



Characteristics of the Use of Artificial Intelligence among Hungarian Communication and Media University Students

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Abstract. This study examines the integration of artificial intelligence (AI) in journalism, higher education, and communication and media studies, focusing on its use among Hungarian university students. Through a survey of 1,201 students, including 138 communication and media majors, the research explores AI's impact on educational practices, ethical concerns, and its potential to enhance learning. The findings highlight AI's transformative role in content creation, personalized learning, and data analysis while addressing challenges such as ethical issues, algorithmic bias, and job displacement concerns.

Keywords: artificial intelligence, education, Hungary, communication and media science, survey

1. Introduction

The emergence of artificial intelligence (AI) has dramatically transformed numerous sectors, and journalism, higher education, and communication and media studies are no exceptions. Over the past decade, AI has made

significant inroads into journalism, revolutionizing content production, news personalization, and data analysis. AI technologies, such as machine learning, natural language processing, and automated content generation, are increasingly shaping the way news is gathered, reported, and consumed. The integration of AI into newsrooms not only enhances the efficiency of journalists by automating repetitive tasks, but it also opens up new possibilities for real-time data analysis, audience targeting, and content customization. This technological shift has sparked significant debates about the role of AI in maintaining journalistic integrity, ethical standards, and the human element of storytelling. Furthermore, concerns have arisen regarding the potential displacement of traditional journalistic jobs and the impact of algorithmic bias on news reporting.

In higher education, AI has become a pivotal tool in both teaching and learning, impacting how students engage with the content and how educators deliver materials. AI-driven platforms are transforming traditional classroom settings by enabling personalized learning experiences, facilitating data-driven decision making, and providing innovative methods for knowledge dissemination. In the context of communication and media studies, AI's influence is evident in the evolving curriculum and pedagogy. Academic institutions are increasingly incorporating AI technologies into their teaching methods, preparing students for a rapidly changing media landscape. This shift necessitates a rethinking of educational practices, as AI presents both challenges and opportunities in shaping the future of media literacy, critical thinking, and the development of essential skills for the digital age.

This article explores the intersection of AI with journalism, higher education, and communication and media studies, highlighting how AI has reshaped these domains and continues to influence their development. By examining the opportunities and challenges AI presents in each area, this research aims to provide insights into the evolving relationship between technology, education, and media. The paper also investigates the ethical implications, societal impacts, and prospects of AI in these fields, contributing to the ongoing discourse about the role of technology in shaping contemporary journalism and education.

The objective of this study is to investigate the extent and nature of artificial intelligence (AI) usage among Hungarian university students, specifically communication and media majors, in their educational practices. It aims to identify the AI tools employed, the domains of application, student preferences for future AI use, and the barriers hindering adoption, while exploring the implications for journalism, higher education, and communication and media studies.

2. Literature Review

2.1. Journalism and Artificial Intelligence

The media industry is undergoing a significant transformation, driven largely by advancements in artificial intelligence (AI). This transformation, already underway, is accelerating with the development of AI technologies that offer smarter and more efficient systems. AI has greatly enhanced content production, personalization of news services, and real-time data analysis in journalism (Pavlik 2023). A key milestone in this shift was the launch of ChatGPT in 2022, which gained 100 million active users within just two months. ChatGPT and similar AI systems have the potential to fundamentally alter journalism by automating content creation and producing text that is contextually relevant and coherent (Nishal–Diakopoulos 2023, Simon 2022).

However, the integration of AI into the media also raises significant ethical and privacy concerns. These include the potential for AI-generated disinformation, such as deepfakes, which can erode public trust in news sources. Additionally, automated content generation often fails to account for cultural sensitivity and ethical considerations, creating challenges for the media ecosystem (Pelau–Dabija–Ene 2021). The rapid spread of AI in journalism is further complicated by regulatory debates on how to ensure ethical standards, such as transparency, accountability, and fairness, in AI-driven content.

While AI's influence on media and journalism has been a focus of research for years, the launch of ChatGPT has intensified academic interest, especially in its impact on media production, distribution, and journalistic roles (Ribeiro–Lima–Eckhardt–Paiva 2021, Yang–Ogata–Matsui–Chen 2021). According to a report by Goldman Sachs, AI could contribute to a 7% annual growth in global GDP over the next decade, with varying impacts across different regions. North America, which accounted for 39% of AI usage in media in 2021, is expected to remain the leader in AI adoption, while regions like the Global South may face challenges in benefiting from these advancements (de-Lima-Santos–Yeung–Dodds 2025). The market for AI in the media and entertainment industry is expected to grow to \$124.48 billion by 2028. However, legal issues, particularly related to copyright, are emerging, with companies like the New York Times filing lawsuits against AI firms like OpenAI for infringement (Newman 2024).

The growing role of AI in journalism is reshaping the way news is gathered, reported, and consumed. Automation tools are improving efficiency by handling routine tasks such as data collection and organizing large datasets, which has the potential to revolutionize newsrooms (Diakopoulos 2019). Despite these benefits, concerns about AI's ethical impact are increasing. Issues like algorithmic bias, lack of transparency, and the undermining of journalistic integrity must be

addressed (Túñez-López-Fieiras-Ceide-Vaz-Álvarez 2021, Walters 2022). AI-driven content creation tools, such as Pinpoint AI and Narrativa AI, have improved news gathering and fact checking, but the need for editorial independence and transparency is more critical than ever.

Journalists' views on AI tools are mixed. While many see AI as a tool that enhances creativity and efficiency, others fear that automation could lead to job losses (Machado López-Soto-Sanfiel-Ibiti-Marín Ochoa-Mendoza Michilot-Rosell Arce-Angulo-Brunet 2022, Sun-Hu-Wu 2022). Educational institutions like the University of Southern California's Annenberg School and professional organizations such as the Society of Professional Journalists are offering training programmes to help journalists adapt to AI technologies and maintain ethical standards.

