Research in Learning Technology
Vol. 33, 2025

ORIGINAL RESEARCH ARTICLE

Exploring perspectives on ChatGPT integration in education: A student-centered study of benefits, concerns, and global implications for responsible AI integration

Lawrence Ibeh[a], Noah Cheruiyot Mutai[b]*, Olufunke Mercy Popoola[b], Nguyen Manh Cuong[b] and Sandra Ejiofor[b]

[a]*Faculty of Computer Science and Informatics, Berlin School of Business and Innovation, Berlin, Germany;* [b]*Faculty of Economics and Business Administration, Berlin School of Business and Innovation, Berlin, Germany*

Received: 15 November 2024; Revised: 2 May 2025; Accepted: 9 May 2025; Published: 3 July 2025

For this study, 350 university students in Germany were surveyed to understand how they perceive ChatGPT's educational advantages and challenges. Using a combination of quantitative and qualitative methods, it found out that students tend to see ChatGPT as helpful for academic performance (53.14%), writing (47.14%), and exam preparation (50.00%). Nonetheless, a large majority of people expressed doubt regarding its ability to understand queries (61.72%), reliability (52.29%), privacy (52.57%), bias (47.43%), security (55.14%) and displaced jobs (56.29%). These concerns were reinforced by open ended responses, which showed that attitudes towards AI can be based on factors such as a person's digital literacy and their experience with AI. In the study, the researchers propose a need to incorporate AI education into curricula in order to teach students to critically assess AI- generated content and to identify biases. Moreover, it suggests setting ethical standards that AI systems need to meet such as accuracy, security, and transparency. Perspectives between cultures vary, and require the teacher to conduct more global research, and approach teaching context specifically. The overarching goal is to promote the thoughtful, ethical, and context-aware integration of AI into educational practices worldwide.

Keywords: artificial intelligence; ChatGPT; education; perceptions of AI in education

Introduction

ChatGPT is an artificial intelligence (AI)-powered natural language processing (NLP) platform that lets users interact with the chatbot in a human-like manner and carry out a variety of tasks. According to Ortiz (2023) the language model may respond to inquiries and help with assignments like emails, essays, and coding. As the industry's next major disruptor, ChatGPT can produce information in concise, understandable words and come up with original ideas for blog posts and business

*Corresponding author. Email: noah.mutai@berlinsbi.com

Citation: Research in Learning Technology 2025, **33**: 3384 - http://dx.doi.org/10.25304/rlt.v33.3384

plans (Ortiz, 2023). Three of ChatGPT's primary features have been determined. The model can (1) generate dialogues, which are natural language responses in conversational contexts covering a wide range of topics; (2) answer questions on a variety of topics in a conversational format; and (3) generate texts in particular genres or styles (Rudolph et al., 2023). Five days after its initial debut, ChatGPT had one million users (OpenAI et al., 2023; see Figure 1). High user traffic occasionally caused error warnings during development, which aided in continuous enhancements (Rudolph et al., 2023). ChatGPT had 100 million monthly active users by 2023 (Figure 1). With over 1.8 billion monthly views in April 2023, ChatGPT surpassed Reddit and Netflix to become one of the most popular websites in the world (Hill, 2023). This quick expansion is a remarkable accomplishment made in a comparatively short period of time.

