How Students Use Generative AI: Insights from a Czech Survey

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Abstract

This article examines the utilization of generative artificial intelligence (GAI) tools among students from Czech universities across various fields of study. Based on a quantitative survey (February to May 2025) of 228 respondents, the study identifies the most frequently used GAI tools and examines students' experiences, benefits, and concerns. Using descriptive statistics, the findings reveal a high adoption rate among information technology (IT) students, highlighting both positive impacts on learning and motivation, as well as concerns about reliability and ethical issues. Analysis revealed that the number of GAI tools has a positive influence on the frequency of GAI tool use, and the degree of study has a negative influence on this relationship.

Keywords

Quantitative survey; Cross-disciplinary education; Critical thinking development; Technology adoption in education; Student behavior analysis.

Introduction

This article focuses on generative artificial intelligence (GAI), a rapidly evolving field that can produce texts, images, videos, or code based on input prompts. The authors justify the choice of topic by its relevance and growing impact on education (Crompton & Burke, 2023; Adiguzel et al., 2023; Baidoo-Anu & Ansah, 2023), while highlighting the lack of detailed studies on how students utilize these tools, their experiences, and which tools they recommend. Several studies have been conducted abroad, primarily in non-European countries (Chan & Hu, 2023; Almassaad et al., 2024).

The choice of this topic is supported by a growing body of literature that highlights the transformative role of GAI in education. Crompton & Burke (2023) describe how GAI tools are reshaping learning environments by enabling personalized instruction, automating feedback, and supporting academic writing. Similarly, Adiguzel et al. (2023) emphasize the potential of ChatGPT to enhance student engagement and creativity, while Baidoo-Anu & Ansah (2023) argue that GAI can democratize access to knowledge and improve learning outcomes. However, a notable research gap remains. Existing studies often focus on general perceptions or single tools and are typically conducted in non-European contexts. For example, Chan & Hu (2023) surveyed students in Hong Kong, while Almassaad et al. (2024) focused on Saudi Arabia. These studies provide valuable insights but lack a cross-disciplinary and cross-institutional perspective within the European educational landscape.

Moreover, only a few studies have examined the actual behavior of students—how frequently they use GAI tools, which tools they use, and how these tools affect their academic performance. The present study addresses this gap by analyzing responses from 228 students of Czech universities, representing a wide range of disciplines. It also applies statistical methods, including a regression model, to explore the relationship between GAI usage and variables such as field of study, level of education, and number of tools used. By comparing the findings with those of Chan & Hu (2023), Almassaad et al. (2024), and Malmström et al. (2023), this article contributes to a more nuanced understanding of GAI adoption in higher education, offering localized insights that can inform policy and practice in European academic institutions.

The article aims to map the use of GAI tools among students from various fields of study and from different universities in the Czech Republic, including their positive and negative experiences and suggestions. The research is based on a quantitative survey, followed by statistical analysis.

The article is structured as follows: Section 1 contains literature review of general GAI and its use in education. Section 2 contains methodology based on a quantitative survey, usage of descriptive statistics, correlation, and regression model. Main findings are presented in Section 3, and their comparison with other studies, including the limitations of this research are presented in Section 4. Section "Conclusion" summarizes research results and suggests future directions of this research.

1 Literature Review

GAI is a subfield of artificial intelligence that uses generative models to produce new content like text in many natural languages, images (photos, cartoons, paintings), music, and videos (according to input description and/or particular style of image, music, and video) or code in various programming languages (UNESCO, 2023).

New content is created using advanced language models and other sophisticated algorithms rather than just processing and analyzing data. GAI models learn the patterns and structures of their training data and use them to generate new data based on the input, which often comes in the form of natural language prompts (Giray, 2023; UNESCO, 2023).

The real boom of GAI started just a few years ago, e.g., the first widely available version of ChatGPT was released at the end of 2022 and already in January 2023 it became the fastest-growing consumer software application in history, reaching over 100 million users in two months and about 700 million active users in 2025 (Curry, 2025).

There are several major categories of GAI tools.

The most common are chatbots (like ChatGPT, Copilot, Gemini, Claude, Grok, or DeepSeek). They are capable of a conversation in natural language with a (human) user and simulating the way of human-to-human conversation. Modern chatbots are often based on large language models (LLMs), such as generative pre-trained transformers (GPT), the origin of the name ChatGPT. However, much simpler chatbots have existed for decades (UNESCO, 2023). The test, initially known as the "imitation game" (now referred to as the Turing test), was proposed by Alan Turing. It should be emphasized that the test does not evaluate the correctness of the answers (Turing, 1950).