The rapid evolution of AI is transforming journalism as both a practice and a profession. Researchers are exploring how AI is redefining journalistic roles, with an emphasis on its positive and negative impacts (Hanitzsch 2017, Hanitzsch-Ahva-Oller Alonso-Arroyave-Hermans-Hovden-Hughes-Josephi-Ramaprasad-Shapiro-Vos-Hanusch-de Beer 2019). AI in journalism can increase efficiency, improve content personalization, and enhance data-driven reporting, but it also presents significant challenges such as the risk of bias and job displacement.

AI's positive impact on journalism includes streamlining routine tasks, enabling deeper investigations, and improving data analysis in areas like election reporting and financial journalism. AI algorithms are capable of processing large datasets and identifying trends and patterns that would be hard for humans to detect, making them invaluable for breaking news and live reporting (Nurelmadina-Hasan-Memon-Saeed-Zainol Ariffin-Ali-Hassan 2021). Furthermore, AI-powered news personalization helps tailor content to individual preferences by analysing user behaviour (Verma 2024).

On the other hand, the negative effects of AI in journalism are becoming more apparent. The use of AI to select and prioritize news stories can perpetuate biases, as algorithms may unintentionally favour certain perspectives or sources (Verma 2024). This raises concerns about transparency and accountability in AI-driven journalism. Moreover, as AI systems become more capable, there is a growing fear that they could replace human journalists, particularly in routine reporting and data analysis, leading to job losses. The rise of deepfakes and other AI-generated synthetic media also poses significant risks to the credibility of news, as AI could be used to spread disinformation and manipulate public opinion.

In conclusion, while AI has the potential to revolutionize journalism by enhancing efficiency, personalization, and data analysis, it also brings complex ethical, legal, and social challenges. The media industry must carefully navigate these issues to ensure that AI is used responsibly, transparently, and in a way that

upholds the integrity of journalism. Balancing the positive and negative effects of AI will be crucial in shaping the future of the media landscape.

2.2. The Emergence and Application of Artificial Intelligence in Higher Education

The rise and rapid development of artificial intelligence (AI) has triggered one of the most significant transformation processes of our time. The increasing presence of AI is not only having a profound impact on everyday life but is also bringing fundamental changes to various sectors such as science, economics, healthcare, commerce, and culture. Education is no exception to these trends, with particularly intense discourse unfolding around the role of AI and its future integration possibilities within the educational field. Many questions arise within the realm of education: how can AI be incorporated into educational systems in the long term, and what kind of structural, pedagogical, or value-based changes can be expected as a result?

Social attitudes towards AI are strongly divided. Some perceive significant risks in the application of AI, expressing distrust and criticism towards the spread of the technology, while others view it as an opportunity that opens new horizons for teaching and learning (Baditzné-Jakab 2023). The latest AI-based tools not only offer innovative technological solutions for educational stakeholders but also influence perspectives, creating new interpretative frameworks for educational practices.

Integrating AI into educational environments offers opportunities for more targeted development of student skills, while also providing significant support for educators in the creation, customization, and presentation of educational content (Szűts-Námesztovszki 2023). However, the significance of AI extends beyond mere tools: it heralds a deeper, paradigmatic shift that not only offers new opportunities but also presents serious challenges for all parties involved in the educational system, particularly those within higher education.

Since the launch of ChatGPT in 2022, the possibility of this new technology fundamentally reshaping the world of teaching and learning in the long term has become increasingly clear. It is expected to bring changes across various aspects, including better meeting individual student needs, renewing pedagogical methods, and improving the efficiency of educational systems (Dietz 2020). Over the past two years, an extensive body of both domestic and international literature has emerged on this topic, and interest continues to grow with new studies constantly being published. These works analyse the relationship between AI and education from various perspectives, exploring both its advantages and the challenges and risks associated with its use.

In his study *Exploratory Literature Review on the Educational Use of Artificial Intelligence* (Horváth 2023), László Horváth seeks to demonstrate the emergence of AI in educational discourse and map out its potential applications in pedagogical practice. When exploring the characteristics of scientific dialogue, he references Bearman's (2023) research, which categorizes the discourses in the literature into two main directions. According to one viewpoint, AI brings about comprehensive changes in education that necessitate the continuous adaptation of educational actors and institutions, thus a form of transformative change that imposes itself. The second approach emphasizes that with the advent of AI, traditional teacher roles and power structures are undergoing transformation, with new forms of task division emerging, where teachers, students, and machines all become active participants (Horváth 2023).

Horváth's analysis also emphasizes the interpretation of role changes and identifies two possible approaches within the literature: one focuses on the changing role of educators and the other on the evolving function of AI within education. Since AI is interdisciplinary, these two areas are closely intertwined, mutually influencing each other (Horváth 2023).

Various perspectives exist in the literature regarding the transformation of teacher roles due to AI, which could fundamentally reshape the functioning of education in the long run. Daugherty and Wilson (2018) outline a general model that differentiates three role categories. The first includes tasks that only humans can perform, which remain essential in the long term, such as empathy-based activities. The second category includes functions where machines, particularly AI, are more efficient than humans. The third category encompasses hybrid activities, based on human-machine collaboration. This includes tasks like teaching AI systems, creating databases, and situations where intelligent technologies complement and support human abilities (Daugherty–Wilson 2018, cited by Horváth 2023).

