SWOT) Analysis

Strengths: Experts believed that artificial intelligence offers substantial strengths for higher education. The potential of AI to harness big data facilitates efficient information retrieval, accelerates problem-solving, and aids in the selection and processing of relevant data. AI excels in tasks involving the analysis of vast datasets, streamlining complex processes. Additionally, AI enables effective feedback mechanisms, enhancing the learning experience. Furthermore, the integration of AI in administrative tasks, such as letter writing, can significantly alleviate the workload for educators, providing them with more time for impactful interactions with students. Overall, AI contributes to a more efficient, data-driven, and time-saving educational environment in higher education.

Weaknesses: Despite its strengths, AI in higher education faces several weaknesses. AI lacks a deep understanding of the essence and nuances of questions, missing the human touch in comprehension. Students may exploit AI for independent preparation of final theses, which raises concerns about academic integrity. The indirect assimilation of knowledge by AI poses challenges, potentially depleting the human stock of knowledge. Copyright issues arise, as AI-generated content may lack proper attribution or violate intellectual property rights. Additionally, the inherent fallibility of AI requires constant verification, highlighting the importance of human oversight to correct errors. These weaknesses underscore the need for cautious integration and monitoring of AI in educational processes.



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Opportunities: Artificial intelligence presents numerous opportunities to enhance higher education. In the view of experts, it enables quick access to answers for complex questions and facilitates better access to specialized knowledge, enriching the learning experience. It also has the potential to address various challenges and substitute human decision-making by leveraging knowledge from diverse sources. Moreover, AI allows for rapid content verification and customization of teaching materials to meet individual student needs. Its ability to process large volumes of data swiftly empowers educators with valuable insights for improved teaching and learning outcomes. These opportunities highlight the transformative potential of AI in optimizing educational processes and outcomes in higher education.

Threats: Undoubtedly, AI in higher education brings forth certain threats. There is an increased risk of plagiarism, lack of independence, and dishonesty as students may exploit AI tools for their work. Moreover, concerns were raised about the outcomes of AI-driven work, with challenges in attributing accountability. The proliferation of scientific works generated by AI also poses difficulties in content verification. Last but not least, experts were concerned about the use of acquired data and overall data protection by AI tools.

Findings of academicians

Demographics:

The survey included 11 academicians from various universities based in Warsaw. The age of participants was from 32 to 50 years old. As many as 4 male and 7 female participants took part in the survey. Whilst the majority of participants possessed doctoral degree or higher (associate professor or full degree), there were also 2 participants with master's degree.



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Figure 3: Gender of participants

Gender of participants

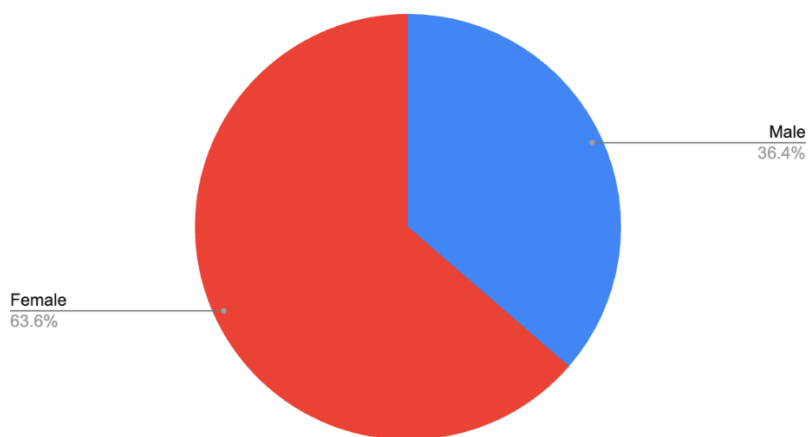
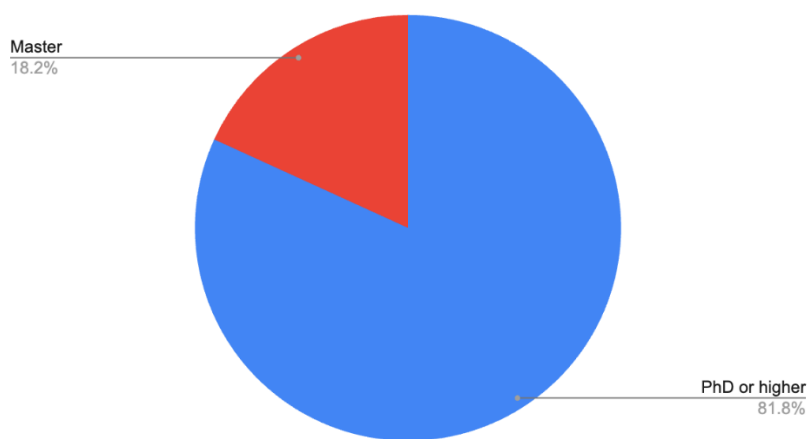


Figure 4: Highest degree obtained

Highest degree obtained



Area 1: Awareness and Understanding of AI



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All 11 participants that participated in the survey claimed that they were familiar with the concept of artificial intelligence. 8 out of 11 participants were familiar with the concept of generative artificial intelligence. 10 out of 11 participants were familiar with the notion data science. 8 participants were familiar with the concepts of machine learning and AI chatbot. The above numbers demonstrate a high level of familiarity with AI tools. Nevertheless, there is a potential of broadening the knowledge of academic teachers in areas connected with generative AI, machine learning and AI chatbots.