Other categories are text-to-image models (e.g., DALL-E, Midjourney, or Stable Diffusion), text-to-video models such as Veo or Sora, and text-to-music models like Boomy or Soundraw. Tools from these categories employ very different types of algorithms to produce unreal images or videos that resemble real ones (UNESCO, 2023; Maerten & Soydaner, 2023).

Currently, many GAI tools are available for the general audience as free service (within certain limits) or standalone paid service or integrated into another product (usually also subscription-based), e.g., in Microsoft 365, chatbot capabilities are gradually but increasingly being added to core applications like Word, Excel, or Outlook (Murphy Kelly, 2023). The availability of many tools for a diverse audience has led to their extensive use in many fields, including education (Crompton & Burke, 2023; Adiguzel et al., 2023; Baidoo-Anu & Ansah, 2023).

The adoption of GAI tools in education promises numerous benefits, but it also raises several questions, uncertainties, challenges, and ethical issues. Tools can be beneficial for both students and teachers, such as when writing texts, especially in a foreign language (Chan & Lee, 2023), searching for information, summarizing lengthy texts, or analyzing data (Berg, 2023). Tools for creating photos or videos can be handy in visual arts education (Dehouche & Dehouche, 2023) and many other related fields of study, such as design, architecture, or technical schools. GAI can facilitate teachers' lesson preparation, generate various versions of practice materials or tests, and assist in evaluating students' work (Crompton & Burke, 2023; Mizumoto & Eguchi, 2023). The possibilities are constantly expanding along with the development of GAI tools, and as students and teachers become more familiar with them.

On the other hand, the increasing use of GAI has raised many questions and issues. A comprehensive, yet incomplete, overview can be found, for example, in a guide by the United Nations Educational, Scientific, and Cultural Organization (UNESCO, 2023). The handbook is also important because it contains recommendations and guidelines not only for educators, but also for all others involved. Among the issues analyzed by UNESCO are worsening digital poverty (especially in poorer countries or regions), outpacing national regulatory adaptations, use of content without the owner's permission, black box problem, pollution by generated content (in addition, maybe with bias or errors), reducing the diversity of opinions, and further marginalization, deeper deepfakes (UNESCO, 2023).

Other authors (Warschauer et al., 2023) focus on specific topics. Overuse of GAI may limit students' efforts to develop writing competence. GAI-generated content can be biased, inaccurate, or (possibly intentionally) harmful, and GAI tools are not equipped to evaluate the validity of content. In addition, GAI can create and spread misinformation or harmful and inaccurate content at unprecedented scale and speed (Harrer, 2023; Maerten & Soydaner, 2023). Plagiarism is a significant problem in education (Peres et al., 2023; Safi, 2025).

There are many other questions related to GAI tools (not only in) education, whose diverse impacts may not be immediately apparent. Almost every new version of a chatbot utilizes a larger LLM. The undesirable effects include environmental and financial costs, as well as the negative consequences of ever-larger training datasets, among others (Bender et al., 2021).

Several authors have focused on the GAI tools with which students are familiar, examining how and for what purposes they use them, as well as their attitudes toward these tools. Since ChatGPT was launched to the public at the end of 2022, one of the first studies on this topic was published by Chan & Hu (2023). A larger study was done by Almassaad et al. (2024). In Europe, a similar very large-scale study (Malmström et al., 2023) was conducted in Sweden.

2 Methodology

The primary **objective** of this research is to examine how university students in the Czech Republic utilize GAI tools, specifically to identify the most commonly used tools, understand students' experiences—both positive and negative—and determine which tools they would recommend to others. Additionally, the research investigates whether usage patterns differ across various fields of study and educational levels.

The research focused on the following **research questions** (RQ):

RQ1: What GAI tools do students use most often?

RQ2: What are students' experiences with GAI tools, both positive and negative?

RQ3: Which GAI tools would students recommend to other students?

RQ4: Are there differences in the extent to which GAI is used among students in different fields or levels of study?

The study employed a quantitative survey administered between February and May 2025 among university students in the Czech Republic. The **questionnaire** consisted of closed-ended, multiple-choice, Likert-type, and open-ended items and was distributed through student groups at more than 11 universities. The target group for this research consisted of students from various fields, including medicine and IT, pursuing bachelor's, master's, and doctoral degrees. The age and gender of respondents were not taken into account. The criteria for inclusion in the study were student status and experience with using GAI tools in the learning process, which must have occurred at least once. The possibility that some respondents had no experience with GAI was also taken into account. Ethical concerns were not the focus of the research. Participation was voluntary and anonymous. A total of 228 valid responses were collected.

