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## **ROMANIAN STUDENTS' OPINIONS ON IMPLEMENTING ARTIFICIAL INTELLIGENCE IN HIGHER EDUCATION: A QUALITATIVE APPROACH**

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**ABSTRACT.** *This qualitative study addresses the perceptions of Romanian Social Sciences students regarding the implementation of Artificial Intelligence (AI) in Higher Education (HE), analysing the responses of 70 participants from three Romanian universities. The results highlight both recognition of AI's potential to transform education by improving access to information, personalizing learning, and enhancing academic performance, and concerns about technology dependence, ethical issues, data security, and impact on critical thinking and social interactions. While students appreciate the benefits of AI, such as administrative efficiency and improved learning and teaching process, they also express concerns about the loss of essential human skills and privacy and security risks. These findings underscore the importance of a balanced and ethical approach to adopting AI in educational contexts, emphasising the need for strategies that enhance technological benefits, while minimizing potential risks. The study suggests that HE institutions should concentrate on developing inclusive policies that consider the social and personal consequences of AI implementation, thus providing valuable directions for future educational research and policy.*

**KEYWORDS:** artificial intelligence (AI), higher education (HE), students' opinions, qualitative research, Romania.

*JEL classification:* I23, I25, O33.

## **Introduction**

In today's digital age, Artificial Intelligence (AI) has evolved to become a transformative factor in multiple fields, including medicine, industry, financial services and, last but not least, education. In the context of Higher Education, the implementation of AI promises to bring fundamental transformation, offering opportunities to personalise learning, streamline administrative processes and improve access to quality education (Țală *et al.*, 2024). However, this technological innovation comes with a number of challenges and risks, including concerns about data security and privacy, ethics of technology use, and the impact on students' social and emotional competencies (Duffett *et al.*, 2024).

It is therefore essential to understand students' perceptions and attitudes towards the implementation of AI in Higher Education, as they are the group most directly affected by these changes. This study aims to explore students' perceptions of Artificial Intelligence in academia, based on the following two research questions:

1. What is the students' opinion on the advantages and opportunities of implementing AI in Higher Education?
2. What is the students' opinion on the disadvantages and threats of implementing AI in Higher Education?

By analysing the responses of 70 students in Social Sciences from 3 generalist Romanian universities, the study identified major themes that reflect both opportunities and challenges associated with the implementation of AI in Higher Education. The results highlight a diversity of views, from recognition of improvements in learning, teaching and assessment, to concerns about reliance on technology and loss of valuable human interactions.

Thus, this study contributes to current debates about the role of AI in education, emphasising the need to balance technological innovation with ethical, social and personal considerations. By exploring Romanian students' attitudes towards AI in Higher Education, the paper provides valuable insights for policy makers, educators and technology developers, underlining the importance of a reflective and inclusive approach to the adoption of emerging technologies in education.

The article starts with a brief literature review that demonstrates the actuality and the debate that surrounds the topic. Furthermore, the relevant issues regarding students' opinions on advantages and disadvantages of AI in HE are discussed. The research methodology explains the data collection and data analysing process. Results and discussion section presents the findings and provides an explanation of these findings. The study ends with conclusions and recommendations.

## **1. Literature Review**

There is growing literature focusing on the ramifications of AI implementation in HE. There are relevant reasons that prompt this interest, which generate not only a heated debate, but also constant inquiry into this topic. The technological advancements are accelerated and there are so many issues which do not have a clear response, not to mention the fact that the consequences on people, businesses and society on the whole are not yet correctly interpreted

and measured. If AI is a blessing or a curse still divides scholars and the public equally, with consistent arguments on each side (Ally, 2020).

Artificial Intelligence (AI) “integrates several technologies that enable software, systems, machines, and devices to sense, perceive, develop, understand, and learn from their own experiences or enlarge human activities” (Ahmed *et al.*, 2022, p.5033). Its applications are endless, with enormous benefits and challenges.

For Education, mostly Higher Education, AI poses similar challenges. Inquiries on what, how and why AI in HE represent a relevant subject of analysis. In a systematic review of the literature (138 studies) that relates AI with HE, Crompton and Burke (2023) synthesize benefits of AI: AI can help to predict academic performance, project topics, dropouts and at-risk students, innovative ability, career decisions and the future of HE. AI assistants (virtual agents and persuasive intervention through digital programs) were used to support students in HE, to monitor the evolution of the learning process during student interaction with the system. ITS systems served as experienced tutors, providing tailored strategies characteristic to each student’s needs. In order to manage student learning, AI was used by administrators or instructors with the purpose of extracting learning data analysis, managing student big data to support learning, curriculum sequencing, instructional design and student clustering.