Celik (2022) suggests that AI's development poses fundamentally new challenges and tasks for educators. To increase the effectiveness of AI-based education, teachers provide data to systems, some of which come from their own professional development, while others are derived from students' performance. Additionally, teachers participate in developing assessment criteria and verifying outcomes to ensure the authenticity and quality of educational processes. Furthermore, their technological competence plays a crucial role in introducing and integrating AI tools into teaching practices (Celik–Dindar–Muukkonen–Järvelä 2022, cited by Horváth 2023).

In addition to the transformation of teacher roles, AI itself plays a key role in the teaching and learning process. Xu and Ouyang (2022) distinguish three main functions through which AI can contribute to supporting education. The first is its direct mediating role, where AI facilitates interaction between teachers and students by providing personalized feedback, evaluating student performance,

and adjusting the learning process to meet individual needs. The second function is its supportive assistant role, where AI collaborates with both educators and students to assist learning processes, support group work, and encourage effective communication between learners. Lastly, AI can play the role of a beginner learning partner, where students take a more active role, teaching the system, which in turn enhances their competencies, deepens their understanding, and facilitates the application of practical knowledge (Xu–Ouyang 2022, cited by Horváth 2023).

Most of the literature, including Horváth's work, specifically highlights that the emergence of AI in education is not without its challenges. While it offers numerous opportunities, new challenges and risks have emerged in pedagogical processes, as well as limitations within the system. These include concerns related to personal data protection, ethical issues, and copyright, which not only raise difficulties in terms of AI's role in education but also present general problems across various fields. Additionally, reliability and accuracy remain significant concerns, as feedback often requires post-review and correction. Furthermore, both students and educators must maintain an openness to learning and mastering these systems, as well as trust in the correctness of the feedback received. It is crucial that educational institutions and policymakers recognize these challenges and develop appropriate strategies to address them (Horváth 2023).

In his study, Tamás Bokor (2023) examines the application of artificial intelligence in education, with particular attention to literature trends, challenges, and consequences. He categorizes the literature into two main groups: one containing present-oriented writings that provide practical guidance to educational stakeholders on the use of AI to support learning processes and the other comprising future-oriented studies that explore the long-term effects and questions regarding AI (Bokor 2023). Based on the work of Lu and Harris (2018, cited by Bokor 2023), Bokor identifies four areas for AI applications in education. The first is intelligent tutoring systems, which provide personalized learning and feedback. The second is the customization of the learning process, including adjusting content and pace to individual needs. The third area is the use of adaptive assessment systems, which enable assessments tailored to students' capabilities. The fourth area is the automation of educational administration, which can significantly reduce educators' workload.

2.3. The Spread of AI Applications in Higher Education

Artificial intelligence platforms are constantly evolving, with new systems emerging daily that not only support learning processes but also play an increasingly significant role in content creation across various areas of education. Among the wide range of AI tools, ChatGPT, particularly its free version released in 2022, continues to lead. This is due to its user-friendly design, advanced text

generation capabilities, and the sudden surge in popularity of AI technologies, which has led to a high number of registrations. Following its launch, the platform quickly sparked significant interest in the academic sphere: in December 2022, just one month after ChatGPT's debut, 128,402 visits to the site were recorded from the Wi-Fi networks of eight leading UK universities. By January 2023, this number had skyrocketed to 982,809, clearly demonstrating the technology's rapid adoption (Snepvangers 2023, cited in Rajki–T. Nagy–Dringó-Horváth 2024). According to an April 2023 survey, 47% of students at the University of Cambridge had used ChatGPT in their studies, with many considering the tool at least as useful as their instructors' knowledge or library resources (Rajki–T. Nagy–Dringó-Horváth 2024). The Russell Group, comprising 24 leading UK research universities, responded to the rise of ChatGPT and AI's role in education with varied approaches. While some universities supported the integration of AI tools, others advocated for restricting their use. More open-minded institutions, such as the University of Glasgow and University College London, encouraged students to explore ChatGPT's functionality, benefits, and limitations, with the aim of promoting transparent, ethical, and responsible use. To this end, the Russell Group outlined five principles in July 2023:

1. Expanding knowledge about AI among both students and educators.
2. Preparing educators to support the development of students' AI literacy.
3. Encouraging the ethical use of AI tools, ensuring equal access and preserving individual approaches.
4. Maintaining academic rigour and integrity as a fundamental goal.
5. Promoting collaboration between universities to share best practices (Russell Group 2023, cited in Rajki–T. Nagy–Dringó-Horváth 2024).

American universities also responded to the rapid spread of AI. Initially, bans were common, but the need for adaptation and integration was soon recognized. Responses included redesigning student assignments to align with the new technological environment (Rajki–T. Nagy–Dringó-Horváth 2024). A study by Caulfield examining 100 leading U.S. universities found the following:

- 27% had no clear guidelines on the use of ChatGPT.
- 51% allowed individual course instructors to define the use of AI tools in their syllabi.
- 4% permitted the free use of AI with proper citation.
- 18% explicitly prohibited its use.

However, most institutions allowed instructors to decide individually how to incorporate AI into their courses. Additionally, alternative assessment methods, such as oral exams or paper-based assignments, began to be favoured. These measures aim to ensure that education adapts flexibly and creatively to the new challenges and opportunities presented by the emergence of artificial intelligence (Caulfield 2023, cited in Rajki–T. Nagy–Dringó-Horváth 2024).

2.4. Artificial Intelligence in Communication and Media Studies

The rapid development of artificial intelligence is particularly pronounced in interdisciplinary fields, with communication and media studies being of key significance. Graduates in this field are likely to encounter AI technologies in the job market and will need to actively use them. Therefore, it is essential for students to become familiar with the fundamentals of these systems during their education and to prepare for new professional challenges and opportunities. AI-based applications can provide effective support in text creation, the development of creative writing, and navigating various genres, all of which are critical skills in communication and media studies. Integrating modern technologies into education has a motivating effect, as this generation is particularly receptive to such innovations, and students in this field have a strong demand for them.