Artificial intelligence was understood as computer programs capable of independently processing extensive data to create content. AI collects and processes information, designed to perform intelligent tasks either alongside or instead of humans. AI was also characterized by its self-learning nature, leveraging internet data and algorithms to answer questions and generate content-based on user commands. The technology evolves through continuous feedback, predicting and creating new solutions based on accumulated information. In general, AI was recognized as the ability of machines to perform tasks closely resembling human intelligence, which acts as a computer solution that continually enhances its capabilities through the utilization of vast internet resources.

Area 2: Utilization of AI tools

Out of 11 participants, 9 claimed that they had used or encountered AI chatbots in their daily life, 7 had previous experience with image generator, 8 with image or video editor, 8 with video generator, 6 with sound and music generator, whilst only 2 participants claimed that they had encountered computer vision.

The participants noted that they used AI tools in various situations, such as creating computer graphics and processing data. Some of them admitted that AI helped them generate texts, questions, exam questions or illustrations. Others noted that AI was useful in their private life, for instance when searching for product advice or while using learning apps.



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Area 3: Most used AI chatbots

The most well-known and used AI tool was ChatGPT. 7 out of 11 participants claimed to know and use this tool, whilst the rest claimed to know but not to use it. The least well-known and used AI tool was Google Bard.

Area 4: Perceptions on AI in Higher Education:

9 out of 11 respondents answered that AI could be helpful in higher education. According to them, AI has a substantial potential to enhance higher education across various areas. Firstly, it serves as an inspiration for new scientific projects, aids in creating graphics, and excels in searching, processing, and managing vast amounts of information and data. Secondly, AI may support administrative tasks and contribute to the efficient management of educational processes, university administration, and the delivery of educational content. Thirdly, AI facilitates knowledge acquisition by providing insights into existing research, the state of knowledge, and research methods. It may be beneficial not only for lecturers in searching, organizing materials, and assisting in research, but also for students, especially language learning, communication exercises, and desk research. The participants noted that AI they had positive experience with AI tools in study process, especially with translating documents, reviewing bibliography and writing project proposals.

Area 5: AI in the education process

None of the participants used AI tools in the assessment process or to create personalized learning approaches. Only 36 per cent of respondents stated that they had sufficient knowledge and skills for the use of AI technologies in the study process. 91 per cent of respondents stated that they felt the need to enhance their knowledge and skills in using AI technology in the study process if they were available. 91 per cent of academic teachers agreed that AI creates opportunities for the



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improvement of education/study process and 100 per cent agreed that AI posed challenges to the education/study process.

Area 6: Strengths, Weaknesses, Opportunities, and Threats (SWOT) Analysis

Strengths: According to the respondents, the efficiency of AI in processing vast amounts of data and creating graphics enhances the data processing workflow. Moreover, AI provides ideas and impulses for the creation of new educational content and materials. The scale of information processing, as well as its efficiency underscore its utility in desk research analyses. Some respondents noted that while it may still be early to comprehensively describe the strengths of AI in higher education, the current observations highlight its potential in accelerating work processes and improving accessibility of educational tools.

Weaknesses: It has been noted by several participants that the use of AI tools in higher education may lead to one-sided reliance on AI-generated information. This may later cause failure of students and lecturers to critically analyze content and verify data, which could result in the incorrect conclusions. Furthermore, copyright issues emerge as AI may reproduce false or infringing information, and pose risks related to transparency. Also, academic teachers noted that there is a lack of developed ethical standards and principles for AI use, and various difficulties come up in verifying students' assignments. Moreover, there is a fear that AI may lead to students' passivity, since students might rely on AI suggestions rather than engage in critical thinking process.

Opportunities: It was pointed out that AI may help to create more engaging and interesting activities in the classes. AI may also enhance access to knowledge and provide valuable assistance in the learning process. Furthermore, AI can serve as a helpful tool for academic work when supervised by academic teachers and correctly addressed. Its integration into education process allows for more advanced study methods and the accumulation of knowledge. Additionally, AI may contribute to overall work improvement in the academic setting.