Studies devoted to students’ opinions, behaviours or attitudes towards AI in HE are numerous. Students are not only those asked to build AI, but also those who will work with AI, will lead business and society under the spectrum of technological advancements and AI development. How students relate to AI, what they consider as advantages, what disadvantages AI causes, what opportunities and threats they foresee represent research subjects to which many authors have dedicated numerous studies. Using surveys, studies concluded that the positive aspects that students relate to AI are in the area of teaching – learning process, in being connected, practically, to the world, in having access to information, in making decisions faster and more efficiently, in identifying trends and patterns, in facilitating academic administration or in improving personal well-being (Jeffrey, 2020; Keles, Aydin, 2021; Kumar, Raman, 2022; Almaraz-López *et al.*, 2023). A positive attitude of students is towards the relationship between AI and different categories of workers or people (for example, as it is in the health care area) (Syed, Basil al-Rawi, 2023). Students prefer to use new technologies in education due to the high level of interactivity that motivates them, increases their enthusiasm and enhances opportunities for experimentation and simulation (Kuleto *et al.*, 2021). As for the negative perceptions, same studies underline the risks of AI misuse, the negative effect on people’s privacy and security, the technology dependency which can generate decreased ability to solve problems independently (Almaraz-López *et al.*, 2023), destruction of humanity, or unemployment (Keles, Aydin, 2021).

A similar interest is expressed towards investigating the Romanian students’ opinions. From the role of facilitating conditions, which is perceived as a stronger incentive for using AI for educational purposes and which contrasts with the perceived risks and lack of confidence in new technologies (Duffett *et al.*, 2024), to the crucial role that AI plays in upgrading Higher Education by facilitating the personalization of learning, improving student performance and reducing errors (Bucea-Manea-Țoniș *et al.*, 2022), studies underline both the strengths and weakness that AI implementation in HE generates. There is a significant potential of creating a digital learning environment in Romanian universities, as the learning needs of generations Y and Z require the use of new technologies for educational purposes, from knowledge acquisition to experiments, students becoming more “sensitive to the ability of AI to test their real-life skills in a virtual space placed on the same wavelength as their own

needs” (Sirghi *et al.*, 2024, p.65). Significant positive receptivity towards AI is observed, with an impressive percentage of Education and Economics students supporting the inclusion of AI in entrepreneurship programs. This positive attitude is supported by a high interest in formal AI education, with marked curiosity for AI models and their potential to improve efficiency, inspiration, and even employment opportunities (Țală *et al.*, 2024). Additionally, acquiring technological knowledge and skills together with a mindset oriented towards innovation and creativity is essential not only for the labour market, but also for “higher living standards and longer lifespans” (Vodă *et al.*, 2022, p.15). Nevertheless, there are concerns about the negative impact of AI on cognitive abilities and about the risk of misinformation (Țală *et al.*, 2024), fears about job loss and the potential for productive collaborations between AI and humans (Fotea *et al.*, 2019), the possibility of AI posing risks to humanity (Gherheș, Obrad, 2018), “lack of a sense of community, student motivation and technostress” (Alexa *et al.*, 2022, p.28).