Our study is accompanied by a brief overview of empirical research and the sharing of experiences conducted within the framework of the writing skills course at the Institute of Communication and Media Studies at Pázmány Péter Catholic University (Dornics 2025). The writing skills course is a practical class for first-year communication and media studies students, focusing on mastering the basics of text creation and the smallest linguistic units of texts. This course provides an excellent opportunity to empirically examine the impact of AI on students' learning processes, performance, and motivation. The study focused on questions such as the current applications of AI in university education, particularly within the communication and media studies programme, and how various AI applications, specifically ChatGPT, can be integrated into teaching and learning processes, primarily in the creation of media texts. The research also analysed specific task types where ChatGPT can be effectively applied and drew conclusions based on the findings.

The study placed particular emphasis on text creation processes, the pedagogical presentation of linguistic styles, media genres, and various text types. Using AI tools, students were able to explore different linguistic styles and media genres via generated texts and to actively participate in the text creation process. The tasks involved detailed analyses of both the texts generated by ChatGPT and the students' own writings. This approach encourages active student participation, as the instructor not only presents the characteristics of different styles and genres through illustrative examples but also creates opportunities for students to engage actively in the text creation process. Raising awareness of genre and stylistic differences helps students recognize distinctions between various writing techniques and provides opportunities for the practical application of stylistic features. Accordingly, AI tools serve a pedagogical support function, contributing to the efficiency of the teaching and learning process. The study also examined the quality of prompts formulated by students, as well as the content, stylistic, and

structural characteristics of the generated texts. The comparative analysis aimed to explore the extent to which AI can support students' creative and critical thinking and how it can contribute to the development of text creation skills (Dornics 2025).

Research findings indicate that AI-based tools offer significant opportunities for education, particularly in the field of communication and media studies. The integration of AI not only supports the development of text creation skills but also enhances students' creative and critical thinking. The applied tasks demonstrated that ChatGPT could be effectively used to present various linguistic styles and media genres in writing skills education. The generated texts enabled active student involvement, thereby enriching the educational process and toolkit. However, the future challenge lies in how educational systems can preserve human values while continuously adapting to the development of AI technologies and the new expectations arising from them. Results suggest that AI is not a replacement for but a complement to human-centred education provided it is consciously and purposefully integrated into teaching and learning processes.

3. Research Methodology and Data Collection

The sampling targeted higher education institutions at the institute and department levels that offered undergraduate, master's, or PhD programmes in the humanities, social sciences, or education, in both full-time and correspondence modes. Students were reached via e-mail and Facebook. The online questionnaire was available on the Survio.com platform between 14 September and 14 October 2023. The self-designed questionnaire consisted of 27 questions, including open-ended, closed-ended, single-choice, and multiple-choice items, as well as Likert-scale items. A total of 1,201 individuals completed the questionnaire. Except for a few students participating in higher vocational education, all respondents studied at a university or college; however, 1,027 of them belonged to the fields of study we examined, i.e. students majoring in humanities, social sciences, or pedagogy. Of the respondents relevant to the research, 53.8% studied at PPKE BTK, 13.5% at János Kodolányi University, 8.4% at Ferenc Gál University, and 24.3% at other higher education institutions.

Regarding the composition of the respondents, this study focuses on students majoring in communication and media. The questionnaire was completed by 138 communication and media students, 95.7% of whom were pursuing a bachelor's degree and 4.3% a master's degree. Eighty-seven per cent were full-time while thirteen per cent were part-time students. Regarding the age distribution of our sample, more than 80% (80.4%) were between 18 and 22 years old, 15.2% were between 23 and 30 years old, and 4.3% were aged 31 or older. 44.2% of our sample did not work, 39.9% worked part-time, and 15.9% worked full-time in

addition to their university studies. Regarding the gender ratio, almost three-quarters (72.5%) of communication and media students were women, while the proportion of men barely exceeded 25% (27.5%).

Regarding the socio-demographic variables, the chi-square test revealed a significant difference between students majoring in communication and media and those studying other humanities, social sciences, and pedagogy majors. A significantly higher proportion of communication students were men (27.5% vs 19.9%), undergraduate students (95.7% vs 81.2%), full-time students (87% vs 62.1%), and those aged 18–22 (80.4% vs 50.3%). Students who did not work alongside their studies (44.2% vs 36.2%) were also more common among communication students than among their peers in other majors. The data were processed using SPSS software, and Excel was used to create the figures.

3.1. Analytical Procedures and Statistical Methods

The empirical analysis was conducted using *IBM SPSS Statistics 28*, and figures were created in *Microsoft Excel*. The data processing followed several steps. First, *descriptive statistics* and *cross-tabulations* were conducted to explore the main socio-demographic characteristics (gender, age, employment status, level and form of study, and field of study). Then, *chi-square (χ^2) tests* were applied to identify statistically significant differences between communication and media students and other students in social science or humanities. The level of significance was set at $p < .05$ in all cases. To control for background effects and examine the combined influence of several variables, a *binary* or *multinomial logistic regression model* was used. The *dependent variables* represented the main indicators of AI use (e.g. the number of AI tools used, the fields of application in education, and the number of inhibiting factors mentioned). The *independent variables* included gender, age group, employment status, form of study (full-time or part-time), and field of study (communication and media vs other humanities and social sciences). Model fit was tested using *Nagelkerke R^2* and *Cox–Snell R^2* values, as well as *Likelihood Ratio tests*.