The **dependent variable** of this research is the frequency of GAI use which has been measured on a five-point ordinal scale:

0 = does not use GAI at all,
1 = GAI used several times,
2 = GAI used for some projects,
3 = GAI used for most projects,
4 = GAI used for all projects.

Because the distances between categories cannot be assumed to be equal, the dependent variable was treated as ordinal.

The **predictor variables** are the following:

- Field of study (eight categorical groups),
- University (eleven institutions + others),
- Level of study (Bachelor's vs. Master's),
- Number of GAI tools used (count).

All categorical predictors were dummy-coded. IBM SPSS version 27 was used for statistical processing.

The **statistical model** used in this study is an ordinal regression model (proportional odds/logit model), which is appropriate for ordered categorical outcomes. The model estimates how predictors influence the log-odds of belonging to higher versus lower categories of GAI usage along an unobserved latent continuum. The logit link function transforms cumulative probabilities into the natural logarithm of odds, allowing coefficients to be interpreted as directional shifts on this latent scale.

The **lowest response category 0** ("does not use GAI at all") was retained in the analysis. This category captures a substantively distinct state and provides an important contrast to minimal users. Removing it would artificially compress the scale, reduce variability, and distort the ordinal structure of the data. Empirically, models that excluded category 0 demonstrated inferior fit.

To ensure the adequacy of the ordinal regression model, several **key assumptions** were examined:

1) Proportional odds (parallel lines) assumption: This assumption states that the relationship between predictors and the log-odds of being in a higher category is constant across all thresholds.
   a) Goodness-of-fit tests (Pearson and Deviance) showed no evidence of violation (Pearson $p = 0.808$; Deviance $p = 1.000$).
   b) Residual inspections and threshold estimates were stable. Thus, the proportional-odds assumption was considered satisfied.
2) Independence of observations: Each student completed the questionnaire only once, and no clustering by class or study group occurred. Therefore, the assumption of independence is met.
3) Absence of multicollinearity: Variance inflation factors (VIF) and correlation diagnostics indicated no problematic multicollinearity among predictors. All VIF values remained well below commonly accepted thresholds.
4) Adequacy of categories and cell frequencies: Although some predictor–outcome combinations had low frequencies, the model converged normally, coefficients were stable, and goodness-of-fit statistics were excellent. IBM SPSS diagnostics did not flag sparse-cell issues as problematic.
5) Linearity of predictors with the logit (for numeric predictors): The numeric predictor "number of GAI tools used" displayed no deviations from linearity in the logit when assessed through partial residual plots.
6) Appropriate choice of correlation measure: For the descriptive relationship between the number of tools used and recommended Spearman's rank correlation coefficient was used.

All assumptions were therefore adequately met, supporting the validity of the model.

Regarding the ordinal regression model, the following **null hypotheses H_0 and alternative hypotheses H_1** were formulated:

$H1_0$: The field of study is not related to GAI use frequency.
$H1_1$: The field of study is related to GAI use frequency.

$H2_0$: University is not related to GAI use frequency.
$H2_1$: University is related to GAI use frequency.

$H3_0$: Degree level is not related to GAI use frequency.
$H3_1$: Degree level is related to GAI use frequency.

$H4_0$: The number of GAI tools used is not related to GAI use frequency.
$H4_1$: The number of GAI tools used is related to GAI use frequency.

In addition to the ordinal regression model, the data were analyzed using descriptive statistics, and the relationship between the most commonly used GAI tools and the recommended GAI tools was assessed by calculating Spearman's rank correlation coefficient.

The results were compared with other foreign studies (e.g., Chan & Hu, 2023; Almassaad et al., 2024; Malmström et al., 2023). The comparative method was employed to compare the opinions of respondents with those of existing studies.

3 Results

3.1 Basic Characteristics of the Respondents

Table 1 shows that students from four most frequently represented universities account for more than 10% of the respondents.

Tab. 1: *Respondents by university*

Czech university	Number of respondents	Percentage [%]
Prague University of Economics and Business (Vysoká škola ekonomická v Praze)	56	24.6
Czech Technical University (České vysoké učení technické v Praze)	30	13.2
Charles University (Univerzita Karlova)	28	12.3
Czech University of Life Sciences (Česká zemědělská univerzita)	23	10.1
University of Chemistry and Technology (Vysoká škola chemicko-technologická v Praze)	19	8.3
Technical University of Ostrava (Technická univerzita Ostrava)	14	6.1
Brno University of Technology (Vysoké učení technické v Brně)	14	6.1
Masaryk University (Masarykova univerzita)	13	5.7
Škoda Auto University (Škoda Auto Vysoká škola)	8	3.5
University of Pardubice (Univerzita Pardubice)	8	3.5
Others	15	6.6
Total	**228**	**100.0**

Source: Own

The proportion of students by year of study is shown in Table 2.