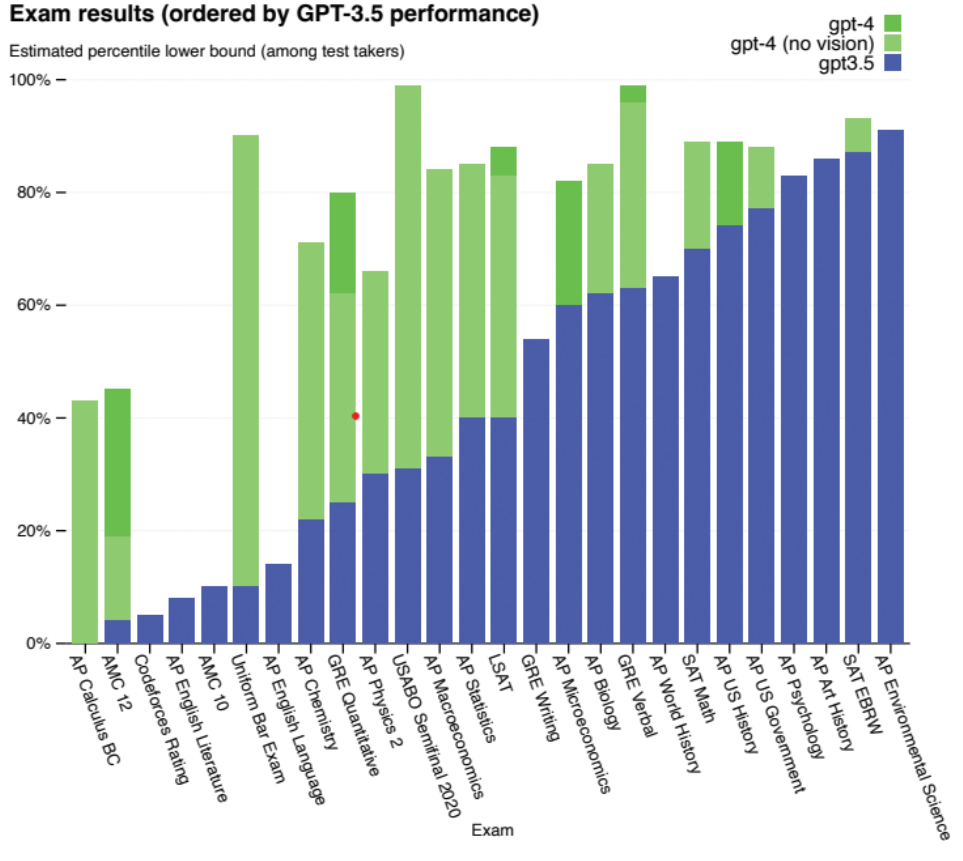

Figure 1. GPT Performance on Academic and Professional Exams. 'In each case, we simulate the conditions and scoring of the real exam. Exams are ordered from low to high based on GPT-3.5 performance. GPT-4 outperforms GPT-3.5 on most exams tested. To be conservative, we report the lower end of the percentile range, which results in some artifacts for AP exams with wide scoring bins. For instance, although GPT-4 achieves the highest possible score on AP Biology (5/5), it is displayed only at the 85th percentile because 15% of test-takers attain that score'.

Source: (OpenAI et al., 2023).

Citation: Research in Learning Technology 2025, **33**: 3384 - http://dx.doi.org/10.25304/rlt.v33.3384

The applications for ChatGPT are numerous and span business, industry, education, and everyday life (Rudolph et al., 2023). These applications include, but are not limited to, providing efficient translation services (Ortiz, 2023) producing content (Rudolph et al., 2023) and providing individualized learning experiences that can direct students according to their specific needs. Creating and managing content, creating advanced chatbots for customer support, and other applications are also possible (Ortiz, 2023).