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Threats: The respondents highlighted the risk of plagiarism and the potential lack of original work from students as significant concerns. There were also concerns about students’ laziness, given that AI provides fast solutions, and hindering their critical thinking. Text generators capable of producing works of questionable quality pose a significant threat, particularly in the context of academic assignments and dissertations. Copyright infringement issues may also arise. Moreover, the over-reliance on AI for may limit critical thinking and analytical skills. There is also a concern that the use of AI might narrow intellectual horizons of students in the humanities and social sciences, and potentially hinder unconventional thinking.

Findings of University Administrations and Representatives of HEIs

Demographics:

In total, 5 representatives of HEIs from Poland participated in the survey. Their age ranged from 45 to 55 years old. Both males and females were represented (please see Figure 5) with educational background doctorate or higher (associate professor or full professor, please see Figure 6).

Figure 5: Gender of participants



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Gender of participants

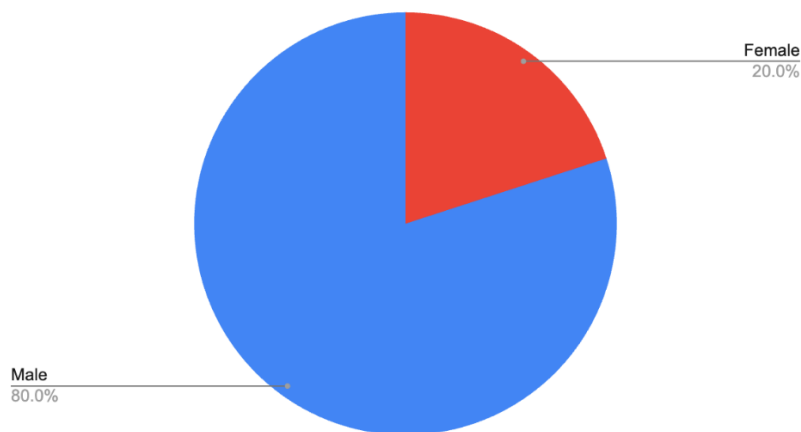
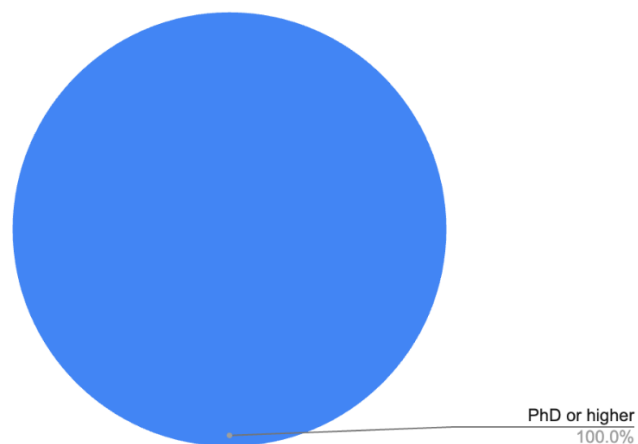


Figure 6: Highest degree obtained

Highest degree obtained



Area 1: Awareness and Understanding of AI

Artificial intelligence (AI) was perceived by participants as a set of algorithms and numerical processes introduced by humans to facilitate interaction with other humans. According to one of



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the participants, AI involves advanced data processing capabilities within computer systems, equipped with learning abilities comparable to the human mind. The understanding of AI included the generation of new content through logical reasoning, driven by extensive data available on the internet. AI was also associated with the invention of algorithms designed to process thoughts and content, aiming to solve specific problems. In general, AI was perceived as a dynamic and problem-solving tool that utilizes logical processes to generate meaningful and innovative outcomes. Most of the representatives of HEIs were familiar with the concepts of artificial intelligence, data science and AI chatbot (60%).

Area 2: Utilization of AI tools:

Most of HEIs representatives claimed that they encountered AI chatbots, image generators and video generators in their daily life. Two of them claimed to use AI chatbots, whilst other two participants claimed to use image generators or video generators. The situations in which they used AI in their daily life included posing questions to AI to seek answers or gain insights on the issues addressed in academic articles and experimenting with AI out of curiosity.

Area 3: The most used AI chatbots

The representatives of HEIs that participated in the survey claimed to use Chat GPT and Bing Chat. They also appeared to know Google Bard but not to use it their daily life.

Area 4: Perceptions on AI in the education process

Perceptions on AI in higher education vary based on the field in which AI is applied. While AI was in general valued for its efficiency in generating algorithms, particularly in computer science, opinions differed in its applicability to other fields such as political science, where human involvement is deemed irreplaceable. The intensified process of reaching multiple scientific sources was acknowledged, however concerns were raised about potential drawbacks, with worries that AI might contribute to complacency and laziness by eliminating the need for manual



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information searches (for instance, in a library). Overall, participants recognized AI's capacity to assist in data analysis and information retrieval, emphasizing its role in providing data for human reflection and decision-making.