Tab. 2: *Respondents by year of study*

Year of study	Number of respondents	Percentage [%]
Year 1	53	23.2
Year 2	83	36.4
Year 3	56	24.6
Year 4	31	13.6
Year 5	5	2.2
Total	**228**	**100.0**

Source: Own

The proportion of students by the degree of the study program is shown in Table 3.

Tab. 3: *Respondents by the study program degree*

Degree	Number of respondents	Percentage [%]
Bachelor's degree	193	84.6
Master's degree	35	15.4
Total	**228**	**100.0**

Source: Own

The structure of respondents by major field of study for both bachelor's and master's degree programs is shown in Table 4. Fields of study with a minimal number of students were grouped into the category "Others".

Tab. 4: *Respondents by major field of study*

Major field of study	**Number of respondents**	**Percentage** [%]
IT	81	35.5
Economy and finance	45	19.7
Technical	37	16.2
Social sciences	25	11.0
Natural sciences	17	7.5
Medical	6	2.6
Arts	4	1.8
Others	13	5.7
Total	**228**	**100.0**

Source: Own

3.2 Descriptive Statistics and Open-Ended Answers

Of the 228 participating students, 222 (97.4%) reported using at least one GAI tool. ChatGPT was used by almost all respondents (218 mentions), followed by DeepSeek, Copilot, and Gemini. On average, one student uses two or three GAI tools (the mean is 2.6). GAI was most commonly used to explain topics, prepare for exams, write assignments, and generate text (students could give multiple answers, including their own).

The most common purpose of GAI usage was preparation for tests and exams (73.9%). In the second place was homework (66.7%), followed by writing seminar papers and theses (56.3%), and creating presentations (41%). Students also mentioned other options, with relatively low use for creative projects (16.7%).

The most popular function of GAI tools is explaining a topic (73.9%). Answers to questions are mentioned by 65.3% of respondents, generating text on a given topic by almost the same number of students (64.9%). Solving tasks and equations step by step is used by almost half of the respondents (49.5%), and searching for sources and articles is used by 43.7% of respondents. Code generation was mentioned by 31.1% of respondents, and plan creation by 28.4%. Creative functions are not frequently used: image creation is mentioned by 15.3% of respondents, and video creation by only 2.7%.

Regarding the frequency of use, most respondents (34.2%) reported using GAI for multiple projects, while 24.8% use GAI for almost every school project. A slightly smaller number of students (21.6%) use GAI for all tasks, while the fewest respondents (19.4%) reported having only used GAI a few times. No student reported using GAI only once.

Table 5 examines the GAI tools used according to two indicators. The first column shows the number of students who use a given tool (each student could list any number of them). The second column tracks how often they recommend a given tool to others. At first glance, there is a clear correlation between the two indicators (only the tool "Sourcely" has a much lower number of recommendations compared to the number of users). The Spearman's rank correlation coefficient between these two variables is very high ($r = 0.92$).

Tab. 5: *Mostly used and recommended GAI tools by students*

Tools	Used GAI tools	Recommended to others
ChatGPT	218	192
DeepSeek	60	39
Copilot	56	28
Gemini	51	20
DeepL Write	45	23
Perplexity	38	21
Claude	24	15
Notion	19	9
Sourcely	19	2
DALL-E	13	5
MidJourney	13	4
Gamma	10	4

Source: Own

The authors also asked students about problems with using GAI tools. More than half of the students (56.4%) reported complications (the percentages refer to this subset of students). Students cited the unreliability of the information provided as the most common problem (60.6%). GAI tools often did not understand questions (58.3%), and therefore almost half of the students (49.6%) had to rephrase their request. Also, the answer did not meet their expectations (46.5%).

According to 37.8% of respondents, GAI tools provide unreliable sources. 15% of students considered the answer too long. Several students wrote various other comments, often providing detailed information. For example, one student stated:

> "*When asked a more complex question, AI does not provide the correct answer at all, which I tested on all OpenAI models. Additionally, AI struggles to write program code that exceeds 50 lines reliably. It is always necessary to rigorously check the answers for hallucinations.*"

Although students reported many problems, most rated their experience with GAI positively. When asked to give an overall rating on a scale of 1 to 5 (as in school), almost two-thirds of students (65.7%) rated their general experience with a grade of 1 or 2 (excellent or very good). The complete results from students using at least one GAI tool are shown in Table 6.