## **2. Research Methodology**

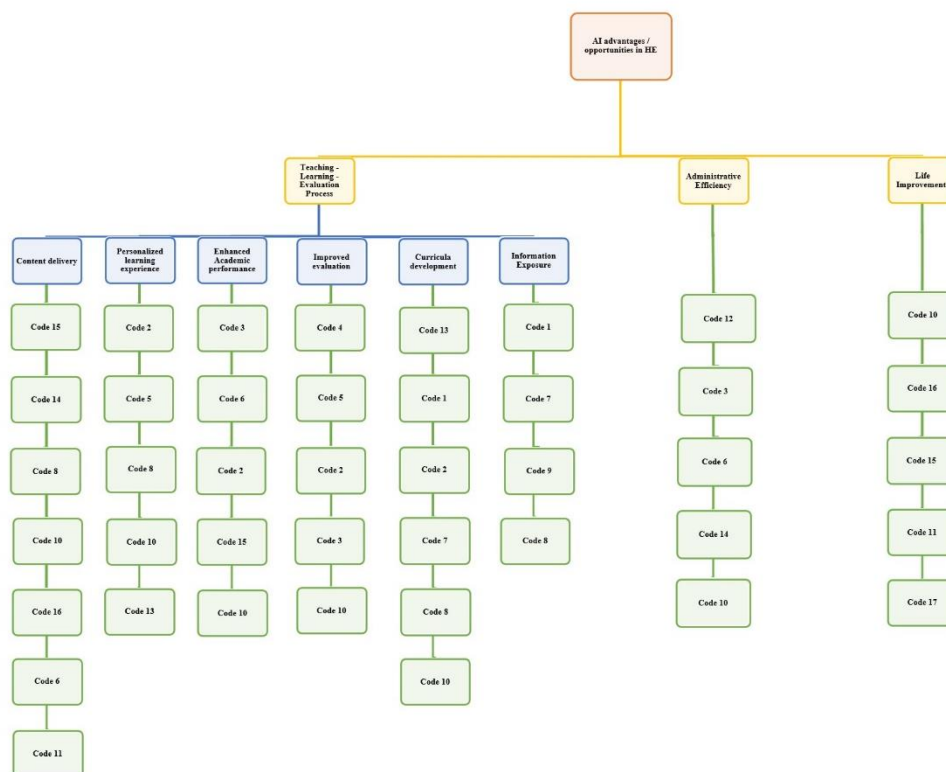
In order to delve into the viewpoints of students regarding the implementation of AI in Higher Education, qualitative research was employed. Given the exploratory nature of the research objective, as well as the intriguing character of the topic, qualitative methodology proved to be the most appropriate approach to uncover and understand opinions surrounding the research goal (Zaharia, Zaharia, 2017). The topic is highly debated and many studies have been developed on this topic following a qualitative approach, with the purpose of exploring the perceptions of different stakeholders of HE (Zawacki-Richter *et al.*, 2009; Gocen, Aydemir, 2020; Alzahrani, 2023; Jafari, Keykha, 2023; Pisica *et al.*, 2023).

The present research is part of a larger project that aims to investigate the opinions and attitudes of Romanian academics and students (Romanian and foreign) on implementing AI in HE (Pisica *et al.*, 2023). For this study, an online two open questions, using Google Forms, have been addressed. Students have been invited to express their opinion on (1) What are, in your opinion, the advantages and the opportunities of implementing AI in Higher Education? (2) What are, in your opinion, the disadvantages and threats of implementing AI in Higher Education?

The answers were collected during November and December 2023. 70 students responded, all of them being students in Social Sciences from 3 generalist Romanian universities. Students were informed about the purpose of the study, were asked to give answers as elaborate as possible (following the “why” approach) and all aspects related to ethical and privacy concerns have been addressed. After collecting data, the research team read the answers provided by the students. The team formed two groups, the first group consisting of two researchers, and the second group consisting of three researchers, and codified the answers. The coding process was manual (Björk and Kauppinen-Räsänen, 2012), because almost half of the students (32) did not provide elaborated answers, their answers being in the form of “in vivo codes” (Saldana, 2013). 6 students responded that “*no advantage/opportunity*” is gained by implementing AI in HE, and one student mentioned that there are advantages “*only for the professors*”. Researchers confronted their codes and established subthemes which have further been grouped in themes.

### 3. Results and Discussions

For the first question, “What are, in your opinion, the advantages and the opportunities of implementing AI in Higher Education?” codes that emerged are: information, adaptability, performance, evaluation, feedback, time management, diversity, attractivity, curiosity, support, communication, bureaucracy, new teaching methods, on line, facilitation, engaging (Annex 1). These codes generated the following sub-themes: Information exposure, Personalized learning experience, Enhanced academic performance, Curricula development, Content delivery, Improved evaluation, Administrative Efficiency, Life improvements. These subthemes have been further grouped into three major themes: (I) Learning – Teaching - Evaluation Process; (II) Administrative Efficiency, (III) Life Improvements. The results of the coding process and theme generation are presented in *Figure 1*.



Source: created by the authors.

Figure 1. AI Advantages and Opportunities in HE

#### ***(I) Learning – Teaching -Evaluation Process***

By far, students’ opinions are concentrated on aspects that are related to their primary activity in the university: the **teaching – learning – evaluation process** (the first theme). This is an expected result. Most of the students (59 out of 70) associate the benefits of technology, in general, with their needs and their generational characteristics (Z generation). Students appreciate the possibility of having access to information, in an easy, quick, inexpensive and organized way (**Information exposure**) and AI offers numerous possibilities for this (61 responses out of 70). S7: “If you need to find out something about a theory, for example, or if you want to find out the most important features, characteristics, reasons or whatever you

want, AI can instantly do that for you. I know, because I asked ChatGPT to tell me the reasons for the development of international organizations and it was a very good answer”.