4. Research Results

4.1. Where and in What Form Have Students Encountered the Concept of Artificial Intelligence?

Based on the data in *Figure 1*, one-fifth of the responding communication and media students in education have not yet encountered any artificial-intelligence-based application. This is a relatively high value since one of the hottest topics in

2023 was the rise of AI devices. Thus, this problem appears in some form in the field of education, especially in higher education.

When analysing the results, however, we must consider that the data collection took place directly in the first weeks of the school year, and nearly 63.8% of those who filled out the questionnaire were first-year undergraduate students, the vast majority of whom were probably recent graduates. On the other hand, the instructors may not have specifically addressed the issue of using AI in their course descriptions.

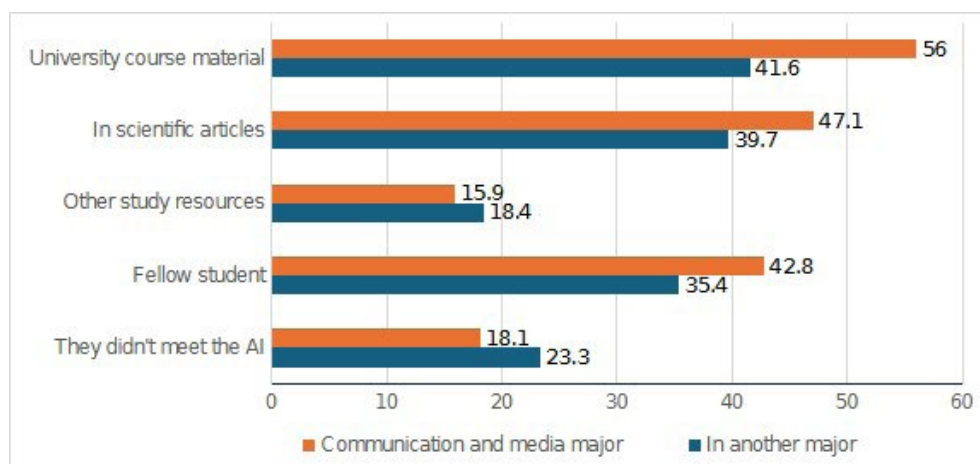


Figure 1. *In what form have students encountered the concept or applications of artificial intelligence during their studies (data, in per cent)?*

It is worth examining separately how communication and media students encountered the concept of artificial intelligence during the education process. Among the sources mentioned, forms directly related to instructors and coursework stand out the most (56% university course material and 47.1% scientific articles). In comparison, the role of other study resources (15.9%) appears much less decisive. The role of fellow students also seems important, with values exceeding 40%. When comparing communication and non-communication students, the chi-square test revealed a statistically significant difference in the case of university course material ($p = .001$). The binary logistic regression model was statistically significant ($p < .001$), although it explained only a modest proportion of variance (Nagelkerke $R^2 = .137$). The analysis showed that the only significant predictor was the form of study (full-time vs part-time; $\text{Exp}(B) = 4.06$, $p < .001$), while the field of study did not reach statistical significance ($p = .07$). This suggests that the observed differences between the two groups are primarily linked to the higher proportion of full-time students among communication majors.

We also analysed how students encountered artificial intelligence across the four domains examined. A slightly higher value was observed among communication and media majors, who reported an average of 1.6232 AI-related domains, compared to 1.3521 among non-communication students. Although the overall chi-square association was not significant ($p = .089$), the linear-by-linear association indicated a significant trend ($p = .008$). Communication students were overrepresented among those encountering AI in two, three, or four forms (49.2% vs 38.8%) and underrepresented among those encountering AI in one or none of the forms (50.8% vs 61.2%). The multinomial logistic regression model was significant ($p < .001$), though its explanatory power remained modest (Nagelkerke $R^2 = .154$). The strongest predictors were the form of study ($p < .001$) and level of study ($p = .001$), while gender showed a weaker but still significant effect ($p = .006$). In contrast, the field of study (communication and media vs other majors) was not significant ($p = .525$). This indicates that the significant trend is explained by the socio-demographic composition of communication students – who are more often male and full-time enrolled – rather than by the major itself as an independent factor.

Table 1. *In how many areas have the students encountered tools based on artificial intelligence during the educational process (data in percentage)?*

Not found in any form	Found in one form	Found in two forms	Found in three forms	Found in four forms	Total	
Non-communication students	24.4	36.8	22.6	11.6	4.6	100
Communication students	19.6	31.2	23.9	18.1	7.2	100
Average	23.8	36	22.8	12.5	5	100

4.2. What Artificial Intelligence-Based Tools Did University Students Use in Their Studies?

The year 2023 did not only mean the rise of ChatGPT and its peers; newer and newer applications based on artificial intelligence were born in droves. In the United States alone, 14,700 artificial intelligence start-ups have been counted. Research has identified the number of AI applications operating in various fields as being in the hundreds of thousands. Thousands of new applications were created daily (McGill 2024). Of course, only a small proportion of them will be marketable in the long term, but this indicates the phenomenon that players in education have to face as well, because many of them can also be used in the learning process. In the questionnaire, we inquired about the use of 13 AI tools

in education. *Figure 2* shows that six of them were used by university students majoring in communication at least 3% of the time.