Tab. 6: *General ratings of GAI experience*

Grade	Number of respondents	Percentage [%]
1 excellent	70	31.5
2 very good	76	34.2
3 good	42	18.9
4 bad	25	11.3
5 very bad	9	4.1
Total	**222**	**100.0**

Source: Own

The authors also asked students whether they had learned anything new while using GAI. The vast majority (91.5% of students) answered yes. A follow-up question then asked what new knowledge or skills students had acquired.

Most students (79.5%) gained new information about the topic. The development of critical thinking through the analysis of GAI responses was mentioned by 43.5% of respondents. An

improvement in technological skills was reported by 36.5% of respondents, and the adoption of new techniques for working with GAI was mentioned by 31% of respondents. The development of creativity was mentioned by 29% of students, and 24.5% of respondents learned new language structures. Students provided other individual answers, for example, one respondent stated that GAI helps to identify knowledge gaps or to learn new methods of solving equations, while another student uses AI to verify their own results.

Respondents were also asked to evaluate the work they created using GAI. Half of the students (49.5%) reported giving excellent grades to GAI. An average grade was reported by 41.9% of respondents, and 8.6% of students reported that they do not grade their work at all. Not a single respondent graded the work created with the help of GAI poorly.

Students also evaluated whether and how GAI affected their studies. Almost two-thirds of students (65.8%) reported an exclusively positive impact, 18.9% of respondents reported both positive and negative impacts, 9.1% of students were unsure, and 4.1% of respondents reported no impact. Only 1.8% of students reported that the impact was strictly negative.

Among students who reported exclusively positive effects of GAI, the most frequently cited benefits were easier and faster studying (81.8% and 79.7% of students in this group). 35.1% of respondents in this group reported more interesting education, and 22.3% of students reported increased motivation. Students also mentioned their own formulations of benefits, such as improved time management and automation of routine tasks.

Among students who reported strictly negative effects of GAI, the following responses were given (it is necessary to consider the minimal number of respondents in this group, which was only 4): laziness, finding studying more boring, and having one's thinking replaced by AI-generated answers. However, no student in this group reported a decrease in motivation or an increase in study difficulty.

Among students who reported both positive and negative effects of GAI, the following responses were given (again, without percentages due to the small size of the group). The most frequent positive benefits are again faster and easier studying. The most frequent negative impacts (in this order) are laziness and decreased motivation. Other responses were rare. No one chose the option that GAI would slow down the learning process.

3.3 Ordinal Regression Model

An ordinal regression model was estimated to examine how study field, university, study level, and number of tools used predict the frequency of GAI use. Assumptions of the proportional-odds model were evaluated and found to be satisfied (Pearson $p = 0.808$; Deviance $p = 1.000$), indicating an excellent fit and supporting the use of a single cumulative logit function across thresholds.

The overall model was significant:

- Model $\chi^2(19) = 47.45$, $p < 0.001$.
- Nagelkerke $R^2 = 0.200$.
- Pearson GOF: $p = 0.808$.
- Deviance GOF: $p = 1.000$.

These results demonstrate that the model accounts for a significant portion of the variability in GAI use and provides a good fit to the data.

Two predictors were statistically significant across all thresholds:

- Number of GAI tools used: A greater number of tools was associated with significantly higher frequency of GAI use ($p < 0.001$); supports $H4_1$.
- Level of study (Bachelor's vs. Master's): Bachelor's students were significantly more likely to use GAI frequently ($p = 0.001$); supports $H3_1$.

Other predictors (field of study and university) with the use of the likelihood-ratio tests for the full variables indicated the following facts about H1 and H2:

- Field of study: $p = 0.182 \rightarrow H1_0$ is not rejected.
- University: $p = 0.213 \rightarrow H2_0$ is not rejected.

Some individual categories within these variables differed significantly from their reference groups (e.g., IT, Economy and finance, Social sciences), as well as several universities, including Škoda Auto University and Charles University. However, these local effects do not imply that the variables as a whole significantly improve the model.

To summarize the findings, the main results suggest that:

- The breadth of engagement with GAI tools (i.e., the number of tools used) is the strongest determinant of frequent use.
- The academic degree (Bachelor's vs. Master's) also shapes GAI behavior.
- Discipline and institution exert limited overall influence.
- All model assumptions were met, supporting the robustness of the findings.