**Personalized learning** was also among the top advantages offered by AI. 47 out of 70 students mentioned this advantage. S2: “AI can analyse student profiles and learning styles to provide personalized recommendations and learning materials tailored to individual needs”.

**Enhanced academic performance** was another advantage identified by students. 41 out of 70 mentioned that using AI tools, those students with lower performances can increase their performance as a result of accessing a wide range of examples, tutorials, more explanations, etc. As one of the students commented (S2): “AI might indicate underperforming areas and provide solutions to improve academic success”.

**Improved evaluation** was another subtheme that emerged from the students’ responses (26 answers out of 70). Z generation is considered to be a generation that is looking for regular feedback (Gabriellova, 2021, p.492). Feedback makes them understand the evaluation process, accept the evaluation and enhance their performance. Regular feedback is a challenge for each educator; therefore, AI tools can facilitate the process. Students commented in this respect: “AI can improve the assessment and feedback process by providing detailed and immediate information to students (S48); “AI can identify patterns and trends in students’ academic performance and provide personalized feedback and interventions to improve their results” (S4).

**Content delivery**, including online education, as well as methods throughout the content of the curricula was another advantage identified by students (14 answers out of 70). Z generation, as literature views those born after 2000 (similar to the students that have been involved in this study), is considered to be digitally natives (Prensky, 2001). As Prensky noted more than 20 years ago, they “spent less than 5,000 hours of their lives reading, but over 10,000 hours playing video games” (Prensky, 2001, p.1). For these students, content delivery is as important as the content itself (sometimes, even more important). In their opinion, “AI can facilitate the creation and distribution of innovative educational materials, such as interactive simulations or virtual reality-based lessons, that support active learning and student engagement “ (S4), “It would provide more interactive and engaging teaching and assessment opportunities, stimulating students’ interest in learning “ (S50); “has the ability to increase access to students who may not be able to attend traditional courses due to geographic or financial constraints (S24). AI offers “distance learning” (S16), “the possibility to be involved in different projects, without the necessity to be physically present in a certain location” (S24), and “...more people without financial possibilities could pursue higher education, because time can be problematic, many people cannot have the necessary time to be physically present, perhaps because of a job with too strict schedule, or they are helpless parents who have no one to leave their children with” (S49).

Advantages have been mentioned in relationship with **curricula development**. Students (11 out of 70) mentioned that implementing AI in HE can help to develop curricula by enriching it with new, up-to-date information, can adapt it to different level of understanding and can help educators to deliver it in a better way: “I believe that it could help to develop the courses and presenting some lectures in a more interesting and dynamic way” (S 62).

All in all, the theme **Teaching – Learning – Evaluation Process** is the area where students identified most of the advantages and opportunities. Several students provided answers that synthesize this aspect: “It can help personalize the learning experience by providing students with resources and materials tailored to their learning needs and pace. It

*can also improve the assessment and feedback process by providing detailed and immediate information to students.” (S48). “I think that the implementation of artificial intelligence in higher education could facilitate the teaching-learning-evaluation process” (S6); “AI tools can analyse each student's strengths, weaknesses and learning styles to create personalized learning plans” (S26), “The implementation of artificial intelligence would personalize the learning process, adapting to the pace and learning style of each student. It would provide more interactive and engaging teaching and assessment opportunities, stimulating students' interest in learning” (S60); “The implementation of artificial intelligence would personalize the learning process, adapting it to the pace and learning style of each student. It would provide more interactive and engaging teaching and assessment opportunities, stimulating students' interest in learning” (S50).*