The popularity of two applications stands out, particularly Duolingo and ChatGPT. More than two-thirds of communication students reported using the former, while more than 50% had already tried ChatGPT during their studies. The Grammarly English-language writing assistant and the DeepL language translation program follow significantly behind these two applications. Over a quarter of communication majors used the former application during their studies, while only 17% used DeepL. In the case of Grammarly, a significant difference is observed between the two examined groups, particularly in the direction of communication majors. The proportion of the other two more frequently used AI applications did not even reach 10% among communication students. Bing Chat was used by 8.7% of the surveyed communication students, while Google Bard (now known as Gemini) was used by 6.5% during their studies. However, a significant difference between the two groups can be observed in the case of Bing Chat, favouring communication majors (8.7% vs 3.9%). The chi-square test indicated significant differences for ChatGPT ($p = .007$), Grammarly ($p < .05$), and Bing Chat ($p = 0.013$), while the difference for DeepL was not significant ($p = 0.880$).

Binary logistic regression analyses were conducted to identify the factors influencing the use of AI tools among communication students. In the case of ChatGPT, socio-demographic variables – particularly gender and form of study – were the strongest predictors (Nagelkerke $R^2 = .117$; $p < .001$), while the field of study itself was not significant. For Bing Chat (Nagelkerke $R^2 = .136$), both gender ($\text{Exp}(B) = 6.12$; $p < .001$) and field of study ($\text{Exp}(B) = 2.48$; $p = .016$) had significant effects, with study level ($\text{Exp}(B) = .419$; $p = .016$) also playing a moderating role. Grammarly usage showed a similar pattern (Nagelkerke $R^2 = .087$, $p < .001$), influenced mainly by the form of study ($\text{Exp}(B) = 3.261$; $p < .001$) and disciplinary background ($\text{Exp}(B) = 1.818$; $p = .007$), while gender differences were negligible. Overall, regression models indicate that the use of AI tools is shaped by a combination of gender, study level, type of study, and disciplinary background. In general, the models show that disciplinary background meaningfully shaped students' likelihood of using certain AI tools: communication and media students were nearly two and a half times more likely to use Bing Chat and almost twice as likely to rely on Grammarly compared to their peers in other fields. These probability differences indicate that disciplinary orientation substantially influences which applications students integrate into their academic routines, even if this effect does not appear uniformly across all tools.

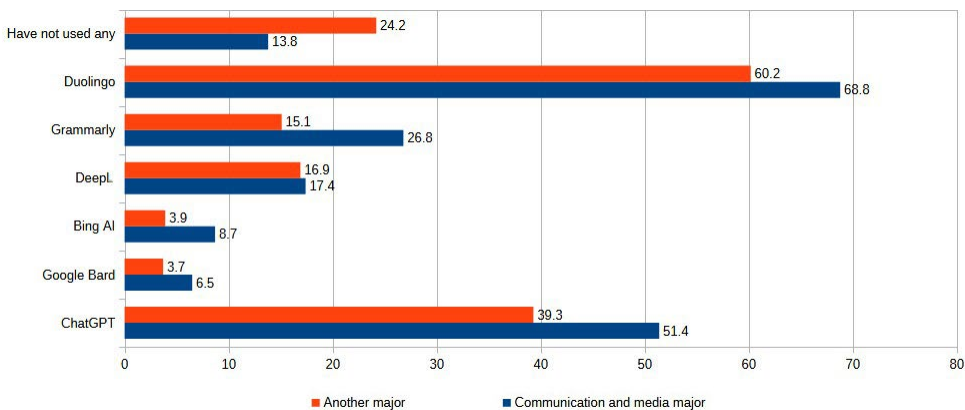


Figure 2. *What kind of artificial-intelligence-based tool had university students used during their studies until then (data in percentage)*

We also examined the average number of artificial-intelligence-based tools used or tried by students during their studies. A comparison of group means revealed that communication and media students utilized AI tools significantly more frequently on average than students from other fields (1.92 vs 1.49; $t(1025) = 3.49$, $p = .001$). Students in this major were underrepresented among those who had not yet used any AI tools (13% vs 24.1%) and overrepresented among those who had used two or more AI tools. A significant linear-by-linear trend was also detected ($p = .001$), indicating that the likelihood of using multiple AI tools increases among communication and media students. However, multinomial logistic regression showed that this effect was primarily explained by socio-demographic factors rather than by the field of study itself (Nagelkerke $R^2 = .135$, $p < .001$). Gender ($p = .002$), form of study ($p < .001$), and level of study ($p < .001$) were significant predictors, while the field of study was not ($p = .156$). These findings suggest that the intensity of AI tool usage among communication students is primarily driven by socio-demographic rather than disciplinary factors.

Table 2. *In how many fields have they already used AI tools during their studies (data in percentage)?*

Not found in any forms	Found in one form	Found in two forms	Found in three forms	Found in four or more forms	Total	
Communication students	13	29	31.9	14.5	11.6	100
Non-communication students	24.1	34.2	21.8	12.4	7.5	100
Average	22.6	33.5	23.2	12.7	8.1	100

4.3. In Which Fields Would University Students Like to Use Artificial Intelligence in Their Studies?

We also examined which fields' respondents would be open to using AI-based tools. According to the data in *Figure 3*, four-fifths of the respondents would like to use an AI tool to solve problems related to a foreign language. Nearly 90% indicated learning a foreign language or translating various texts. After that, almost three-quarters of the respondents mentioned grammar checks and stylization of the seminar papers, as well as the collection of material for papers and reports. However, more than 50% of university students would use AI tools to prepare illustrative material for seminar presentations, and they would be happy to use simulation, educational and personalized interactive materials. Those who completed the questionnaire mostly avoided using virtual teachers (only 25.4% and 30.3% would use them respectively). This need stems from the fact that most people require personal presence in education. That is why they are averse to learning from "robot" teachers based on some algorithm, quasi-chatbots. However, when filling out the questionnaire, few people think that human instructors' time and mental and physical capacity are finite. They are not immediately available to their students 24/7. Thus, thoroughly trained virtual teachers could be helpful in the learning process.