4 Discussion

This research has shown that GAI has become a standard part of the academic life of Czech university students. The most used tool is ChatGPT (98.2% of respondents who use some form of GAI). Students use it primarily to explain topics, prepare for tests, write seminar papers, and generate text. This trend confirms the high degree of GAI integration into the everyday educational process.

In terms of benefits, students cited faster learning, easier access to information, and the development of critical thinking and technological skills. GAI helps them organize their work better, increasing efficiency and motivation.

Although more than half of the respondents encountered problems (most commonly unreliable information, misunderstanding of the query, or the need to reformulate the request), the overall assessment was very positive. Almost two-thirds of students (65.7%) rated their overall experience with GAI as excellent or very good, while only 4.1% rated it as very bad. Work created with the help of AI was mostly rated as good or excellent, suggesting that GAI can be an effective tool for improving academic performance.

An interesting finding is that when working with GAI, students not only acquire new information but also develop skills such as formulating high-quality prompts, verifying information, and fostering independent thinking. GAI, therefore, functions not only as a tool but also as a means of developing competencies essential for modern education.

Regarding the ordinal regression model, the main results are: At a significance level of 0.001, two predictors were statistically significant across all thresholds. A greater number of tools was associated with a significantly higher frequency of GAI use which supports $H4_1$. Bachelor's students were significantly more likely to use GAI frequently which supports $H3_1$.

The second result of the statistical analysis (Bachelor's vs. Master's students) may seem surprising at a first glance, but it has a simple logical explanation. GAI tools only began to be used more widely in 2023 (after ChatGPT was launched). Lower-year students, therefore, began their university studies at a time when GAI tools were widely available. In contrast, upper-year students were initially unable to use them and did not change their habits as much in their upper years.

Regarding comparisons with other studies, the authors first compared their results with those of Chan & Hu (2023). The number of respondents in that study is slightly higher, but comparable (399 respondents). The structure of students differs more; for example, art students account for 14.8%, and pedagogy students account for 7.5%. However, given the ability of AI tools to handle a wide range of tasks, comparison is not only possible but also practical.

The basic use of GAI tools (in terms of tasks) is similar in both studies. However, Chan & Hu (2023) place greater emphasis on the ability to process large amounts of information in a matter of seconds. Additionally, the use of GAI for creating images and videos is more prevalent, which can be attributed to the larger representation of students in the arts. More attention is being paid to tools such as DALL-E and Stable Diffusion. (Chan & Hu, 2023)

The frequency of GAI tool usage differs significantly. Chan & Hu (2023) report that only 66.7% of respondents had used GAI tools at least once (and not necessarily in education). Only 9.8% of respondents reported using GAI frequently, and only 6% use it consistently. The significantly higher frequency of GAI tool usage in Czech universities can be attributed to the time difference. It is worth noting that ChatGPT (by far the most widely used tool among students) was only made available to the public by the end of 2022. Over time, more people, including students, have become accustomed to the presence of GAI in their everyday lives and are gradually using it more frequently.

The studies are very similar in terms of students' positive assessment of the benefits of GAI tools. Students appreciate the benefits of GAI as a tool that helps them complete various tasks, generate new ideas, and provide quick answers. At the same time, students report that their experience with GAI has contributed to increased motivation and academic performance, including better results in some subjects. (Chan & Hu, 2023)

In a study by Almassaad et al. (2024) the number of respondents was significantly higher, totaling 859 participants. 40.3% of respondents were students of natural sciences, 30% studied at humanities-oriented schools, and 13.5% were medical students. According to this research, 78.7% of students utilize some form of AI tool. By far the most popular is again ChatGPT, which is used by 86.2% of respondents. It is followed by Gemini (21.9%), Socratic (16.9%), Copilot (16.4%), and QuillBot (15.4%). MidJourney and Chat Sonic also appeared among the tools mentioned, with shares of 5.8% and 4%.

Based on the results of their research, Almassaad et al. (2024) list the five most common ways of using GAI tools. The most popular use is to define and clarify concepts (69.2%), second was generating ideas when writing texts (53.3% of students). Translation functions are used by 50.7% of respondents, and 47.5% of students are using GAI tools to support team and individual project activities. The fifth function is summarizing professional literature (45.9%).

In the study of Almassaad et al. (2024) most respondents also reported a predominantly positive impact of GAI tools. 92% of respondents agree with the statement that GAI saves time when completing tasks. 65% of respondents emphasize the positive impact of GAI engagement in the learning process. GAI has also increased respondent's self-confidence (64.1% of students).