Additionally, some aspects related to this theme can be discussed. The advantages and opportunities identified by the students are not sophisticated and do not demonstrate that the students went in their answers beyond the common discussion about the positive consequences of AI implementation in education, in general. For example, only few students mentioned the AI tools that can be beneficial to a new and insightful learning – teaching – evaluation process (S4 stated about virtual reality that can transform educational process). This assumption is in line with other results, which concluded that in education, in general, it is “a low level of concern regarding the current state and rhythm of developments in AI technologies” (Fotea, Fotea and Tundrea, 2019, p. 7). One possible explanation for these “standardized” answers can be related to the lack of depth regarding the benefits of implementing AI in HE, that spurs from a lack of use of AI tools in universities, or from a lack of interest that both universities, as institutions, and students showed to the application of the new technologies, in general, in the educational process. What is more, despite good internet coverage in Romania and a large IT workforce, Romania still has a less digitalized economy, in comparison with other EU countries (in 2022, Romania scored on the last place among EU countries on DESI indicator) (EU 2023). Moreover, Romania scores relatively low on digital skills compared to other EU countries (EU, 2022); students’ “current knowledge, perceptions and attitudes regarding AI are based rather on what they are exposed to on social media and the Internet” (Fotea, Fotea and Tundrea, 2019, p. 7). In other words, being digitally native is not similar to having digital competences (Li and Ranieri, 2010)!

Furthermore, an expected theme was **(II) Administrative Efficiency**. This group of advantages and opportunities relates to different bureaucratic aspects, outside the teaching – learning – evaluation process, that students interact with. 53 students out of 70 mentioned administrative efficiency as a benefit of implementing AI in HE. They appreciate that AI tools can reduce bureaucracy, facilitating access to information concerning their student life, allowing them to obtain documents and ensuring a better time management: “*AI can offer automate administrative processes such as registrations, assessments, or course scheduling, all of which reduce repetitive tasks and thus allow staff to focus on other aspects*” (S29). Sometimes, students feel restricted because of the work schedule of the secretariats and “*AI solutions can solve many problems, offering assistance to students in navigating through all these administrative procedures*” (S5). Accordingly, the problem of digitalization in the public sector is an important issue in Romania. As previously mentioned, Romania is a paradox, with good internet endowments, but a lack of digitalisation. Students would expect more from the universities in terms of applying new technologies in managing administrative aspects (not only). Universities, on the other hand, are bureaucratic organizations, consequently, the digitalization of the administrative procedures is a more complex process. It

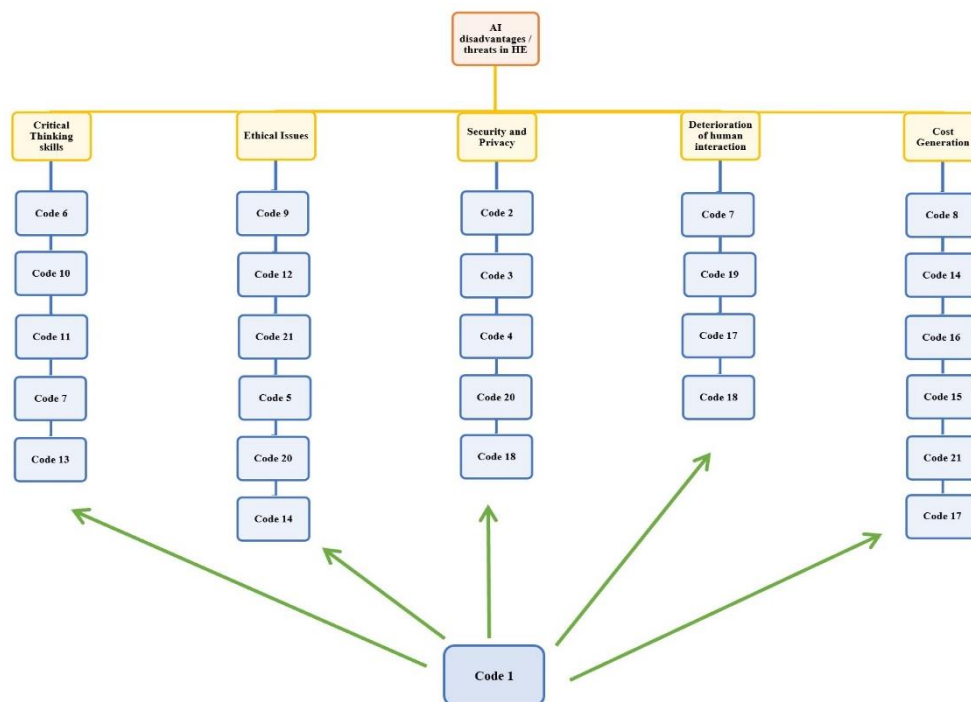


involves human and financial resources, as well as a strategic vision. Unfortunately, universities reflect the same level of digitalization as the economy.