The most problematic part of the question is their use in the preparation of theses. Although we did not ask in which element(s) of the process (ideas, sketching, information gathering, writing, stylization) it would be used, several people mentioned in another explanatory question that they would specifically have papers written with it. This represents a gross violation of university integrity. The various news reports also confirm that many people would outsource the process of writing the thesis or dissertation itself, even to an AI application, and some of these are free to use. This problem is worrisome not only from an ethical perspective but also from a qualitative standpoint. To the best of our knowledge, the devices currently in circulation are not yet capable of creating a complete scientific work. Thus, the obtained value of around 40% is thought-provokingly high. However, it is worth noting that we did not find any significant differences between the two investigated groups in these areas.

Based on the data in *Table 3*, we do not see any significant differences between the two investigated groups in this area. Overall, nearly 40% of those who completed the questionnaire would like to use AI tools in seven or more fields during their studies. Only 3-4% of respondents refrained from using AI tools in the field of education.

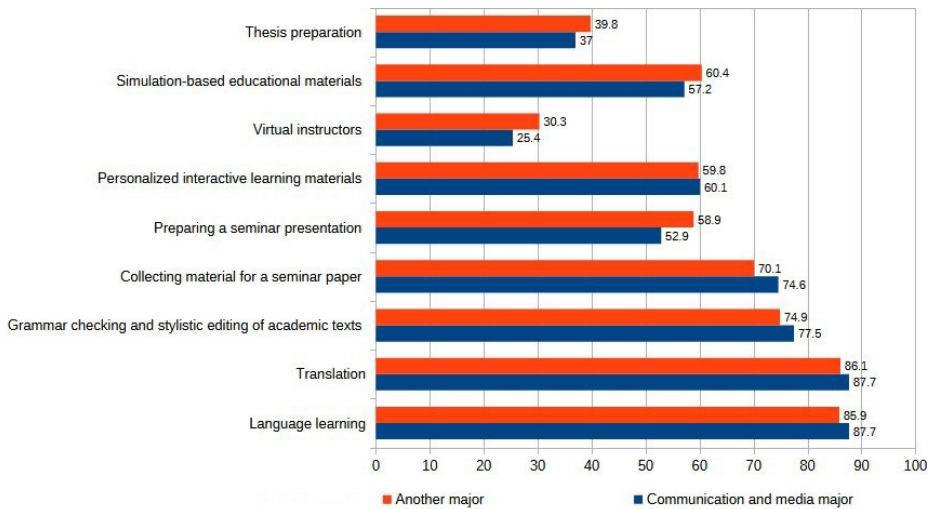


Figure 3. In which field of education would students like to use an AI tool during their studies (data in percentage)?

Table 3. In how many areas are/would AI tools be used in education (data in percentage)?

Complete rejection	Would use in some areas (1–3 areas)	Average users (4–6 areas)	Would use extensively (7–9 areas)	Total	
Communication students	2.9	16.7	39.1	41.3	100
Non-communication students	3.7	16.1	38.7	41.5	100
Average	3.6	16.2	38.8	41.4	100

4.4. Factors Inhibiting the Use of AI by University Students

It is clear from the above that the university students we interviewed are open to making the learning process more straightforward with the help of modern tools in as many areas as possible. Thus, it is also worth investigating the obstacles mentioned by those filling out the questionnaire regarding AI tools. From the data in *Figure 4*, it is clear that in the case of students majoring in communication ethical concerns are the most common barrier (45.7%), followed by a lack of knowledge (38.4%). Both ratios indicate a demand for university students to receive information about the ethical use of AI tools. Learning the ethical use of AI tools is necessary in the long term to maintain competitiveness. If ethical

concerns relate to the legality of the data used to train AI programs, that is another question beyond the scope of this study. The ratio of responses reflecting material and data protection problems is not much lower than these values. A third of the interviewed communication and media students mentioned that a problem is that they cannot afford the payment devices (33.3%), and data protection issues (29.7%) are a hindrance for them. In contrast, only 6.5% of communication students reported that they lack adequate technical tools to utilize AI tools, and 1.4% found artificial-intelligence-based tools to be challenging to use.

The chi-square test indicated a significant difference between the two investigated groups in both cases. Among students majoring in communication, the proportion of those who believed that lack of knowledge was an obstacle to using AI tools was significantly lower compared to students of other majors (38.4% vs 49.5%; $p = .015$). Furthermore, in the case of communication majors, the proportion of those for whom the complexity of AI tools is an obstacle was also significantly lower (1.4% vs 5.4%; $p = .045$). As mentioned earlier, this ratio remains negligible for both groups.

Based on the binary logistic regression model, we can conclude that the variables of gender and form of study significantly explain the observed difference between communication and non-communication students. The model fit was significant ($p < .001$; Nagelkerke $R^2 = 0.057$), and the Hosmer–Lemeshow test confirmed a good fit ($p = .583$). Gender proved to be the strongest predictor ($\text{Exp}(B) = 0.40$, $p < 0.001$), indicating that male students were less likely to perceive a lack of knowledge as a barrier to the use of AI. The form of study also had a weaker but still significant effect ($\text{Exp}(B) = .76$, $p = .049$). In contrast, the field of study (communication and media vs other majors) was not significant ($p = .121$), suggesting that the differences can be attributed to the socio-demographic composition of communication students rather than to disciplinary effects. On the other hand, regarding the perceived complexity of AI tools, the binary logistic regression model showed a marginally significant fit ($p = .061$; Nagelkerke $R^2 = .027$), with a good overall fit (Hosmer–Lemeshow $p = .893$). In this case, only the field of study proved to be a significant predictor ($\text{Exp}(B) = .22$, $p = .036$). In contrast, gender, form, and level of study were not significant ($p > .1$). This indicates that communication students were substantially less likely to perceive AI applications as complex to use, suggesting a genuine disciplinary effect rather than a demographic one.