Area 5: Strengths, Weaknesses, Opportunities, and Threats (SWOT) Analysis

Strengths: According to representatives of HEIs, AI presents several strengths in the field of higher education. Firstly, its ability to reach multiple scientific sources and process information at high speeds was highlighted. Secondly, mostly in technical and natural sciences AI is acknowledged for its potential to bring about substantial improvements, particularly in areas requiring meticulous research and subsequent development. Thirdly, the efficiency of AI in fast analysis of data resources was emphasized. In this context, it was seen as a valuable tool for searching and processing data.

Weaknesses: Concerns were expressed among HEIs' representatives about the potential risks associated with AI in the humanities and social sciences, indicating a nuanced perspective on its applicability across diverse academic disciplines.

Opportunities: In the view of HEIs' representatives, AI offers significant opportunities for higher education. Also, it may serve as a tool for accessing scientific sources and providing inspiration. It has the potential to enhance and expedite the education process and offers improvements in the search and processing of information. The capability of AI to process large volumes of data quickly was perceived a notable advantage.

Threats: Concerns include the potential lack of students' independent research owing to AI's access to information, which may lead to a lack of verification and an increased risk of scientific fraud. The absence of control mechanisms raises fears of a decline in students' knowledge and competences. A broader issue arises regarding the dependency on AI, potentially diminishing critical thinking skills and opening avenues for manipulation, replacing humans by machines and



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consequently leading to dehumanization. Universities may struggle in the future to keep up with rapid technological developments. A noteworthy threat is the knowledge disparity between students and lecturers. This poses a serious risk to the authority of educators as students gain proficiency in AI, which may potentially undermine the traditional teacher-student relationship.



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Conclusions

This study has examined the knowledge and perceptions of artificial intelligence tools among experts in the field, academic teachers and university administrators. Below are the main findings for each group of respondents.

Conclusions for the experts in the field: Experts highlighted the effectiveness of AI mostly in searching for information. Additionally, they envisaged AI as a valuable tool for academic teachers. However, they noted limitations in AI's comprehension capabilities, deficiency in grasping the nuances in certain questions, as well as lack of complex understanding characteristic for humans. Moreover, they raised concerns about potential misuse by students who might leverage AI for independent preparation of final theses.

Conclusions for academic teachers: AI serves as a beneficial tool in writing scientific projects, creation of graphic, searching for information, as well as for processing, and management of extensive information and data. In terms of knowledge acquisition, AI offers valuable insights into existing research, the current state of knowledge, and various research methods. However, concerns were raised as several participants have observed a potential risk in the higher education sector—namely, an overreliance on AI-generated information. This dependence might impede critical analysis by students. Other concerns were associated with intellectual property rights in educational contexts.

Conclusions for university administrators: In general, the efficiency of AI in algorithm generation was acknowledged. Participants highlighted AI's significance in facilitating data analysis and information retrieval as well as its role in providing data for human reflection and decision-making processes. However, concerns were raised about the impact of AI on students' independent research. The absence of control mechanisms also raises apprehensions about a potential decline in students' knowledge and competences. A more overarching issue is the potential overreliance on AI, which could erode critical thinking skills.



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Below are six areas with gaps or limits, which have been identified based on the in-depth interviews:

1 Ethical concerns. Respondents raised concerns about intellectual property rights and compliance with ethical standards in students’ assignments prepared with the help of artificial intelligence tools. Therefore, there is a need for implementation of control mechanisms that could identify whether an assignment has been written by artificial intelligence or not.

2 Concerns about privacy and the use of information. With growing significance of artificial intelligence, it is necessary that issues related to privacy be addressed among university staff and students.

3 Lack of training. There is a strong need for training for academic teachers and administrative staff on the use of artificial intelligence tools, which may be helpful not only in the teaching process, but also in the functioning of universities. This will inevitably lead to the development of new skills related to AI.

4 Concerns about dehumanization. In higher education, the contact between teachers and students is essential. Therefore, the implementation of artificial intelligence needs to be addressed in a sustainable way, with respect to knowledge, experience and expertise of academic teachers.

5 Reconciliation of artificial intelligence with conventional teaching methods. Materials need to be developed for academic teachers on how to adjust conventional teaching methods with the growing use of artificial intelligence.

6 Concerns about critical thinking. Growing reliance on artificial intelligence may lead to problems with critical thinking among students, insufficient verification of sources and spreading disinformation. Therefore, it is essential to raise awareness of these threats among students.



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Zarządzenie Nr 57/2023 Rektora Uniwersytetu Kardynała Stefana Wyszyńskiego w Warszawie z dnia 25 października 2023 r. w sprawie wykorzystywania w dydaktyce i nauce narzędzi opartych na sztucznej inteligencji.



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