The last theme identified after the coding process of the opinions expressed by students is **(III) Life improvements**. Codes that drove to this theme were related to quality-of-life and better jobs. It is interesting that only four students expressed an opinion on this aspect, two of them just mentioning contribution of AI to the quality of life or job developments, in general, without any explanation (“AI can have enormous potential in improving the quality of life”) (S30), (“I think much wider job opportunities could arise”) (S39). One student considered that: “I think AI makes people's activities much easier, and in this way every person will save time and spend it in a more pleasant way” (S12) and another one wrote about “a greater safety at work, creating personalized profiles for each student, therefore AI helps them find the right professional path” (S22).

Regarding the second question, (2) *What are, in your opinion, the disadvantages and threats of implementing AI in Higher Education?* the codes that emerged were dependency, security, privacy, confidentiality, manipulation, lack of thinking, lack of interaction, loss of jobs, misinformation, lack of creativity, lack of originality, unethical practices, confusion, inequality, uncertainty, expensive, isolation, vulnerability, lack of emotions, fake news, discrimination. 8 students did not consider that there are any disadvantages or threats. Only 30 students explained the disadvantages and threats, the rest just mentioned them.

One code, technology dependency, was considered a mega code, being related to all themes: Security and Privacy Issues, Ethical Issues, Critical Thinking Issues, Human Interaction Deterioration, Costs Generation. The results of the coding process and themes generation for the second question are presented in *Figure 2*.



Source: created by the authors.

**Figure 2. AI Disadvantages and Threats in HE**

One major concern of students focuses on **Critical Thinking Skills**. 37 students out of 70 commented on this aspect. Because of technology dependency, lack of trust in AI tools or AI capacity to provide data that are already analysed and interpreted, students consider that there are rather important threats and that technology dependency can affect critical thinking skills. *“The use of AI can lead to over-reliance on technology and the diminishing of human problem-solving and decision-making abilities”* (S4), *“Excessive dependence on technology may occur, at the expense of developing social skills and creativity”* (S50), *“I think that a threat would be the fact that I would no longer think alone”* (S37), *“It can be a risk, because of the dependence on technology, to no longer be able to think for ourselves, to no longer have points of view”* (S51). The fact that students are aware of the importance of critical thinking and that they regard technological advancement as a threat to critical thinking is significant information. Universities can develop strategies that use AI to increase critical thinking and, obviously, these strategies are supported by students.

Another concern was identified under the theme **Ethical Issues**. Students (31 out of 70) seem to be aware of the vulnerability in the face of AI algorithms, they manifest a lack of trust in technology that can generate discrimination, favour unethical practices and generate a feeling of anxiety, as other studies concluded (Pera, 2020; Höller *et al.*, 2023; Duffet *et al.*, 2024). Some answers were quite clear in this direction: *“AI algorithms may perpetuate or amplify existing prejudice and discrimination leading to unfair or discriminatory outcomes for certain groups or individuals”* (S4), *“Dependence on technology can lead to increasing inequalities”* (S14), *“It helps to cheat”* (S61).

Data security, privacy, confidentiality conducted to the theme **Security and Privacy**. This is a major concern for the entire society, from ordinary people to organizations and governments. Cyber-attacks have become part of the ordinary life and data theft, intrusion into personal life are constant challenges for everybody. Students are well-informed about these aspects and they acknowledge that being so dependent on technology, on using different devices that incorporate different elements of AI, may increase their vulnerability. 30 students mentioned in their responses this disadvantage. A funny response that reflects the technology dependency and data security was expressed by S 52: *“I consider the disadvantages to exist only if there is no Internet connection, weak signal or, in the case of a cyber-attack, the database and information are compromised”*. Other responses further underline these vulnerabilities: *“the insecurity that anything you see or hear might be fake. AI can be used to hurt, defame, and lie”* (S41), *“identity theft and intrusion into private life”* (S13).

**Deterioration of Human Interaction** is another theme that emerged from students' answers (28 answers out of 70). Likewise, this topic is an expected one. All the literature concerning consequences of AI, in general, mentions the threat of losing social skills, confusion between real life and virtual life, loneliness, anxiety and so on. Students mentioned many of these shortcomings: *“Lack of human interaction”* (S15), *“Lack of transmission of human emotion”* (S6), *“technology dependency can reduce socialization, teamwork and human emotions”* (S44), *“A downside could be over-reliance on technology, which could reduce human interaction and social skills”* (S48).