ChatGPT in education

Scientific investigations into ChatGPT's role in education have recently emerged within AI and education research (Memarian & Doleck, 2023; Ngo, 2023). Concerns include the effective implementation of AI, its long-term impact on teaching roles, and how students assess AI's role in their education (Memarian & Doleck, 2024). Additional debates centre on whether AI will enrich or undermine students' intellectual development (Zhang, 2023). Recently, the use of AI for diverse educational purposes, such as lecture preparation, curriculum development, and writing assignments, has grown exponentially. ChatGPT, a generative pre-trained transformer, has become one of the most popular AI tools since its development about half a decade ago. Launched by OpenAI in late 2022, ChatGPT has attracted considerable attention due to its impressive capabilities in generating well-structured, logical, and informative responses, capturing global interest (Rudolph et al., 2023; Zhai, 2022). It provides human-like response generation with a focus on personalized and interactive assistance (Ngo, 2023). According to OpenAI et al. (2023), ChatGPT's launch significantly boosted OpenAI's estimated valuation to US$29 billion. As an AI-driven application, ChatGPT can engage users in human-like conversations, and its wide-ranging applications and benefits helped it reach one million users within just 5 days of its launch (Rudolph et al., 2023). ChatGPT has since revolutionized sectors such as education and business, becoming one of the most popular applications globally. The *New York Times* coined ChatGPT 'the industry's next big disrupter' that 'could change the world' (Grant & Metz, 2022). Such an extraordinary surge of adoption of ChatGPT signals the large impact and wide acceptance of ChatGPT in NLP, as well as the transformational role of ChatGPT in NLP (Ngo, 2023). The interest of the entire world in learners (Ngo, 2023) is drawn to ChatGPT, which promises to be a valuable tool to support the students in their educational journey. But this rapid adoption has also brought with it many problems.

ChatGPT has been recently assessed for educational purposes (Cooper, 2023; Cotton et al., 2024; Dwivedi et al., 2023; Kasneci et al., 2023; Memarian & Doleck, 2023). A number of these studies, including reviews and recent empirical research, primarily analyse ChatGPT's capability, limitations, and challenges from qualitative perspectives. In line with Cooper (2023) future studies should be more empirical in nature and formulating research questions about perceptions of using ChatGPT in education to fill in a significant research gap.

Some empirical research on ChatGPT and education found that it is still unclear how ChatGPT impacts learning (Dai et al., 2023; Elder et al., 2023; Ngo, 2023). For instance, Dai et al. (2023) human annotated ChatGPT feedback and teacher feedback to measure the degree of agreement between them in terms of polarity across assessment criteria, which was a very laborious procedure. In order to gain a

wider representation of learners, Ngo (2023), highlights that future research could improve external validity by incorporating participants from a variety of age groups and educational levels. Furthermore, Dai et al. (2023) discovered that ChatGPT consistently produces understandable feedback, supporting its usage to assist teachers in giving more thorough, individualized feedback to larger classrooms in less time.

Few studies explore students' real experiences with ChatGPT use, despite the growing concerns and need for in-depth examinations into how people perceive ChatGPT in the classroom. This paper's main goal is to focus on closing this gap. We systematically observe, document, and analyse university students' perspectives on integrating ChatGPT in education, without manipulating variables with a combination of quantitative and qualitative data

Method

The quantitative and qualitative research design was used to methodically observe, record, and examine the opinions of university students towards the integration of ChatGPT in the university without any variables changed. The confirmation of conclusions drawn from structured surveys was the purpose of using open ended interview qualitative data. This design gives an accurate representation of current circumstances and interactions within a specific context (Dulock, 1993). Semi-structured questionnaires were delivered using Microsoft Forms, the online survey tool to a purposive sample of 350 students to gather quantitative data.

This method ensured the sampling of students from different disciplines and efficient data gathering. The use of semi-structured questionnaires allowed participants to expand on their answers and be consistent with their responses. The ethical considerations were given top priority throughout the investigation. The participants were properly explained the nature, hazards, and advantages of the study, and their privacy and confidentiality were preserved through anonymization and safe storage of data. With this approach, we were able to follow an in-depth manner in presenting the opinions of university students regarding the integration of ChatGPT in education and this will provide helpful information for future research and decision.

Statistical model

A multinomial logistic regression model was used to evaluate university students' opinions of ChatGPT based on a descriptive statistical analysis of quantitative data. In the case that the dependent variable consists of more than two category outcomes such as the different perceptions students may have, this statistical technique is appropriate (Kwak & Clayton-Matthews, 2002). The dependent variable in this situation most likely reflects various classifications or degrees of perception (e.g. positive, neutral, negative).

The model estimates how probable each perception category is in comparison to a reference category, typically the most prevalent or baseline perception. This is achieved by assessing the relationship between the different types of perceptions and the predictor variables (e.g. demographics and the frequency of ChatGPT use).