On the other hand, the research of Almassaad et al. (2024) also examined the negative consequences of using GAI tools: reduction of the frequency of interpersonal communication

(46.4% of respondents), spread of plagiarism and cheating (42.6%), negative impact on the education process in the future (35.9%), threat to users' personal data (29%). Respondents also mentioned another group of negative or problematic consequences: unreliable information (41.4%), and 42.3% of students mentioned inaccurate or false sources provided.

A very large-scale study by Malmström et al. (2023) is somewhat older, but it is interesting not only for its results but also for its country of origin. The research was conducted in many universities throughout Sweden, a country that is culturally and otherwise closer to the Czech Republic. Almost all the respondents (about 95%) are familiar with ChatGPT (but typically not with other chatbots). Approximately 35% of students use ChatGPT regularly. Among other tools, language translation tools are widely used. (Malmström et al., 2023)

ChatGPT is by far the best-known and most widely used tool in all foreign studies, as well as in research on Czech students. The lower proportion of students in Sweden using these tools regularly and the smaller range of tools can again be attributed to the year of the survey, which is the same as that of the survey conducted by Chan & Hu (2023). Overall, most students in Sweden are positive towards the use of chatbots and other GAI tools in education. Many claim that GAI makes them more effective as learners. (Malmström et al., 2023)

The generally positive attitude of students is again common to all papers examined. On the other hand, 54% of students in Sweden expressed concerns regarding the potential impact of chatbots on education in the future (Malmström et al., 2023).

Regarding ethical issues, 62% of students at Swedish universities agree that the use of chatbots in assignments and exams is a form of cheating. Interestingly, at the same time, an almost equal number of students (60%) are against the prohibition of chatbots in education. Most students are unsure whether their educational institutions have established guidelines for the responsible use of GAI. One in four (26% precisely) explicitly says that their institution lacks such rules or guidelines. (Malmström et al., 2023)

Almost 29% of respondents in the study of Malmström et al. (2023) also provided individual comments (open-ended answers), adding thoughts and reflections about the practical and ethical use of GAI in higher education. Thematic analysis of comments was conducted. Three major topics were found:

- The adaptation of education systems to integrate GAI in teaching and learning.
- Legitimate functions of GAI and its significant applications in higher education.
- Ethical considerations, especially in assignments and exams.

Based on the authors' findings, the answers to the research questions (RQ) formulated in Section 2 can be summarized as follows.

RQ1: The most frequently used tool is ChatGPT, mentioned by 218 out of 228 respondents (i.e. 98.2% of GAI users). Students primarily use it to explain topics, prepare for exams, write seminar papers, and generate text. Other commonly used tools include DeepSeek, Copilot, Gemini, and DeepL Write.

RQ2: Most students report positive experiences with GAI. They highlight benefits such as faster learning, easier access to information, and the development of critical thinking and technological skills. However, more than half of the respondents encountered issues, most commonly unreliable information, misunderstanding of queries, or the need to rephrase prompts.

RQ3: ChatGPT is the most recommended tool (192 recommendations). Students consider it a versatile assistant suitable for a wide range of academic tasks. Other recommended tools

include DeepSeek, Copilot, DeepL Write, and Perplexity. Some students also suggested specialized tools for presentations or programming.

RQ4: Statistical analysis revealed that the frequency of GAI use is positively influenced by the number of tools used and negatively influenced by the degree of study—bachelor's students use GAI more frequently than master's students. Differences between fields of study and universities were not statistically significant.

Although the research from the Czech Republic has yielded valuable insight, several limitations should be noted. The first limitation is the structure and size of the sample, which may restrict the generalizability of the results and fail to adequately represent the diversity of opinions and the overall structure of the Czech university population. This is also related to the anonymous completion of the questionnaire via Google Forms, where the authors did not forget to check the received data for possible duplicates.

Most students are from four schools, although they are relatively diverse: the Prague University of Economics and Business (economics and computer science), the Czech Technical University (technical fields), Charles University (a wide range of fields), and the Czech University of Life Sciences (agricultural fields).

Another limitation is the subjective nature of the responses. Students may have responded under the influence of social desirability or personal preferences, which may skew the results. The research also relies on self-assessment of the impact of GAI, rather than objective measurements of academic performance. This means that the impact of GAI on academic performance has not been verified, for example, by comparing students' grades or outputs.