The last theme, **Cost Generation**, mentioned by 26 students, involves mostly concerns related to job loss, as the costliest consequence generated by AI. Commonly, there is this general fear that AI and robots will replace people, even if many studies demonstrated that AI, in fact, conduces to increasing jobs (Tschang, Almirall, 2021). Other than forming skills and competencies, universities should play a key role in shaping the mentality that AI is an instrument and it is in the humans' power and human responsibility to use AI in the humans'

interests. This is a process which should be accelerated in order to keep pace with the technological advancements. One student expresses this fear: *“dependence on technology will lead to the loss of jobs in favour of robots”* (S39). 14 of them associated losing jobs with losing privacy and data security. Example: *“Loss of data, loss of jobs, loss of identity”* (S 23). Three students associated AI implementations with high costs: *“to implement AI in HE means to spend a lot of money and not all universities have this money”* (S9). This is an interesting observation and even if the response does not directly associate the cost of implementing of AI with marginalization or inequalities, it is unquestionable that those who will not be able to keep the pace with technological advancement will lose the competition with the rest of the competitors.

Some answers summarize disadvantages and threats caused by implementing AI in HE: *“Disadvantages and threats associated with the implementation of AI in HE include data security risks, potential job loss for certain activities, possible negative effects generated by algorithmic lack of fairness and transparency, and impact on privacy”* (S8), *“The implementation of AI can raise questions related to data security, loss of jobs in certain fields, increasing inequality in education and accentuating social and economic discrepancies if access to technology is not equitable”* (S38), *“The main threat: dependence on AI solutions. Then, the deterioration of teamwork, the isolation of the subject in the relationship with colleagues/community; laziness of the mind; lack of stimulation for imagination as a cognitive process”* (S57).

#### **4. Limits of the Research**

This study is qualitative research, and its purpose was to have a better understanding of the students' opinions regarding implementing AI in HE. As it is in the nature of qualitative research, the results have to be interpreted from their explorative nature and cannot be generalized for all Social Sciences Romanian students. What is more, this research showed that open questions do not necessary stimulate students' appetite for elaborated answers, as they preferred to be very concise. However, the information provided by this study can open further avenues for research which could use different methods for collecting data, employ representative sample or target comparative analysis between countries or between students who study in different fields. This study adds to the literature with empirical data and demonstrates that this topic is still in its infancy and needs more inquiries. Technology develops much faster than the ability to investigate the consequences of its application and, therefore, any investigation into how and why different categories of people react to technological progress is relevant.

#### **Conclusions and Recommendations**

This study aimed to investigate the opinions of the Social Sciences Romanian students regarding the implementation of AI in HE, namely the advantages and opportunities, respectively disadvantages and threats of implementing AI in Higher Education. By employing qualitative research based on open questions distributed via Google forms, the responses of 70 students have been analysed. Interesting conclusions result from the inquiry.

In terms of advantages and opportunities, the students' opinions concentrate by far in the area of teaching – learning – evaluation process, which is an expected result. On the second place was Administrative Efficiency and on the third place, with only 4 responses,

Life Improvements. However, students did not elaborate too much on their responses and did not justify their opinions, despite the fact that the instructions provided for the research insisted on these explanations. Many of them offered standardized answers, confirming the results of other studies which consider that either students are not very familiar with what AI really means, or that their real interest on this topic is superficial. Reasons are related to students' rather low digital skills (proved by statistical data previously mentioned in this study) and to an inadequate institutional policy regarding implementing AI in HE. HE institutions need to look more seriously into the process of implementing AI and to provide students, academics and administrative staff with a correct approach towards possible consequences of AI in professional and personal life.

With regard to the disadvantages and threats coming from implementing AI in HE, expected results have been received. Students are concerned about the threats of losing critical thinking skill, about privacy and security, about ethical issues, about perspectives on human interactions and the costs generated by AI. Some of these threats can be attenuated at university level. Universities can implement strategies aiming to increase critical thinking, to enforce the ethical behaviour of students or to increase human interactions through teamwork, for instance, as they acknowledge the risks posed by AI. Other threats are to be mitigated at a larger scale. Data privacy and costs are concerns that require a larger approach, at the level of public policies. Investments in protection against cyber-attacks are present all over the world and each government and each institution try to develop the safest algorithms capable so as to offer the best protection that staff and students can have. Cost generated by AI identified by students (mostly related to losing jobs) can also be reduced by public policies that encourage and support lifelong learning or professional reconversion programs.