Citation: Research in Learning Technology 2025, **33**: 3384 - http://dx.doi.org/10.25304/rlt.v33.3384

The coefficients of the regression provide insight into how each predictor variable impacts the probability of having a certain perception.

The mathematical formulation of the multinomial logistic regression model is estimating the probability of each category k of the dependent variable Y, given a collection of predictor variables, X_1, X_2, … , X_p. Suppose the predictors are given and let P(X=k|X) be the probability of category k. In the model, a relationship with a linear form is assumed between the log-odds of the probabilities and the predictors.

$$\log\left(\frac{P(Y = k \mid X}{P\left(Y = \text{reference category} \mid X\right)}\right) = \beta_{0k} + \beta_{1k}X_1 + \beta_{2k}X_2 \ldots + \beta_{pk}X_p \tag{1}$$

where β_{0k} represents the intercept of the category k, β_{1k}, β_{2k}, …, β_{pk} are the coefficients associated with the predictors for X_1, X_2, …, X_p category k. P(Y = reference category|X) is the probability of the reference category, often chosen as baseline for comparison. The probabilities for each category are obtained by exponentiating the log-odds.

$$P\left(Y = k \mid X\right) = \frac{e^{\beta_{0k} + \beta_{1k}X_1 + \beta_{2k}X_2 \ldots + \beta_{pk}X_p}}{1 + \sum_{j-1}^{K-1} e^{\beta_{0j} + \beta_{1j}X_1 + \beta_{2j}X_2 \ldots + \beta_{pj}X_p}} \tag{2}$$

Where *K* is the total number of categories for the dependent variable Y The coefficients, $\beta_{0k} + \beta_{1k} X_1 + \beta_{2k} X_2 \ldots + \beta_{pk} X_p$ are estimated using the maximum likelihood and the model parameters are fitted to the data using optimization algorithms (Böhning, 1992).

Results

Demographic information of participants

According to Table 1, the majority of responders are between the ages of 26 and 35, which roughly matches the typical demographic of university students. This suggests that the survey primarily gathers opinions from those who are now enrolled in or have just completed their higher education. A sizable percentage of participants hold bachelor's or master's degrees, indicating that the sample's educational attainment is comparatively high. Educationally, the participants are likely to have the academic knowledge and critical thinking skills necessary to offer thoughtful feedback on ChatGPT. In terms of the respondents' employment status, a significant proportion of them are either full time or part time workers though they differ in terms of their employment status. The survey covers people who have taken up jobs after completing their education as well as students who are juggling their careers with education. The demographics of the poll are overall quite diverse and target a wide variety of college students, both as it pertains to traditional undergraduates and also those pursuing graduate degrees or working part time or full time. College students have varied demographics that make the survey comprehensive and representative in acquiring opinions about ChatGPT. Lastly, the demographics offer a background for understanding the background and views of the survey respondents with reference to university students' opinions of ChatGPT.

Table 1. Demographic information of participants.

	Category	Number	Percentage
Age	<18	1	0.29
	>55	2	0.58
	18–25	136	39.19
	26–35	166	47.84
	36–45	36	10.37
	46–55	6	1.73
Highest level of education	Bachelor's degree	192	55.33
	Doctorate degree	1	0.29
	High school	34	9.80
	Higher Diploma in Software Development	1	0.29
	IGCSE	1	0.29
	Master's degree	112	32.28
	Post law course	1	0.29
	Post-doctorate	4	1.15
	Undergraduate	1	0.29
Employment status	Full-time	48	13.83
	Internship	8	2.31
	None of the above	124	35.73
	Part-time	167	48.13

Descriptives statistics

Here we interpret and discuss the results of Table 2 and 3 below. A total of 53.14% of the respondents believe that using ChatGPT technology will enhance academic achievement. This suggests that there is widespread acceptance of the potential benefits that ChatGPT could offer for enhancing academic performance. Around 47.14% of the participants are aware of the possible advantages of ChatGPT in writing assignments. This is why several users consider ChatGPT as a helpful instrument to generate textual content. About 50% of the participants are aware of the benefits of using ChatGPT for maximizing exam performance. This is acknowledging the ability of ChatGPT to assist with studying and preparing for tests. About 45.71% of participants believe that ChatGPT is advantageous for social research. This means that ChatGPT is a worthwhile tool for conducting research and analyzing social media data. Almost 44.86% of the participants believe that ChatGPT can be useful for the game. That is why it is an example of how ChatGPT can be used in scenarios that are not confined to academia or research.