The average number of inhibiting factors listed by the students who completed the questionnaire out of the nine listed is also worth examining. Similar values are obtained for the two investigated groups. For students majoring in communication, this number is 1.62, while for students not majoring in communication this is 1.848. Examining the data in *Table 4*, it is noticeable that the proportion of those mentioning two or fewer barriers in all three categories among students

majoring in communication and media is 1–4% higher, while on the other hand, the proportion of those mentioning three or more barriers is significantly lower (23.9% vs 30.7%). The chi-square test, however, did not indicate a statistically significant difference between the two groups ($p = 0.372$). It is worth noting that 54–57% of the respondents mentioned one or two inhibiting factors, and a relatively high proportion (23.9% vs 30.7%) reported three or more problematic areas. In comparison, only 18.8% and 15.2%, respectively, indicated no barriers at all. These results suggest that although most students experience only a limited number of obstacles, a considerable share still face multiple challenges in using AI tools. This highlights the ongoing need for targeted educational support, particularly given the previously mentioned finding that a significant proportion of students would utilize AI tools for thesis or dissertation generation.

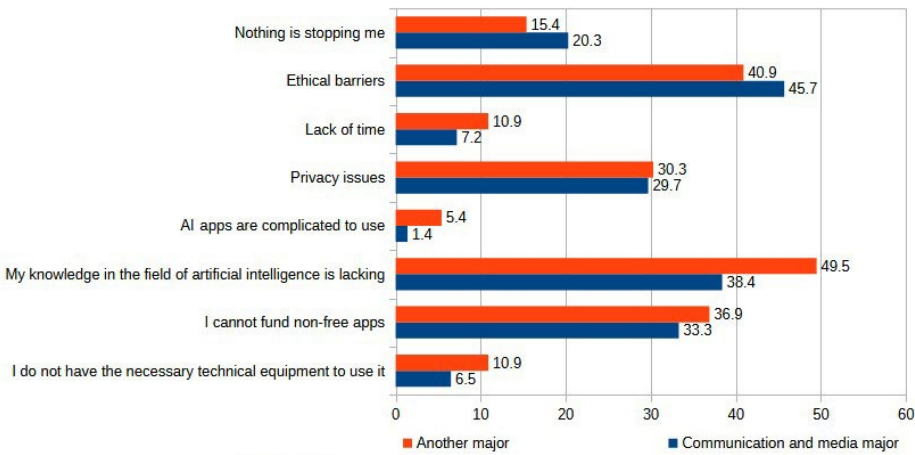


Figure 4. *What factors prevent them the most from using AI tools during their studies (data in percentage)*

Table 4. *The number of inhibiting factors mentioned by university student (data in percentage)*

No inhibiting factor	One inhibiting factor	Two inhibiting factors	Three or more inhibiting factors	Total	
Communication students	18.8	31.2	26.1	23.9	100
Non-communication students	15.2	30.1	24	30.7	100
Average	15.7	30.3	24.2	29.8	100

5. Summary

Based on our questionnaire survey, more than 80% of communication and media students reported encountering artificial intelligence in some form during their studies, most commonly in university course materials or scientific articles or through interactions with peers. Compared to students from other fields, communication majors reported more frequent exposure to AI within formal educational contexts. However, statistical analyses showed that this difference was largely explained by socio-demographic characteristics rather than by disciplinary effects.

Communication students used a wider range of AI tools during their studies and were significantly more active users of specific applications – particularly ChatGPT, Bing Chat, and Grammarly. They were also underrepresented among students who had not used any AI tools (13% vs 24.1%). At the same time, regression analyses indicated that these differences were primarily driven by gender, type of study, and level of study. Disciplinary background emerged as an independent predictor only in a limited number of cases: the use of Bing Chat and the use of Grammarly.

In terms of learning-related preferences, students showed a strong willingness to use AI tools for language learning, translation, grammar checking, and content generation for seminar papers. No significant differences were found between communication and non-communication students in these areas. Nearly 40% of respondents would use AI tools in seven or more domains, reflecting broad acceptance and motivation across the sample.

Regarding obstacles to AI use, communication students were significantly less likely to cite lack of knowledge (38.4% vs 49.5%) or the perceived complexity of tools (1.4% vs 5.4%) as barriers. Binary logistic regression confirmed that the lower prevalence of knowledge-related barriers was explained by demographic factors. In contrast, the perception of lower complexity was the only case in which disciplinary background played an independent role.

Overall, the findings indicate that communication and media students appear more engaged with AI technologies; however, these differences primarily stem from demographic composition. Genuine disciplinary effects were observed only in a small number of cases, suggesting that the integration of AI into university learning environments is shaped by both structural and individual factors.

6. Conclusions and Future Directions

Findings highlight AI's transformative potential in communication and media studies, enhancing text creation and critical thinking. However, ethical issues,

data privacy, and the risk of overreliance on AI tools necessitate careful integration. Communication students' higher engagement with AI reflects their curriculum's relevance to AI-driven media landscapes. Educator training and clear guidelines are essential to address ethical concerns and ensure AI complements human-centred education. AI is reshaping journalism and higher education, offering significant opportunities for communication and media students. While tools like ChatGPT enhance learning and professional skills, challenges such as ethical concerns, bias, and academic integrity must be addressed. Hungarian universities should develop strategies to integrate AI responsibly, ensuring it supports rather than replaces human creativity and critical thinking in education and media.

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