This study also draws useful conclusions and recommendations for further research. It is obvious that this generation (Z generation) has particularities that require a different approach, in research as well. Since they tend not to spend too much time on a subject, to get bored quickly and to be superficial (Schmitt, Lancaster, 2019; Tirocchi, 2024), for exploratory purposes new research methodology instruments need to be developed in order to stimulate them to convey their inner feelings, reasons, attitudes and opinions.

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## **RUMUNŲ STUDENTŲ NUOMONĖ APIE DIRBTINIO INTELEKTO DIEGIMĄ AUKŠTAJAME MOKSLE: KOKYBINIS METODAS**

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### **SANTRAUKA**

Šiame kokybiniame tyrime nagrinėjamas Rumunijos socialinių mokslų studentų požiūris į dirbtinio intelekto (DI) diegimą aukštajame moksle. Analizuojami 70 dalyvių iš trijų Rumunijos universitetų atsakymai. Rezultatai rodo, kad pripažįstama, jog dirbtinis intelektas gali pakeisti švietimą gerindamas prieigą prie informacijos, individualizuodamas mokymąsi ir gerindamas akademinį rezultatą, tačiau sykiu išreiškiamas susirūpinimas dėl priklausomybės nuo technologijų, etinių klausimų, duomenų saugumo ir poveikio kritiniam mąstymui ir socialinei sąveikai. Nors studentai vertina AI teikiamą naudą, pavyzdžiui, administracinę veiksmingumą ir geresnį mokymosi ir mokymo procesą, jie taip pat reiškia susirūpinimą dėl esminių žmogiškųjų įgūdžių praradimo ir privatumo bei saugumo rizikos. Šios išvados pabrėžia subalansuoto ir etiško požiūrio į dirbtinio intelekto diegimo švietimo kontekste svarbą, akcentuojant poreikį kurti strategijas, kurios didintų technologinę naudą ir mažintų galimą riziką. Tyrime siūloma, kad aukštojo mokslo institucijos turėtų sutelkti dėmesį į įtraukios politikos, kurioje atsižvelgiama į socialines ir asmenines dirbtinio intelekto diegimo pasekmes, kūrimą, taip suteikiant vertingų kryptų būsimiems švietimo tyrimams ir politikai. Tyrimas praplečia esamą literatūrą šia tema, patvirtinamas kai kurios literatūroje pateiktos išvados ir pabrėžiama tai, kad dirbtinio intelekto diegimo aukštojo mokykloje temą aukštojo mokslo institucijose reikia vertinti labai rimtai.

**REIKŠMINIAI ŽODŽIAI:** dirbtinis intelektas (DI); aukštasis mokslas; studentų nuomonė; kokybiniai tyrimai; Rumunija.

*Appendix 1. Coded List of Artificial Intelligence Advantages and Opportunities in Higher Education*

Code number	Code title
<b>Code 1</b>	Information
<b>Code 2</b>	Adaptability
<b>Code 3</b>	Performance
<b>Code 4</b>	Evaluation
<b>Code 5</b>	Feedback
<b>Code 6</b>	Time management
<b>Code 7</b>	Diversity
<b>Code 8</b>	Attractivity
<b>Code 9</b>	Curiosity
<b>Code 10</b>	Support
<b>Code 11</b>	Communication
<b>Code 12</b>	Bureaucracy
<b>Code 13</b>	New teaching methods
<b>Code 14</b>	On Line
<b>Code 15</b>	Facilitation
<b>Code 16</b>	Engaging

*Source:* created by the authors.

*Appendix 2: Coded List of Artificial Intelligence Disadvantages and Threats in Higher Education*

Code number	Code title
<b>Code 1</b>	Technology dependency
<b>Code 2</b>	Security
<b>Code 3</b>	Privacy
<b>Code 4</b>	Confidentiality
<b>Code 5</b>	Manipulation
<b>Code 6</b>	Lack of thinking
<b>Code 7</b>	Lack of interaction
<b>Code 8</b>	Loss of jobs
<b>Code 9</b>	Misinformation
<b>Code 10</b>	Lack of creativity
<b>Code 11</b>	Lack of originality
<b>Code 12</b>	Unethical practices
<b>Code 13</b>	Confusion
<b>Code 14</b>	Insecurity
<b>Code 15</b>	Uncertainty
<b>Code 16</b>	Expensive
<b>Code 17</b>	Isolation
<b>Code 18</b>	Vulnerability
<b>Code 19</b>	Lack of emotions
<b>Code 20</b>	Fake news
<b>Code 21</b>	Discrimination

*Source:* created by the authors.