According to the results, 37.71% of the participants estimate that ChatGPT can bring benefits to translation work. This implies that ChatGPT has been recognized as being able to enhance interlanguage communication. Out of the respondents, 40.00% have knowledge of the possible benefits that ChatGPT can utilize to build resumes. Therefore, ChatGPT could be considered a good tool for job seekers to create their professional profiles. According to 44.29% of the respondents, ChatGPT can help them to learn more about their particular fields of expertise.

ChatGPT is one useful resource for learning and integrating information related to a particular academic or professional domain. Approximately 43.14% of the participants knew that ChatGPT can possibly decipher questions in their field of research.

Citation: Research in Learning Technology 2025, **33**: 3384 - http://dx.doi.org/10.25304/rlt.v33.3384

This shows that ChatGPT can be thought of as a good source for understanding complex questions and providing data or viewpoint that is relevant to the topic.

Half of the participants say that ChatGPT is dramatically altering their lives (Figure 2). These results indicate that a good number of people are including ChatGPT into some parts of their everyday lives, interactions, or schedule. It can increase productivity, make knowledge retrieval easier, aid in decision making,

Table 2. Statements regarding the benefits of ChatGPT in the education sector.

Statement	Extremely very likely (%)	Likely (%)	Unlikely (%)	Very likely (%)
Do you think ChatGPT technology will have beneficial functions to academic performance?	12.29	53.14	8.00	16.86
ChatGPT for writing assignment	9.43	47.14	19.14	24.29
ChatGPT benefits for exam performance	5.43	50.00	22.29	22.29
ChatGPT benefits for social research	12.29	45.71	7.71	34.29
ChatGPT for Gaming	9.14	44.86	25.43	20.57
ChatGPT for Translation	16.29	37.71	10.57	35.43
ChatGPT for CV writing	14.86	40.00	8.57	36.57
ChatGPT being used to enhance the knowledge of your field	16.00	44.29	4.57	35.14
ChatGPT being used to interpret questions in your field	14.29	43.14	6.00	36.57

Table 3. Statements regarding the challenges of ChatGPT in the education sector.

Statement	Extremely very likely (%)	Likely (%)	Unlikely (%)	Very likely (%)
ChatGPT misinterpreting questions	6.29	55.43	19.43	18.86
ChatGPT is unreliable	3.43	48.86	34.57	13.14
ChatGPT being used to invade your privacy	7.43	45.14	27.71	19.71
ChatGPT having discriminatory contents	4.86	42.57	37.71	14.86
ChatGPT used for terrorist activity	6.00	37.71	41.43	14.86
ChatGPT making bias decisions	6.29	46.00	31.14	16.57
ChatGPT hacked and stealing/losing large amounts of your private data	6.57	48.57	28.57	16.29
ChatGPT replacing handwork of students	12.29	44.29	17.43	26.00
ChatGPT replacing company professionals	11.43	42.29	21.14	25.14
ChatGPT becoming more intelligent than humans	10.29	41.71	28.00	20.00