A regression model revealed some significant relationships, for example, the positive influence of the number of tools used on the frequency of GAI use and the negative influence of higher degrees of study. However, a task type, motivation, or teacher approach was not included.

Conclusion

This study confirms that GAI tools have become an integral part of academic life for Czech university students. ChatGPT is the most widely used tool, primarily for explaining topics, preparing for exams, and generating academic content. Students report mostly positive experiences, including improved learning efficiency, better organization, and enhanced motivation. Despite encountering issues such as unreliable information or misunderstood queries, the overall perception of GAI tools remains favorable.

In practice, universities should consider integrating GAI literacy into their curricula, promoting critical thinking and the ethical use of GAI. Educators are encouraged to guide students in using these tools effectively while maintaining academic integrity. Institutions may also explore the development of their own GAI tools tailored to specific educational needs, ensuring alignment with pedagogical goals and data privacy standards.

Future research should focus on the long-term impacts of GAI on academic performance, including experimental studies that compare student outcomes over time. It would also be beneficial to explore how different teaching approaches and institutional policies influence the responsible use of GAI in education. Additionally, future studies could investigate the role of GAI in developing soft skills such as creativity, collaboration, and digital literacy, as well as its potential integration into personalized learning systems. For a deeper understanding, it would be helpful to conduct long-term research, ideally combined with an experimental design that allows changes over time to be monitored and enables comparisons between students with different approaches to GAI.

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JAK STUDENTI VYUŽÍVAJÍ GENERATIVNÍ UMĚLOU INTELIGENCI: POZNATKY Z ČESKÉHO PRŮZKUMU

Tento článek zkoumá využití nástrojů generativní umělé inteligence (GAI) mezi studenty českých vysokých škol v různých oborech studia. Na základě kvantitativního průzkumu (únor až květen 2025) mezi 228 respondenty studie identifikuje nejčastěji používané nástroje GAI a zkoumá zkušenosti, výhody a obavy studentů. Pomocí deskriptivní statistiky výsledky u studentů informačních technologií (IT) odhalují vysokou míru přijetí a zdůrazňují jak pozitivní dopady na učení a motivaci, tak obavy ohled ně spolehlivosti a etických otázek. Analýza odhalila, že počet nástrojů GAI má pozitivní vliv na frekvenci používání nástrojů GAI, a že stupeň studia má na tento vztah negativní vliv.

WIE STUDIERENDE DIE GENERATIVE KÜNSTLICHE INTELLIGENZ NUTZEN: ERKENNTNISSE AUS EINER TSCHECHISCHEN UMFRAGE

Der Artikel analysiert die Toolsnutzung der generativen künstlichen Intelligenz (GAI) unter Studierenden verschiedener Fachrichtungen an tschechischen Hochschulen. Auf der Grundlage einer quantitativen Umfrage unter 228 Befragten identifiziert die Studie die am häufigsten verwendeten Tools wie ChatGPT und untersucht die Erfahrungen, Vorteile und Bedenken der Studierenden. Die Ergebnisse zeigen eine hohe Akzeptanz, v.a. unter IT-Studierenden, und heben sowohl die positiven Auswirkungen auf das Lernen und die Motivation als auch die Bedenken hinsichtlich der Zuverlässigkeit und ethischer Fragen hervor. Die statistische Analyse ergab, dass die Häufigkeit der Nutzung generativer KI-Tools positiv durch die Anzahl der verwendeten GAI-Tools und negativ durch das Studienniveau beeinflusst wird.

JAK STUDENCI WYKORZYSTUJĄ GENERATYWNĄ SZTUCZNĄ INTELIGENCJĘ: WNIOSKI Z CZESKICH BADAŃ

W niniejszym artykule badaniem objęto wykorzystanie narzędzi generatywnej sztucznej inteligencji (GAI) wśród studentów czeskich uczelni wyższych na różnych kierunkach studiów. Na podstawie badań ilościowych przeprowadzonych (luty-maj 2025) wśród 228 respondentów zidentyfikowano najczęściej używane narzędzia GAI i zbadano doświadczenia, korzyści i obawy studentów. Za pomocą statystyki opisowej wyniki uzyskane wśród studentów technologii informacyjnych (IT) wskazują na wysoki poziom akceptacji i podkreślają zarówno pozytywny wpływ na uczenie się i motywację, jak i obawy dotyczące niezawodności i kwestii etycznych. Analiza wykazała, że liczba narzędzi GAI ma pozytywny wpływ na częstotliwość stosowania narzędzi GAI, a poziom studiów ma negatywny na tę zależność.