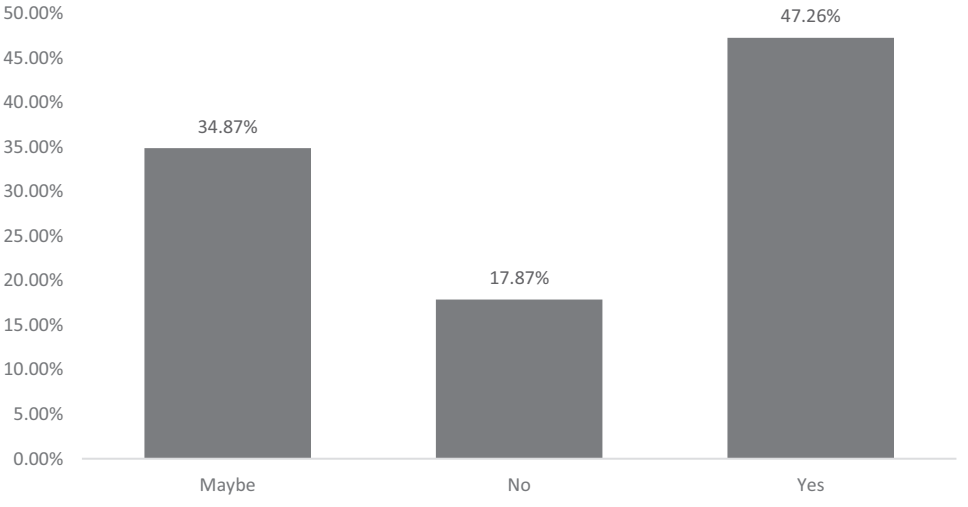

Figure 2. Whether ChatGPT is making a noticeable impact in your life.

as well as assist with communication—just to name a few. More than 33% of the respondents are not sure if ChatGPT has such an impact on their lives. This response suggests that people are somewhat unclear or conflicted about ChatGPT's effects. This indicates that while some people may witness certain effects of ChatGPT on their lives, others may not or may think that the effect is not enough to be sure of. Some responders said that ChatGPT is not having a big effect on their lives. So, this means that ChatGPT could not be making a huge difference in the daily routine, pursuits, or experiences of certain people. Perhaps they do not use ChatGPT all that much or perhaps they feel that the features it has fit their needs or preferences.

Challenges of ChatGPT in education

Table 3 are statements regarding the challenges of ChatGPT in the education sector. It seems that the apparent limitation of ChatGPT's interpretation and understanding skills is a cause of concern for a significant majority of participants, as they are concerned about its ability to accurately understand and reply to customer questions (61.72%). Nearly 52.29% of the participants are suspicious about ChatGPT's reliability as it may not be dependable in delivering accurate and reliable information.

In some cases, doubts about the technology's reliability may hinder its adoption and use. Out of more than half of the respondents (52.57%), respondents were concerned about ChatGPT being used to violate users' privacy, as there is a high degree of concern about this issue. This shows the significance of robust data security measures being put in place and ensuring transparency when it comes to the development and deployment of AI technologies to mitigate privacy risks.

About 47.43% of all the participants believe that ChatGPT may produce responses that are biased or discriminating. This highlights how critical it is to address biases in AI models and develop policies that encourage inclusivity and equity in AI-produced content. The study also says that there are fears that

Citation: Research in Learning Technology 2025, **33**: 3384 - http://dx.doi.org/10.25304/rlt.v33.3384

ChatGPT can be misused for bad purposes such as assisting terrorist attacks or promoting extremist ideologies.

More than half of participants, 43.71% to be exact, think that this is a likely or extremely likely occurrence, which is why it is so important to exercise caution and have rules in place to prevent abuse. Several respondents express concerns about ChatGPT's ability to make biased decisions and the majority believe (52.86%) that this outcome is likely or very likely. These facts cause concerns about the impact of AI algorithms reinforcing or amplifying prior prejudices. According to the survey, a significant number of participants (55.14%) are concerned about the security threats posed by ChatGPT as they think it can be hacked and users' private data can be compromised. This emphasizes how important it is to put in place robust cybersecurity procedures. A sizable portion of participants (56.29%) think that ChatGPT might replace experts' and students' manual labour in a number of industries. This suggests worries about the potential disruption of current systems. According to the survey, the vast majority of participants (51.00%) believe that ChatGPT would surpass human intelligence in a probable or highly possible manner. This indicates an understanding of the rapid advancements in AI technology.

Model results

A more thorough grasp of how various demographic and socioeconomic aspects affect college students' opinions toward the use of ChatGPT in the classroom can be gained by multinomial logistic regression. Table 4 are the results of the multinomial logistic regression model. The logarithm of the likelihood of moving from the reference category ('Yes') to alternative responses ('Maybe' and 'No') is represented by the model's coefficients. A higher probability of answering 'Maybe' or 'No' in comparison to the reference group is implied by positive coefficients, while a lower probability is indicated by negative coefficients. In terms of age, the fact that certain age groups have positive coefficients suggests that younger students are more likely than older students to be unsure or to have a bad assessment of ChatGPT's impact.

The same is true for the coefficients for specific educational levels; if they are positive, it means that those with higher or lower education than a bachelor's degree are more likely to have unclear or unfavourable opinions. An analysis of employment status coefficients suggests that students who are not full-time employed (e.g. students who are part time employed or participate in an internship) are more likely to show ambiguity or have negative attitudes towards the use of ChatGPT in educational settings. Moreover, the income components indicate that the students with higher incomes tend to give unclear or unfavourable judgments, compared with those with lower incomes. The results of these results show the impact of socioeconomic and demographic factors on students' opinions of ChatGPT integration. Understanding these relations could guide educational policy and programmes to harness the benefits of ChatGPT in the classroom, and tackle the challenges and uncertainties faced by students of different demographic and socioeconomic backgrounds.

The *p*-value for the intercept is very low (0.0000035) suggesting that the whole model (i.e. accounting for all predictors) is statistically significant. It means that there is strong evidence against the null hypothesis, that is the intercept is 0. For those over 55, age groups have very low *p*-values, almost 0. This indicates that students' age is a large determinant of their responses. This implies that the age of students has a

Table 4. Model results for multinomial logistic regression.

	Coefficients		Standard errors		z-statistic		*p*-values	
	Maybe	No	Maybe	No	Maybe	No	Maybe	No
(Intercept)	−2.4246979	12.3884991	0.5229394	0.4942815	−4.6366707	25.0636493	0.0000035	0.0000000
Age >55	20.8677659	6.3186086	0.7486303	0.7486303	27.8745932	8.4402252	0.0000000	0.0000000
Age 18–25	0.4782970	-14.1865995	0.3836918	0.4369187	1.2465654	−32.4696538	0.2125569	0.0000000
Age 26–35	0.7775869	−13.4831580	0.3581820	0.3860714	2.1709266	−34.9240022	0.0299367	0.0000000
Age 36–45	0.6522917	−13.2221007	0.4614416	0.4650686	1.4135952	−28.4304323	0.1574808	0.0000000
Age 46–55	0.7222135	−13.6906853	1.0391775	1.0833760	0.6949857	−12.6370576	0.4870643	0.0000000
Highest_level_of_educationHigh school	0.2212472	0.5387142	0.4401922	0.5398424	0.5026151	0.9979102	0.6152349	0.3183229
Highest_level_of_educationMaster's degree	−0.5230016	−0.5066129	0.3061522	0.3676489	−1.7083060	−1.3779802	0.0875796	0.1682094
Highest_level_of_educationOthers	−0.9314603	−0.0734704	1.3560760	1.2545333	−0.6868792	−0.0585640	0.4921589	0.9532994
Employment_statusInternship	0.4538588	1.8472377	1.0228099	0.9778307	0.4437372	1.8891181	0.6572326	0.0588760
Employment_statusNone of the above	0.8391720	0.7321942	0.4720238	0.5453861	1.7778173	1.3425245	0.0754339	0.1794260
Employment_statusPart-time	0.4979836	0.3891169	0.4729054	0.5272734	1.0530300	0.7379794	0.2923272	0.4605270
IncomeEUR 500 or less	1.1856070	−0.3036437	0.5387847	0.5324515	2.2005210	−0.5702748	0.0277700	0.5684913
Income 501 to 900	1.3935750	0.1850945	0.5440262	0.5224369	2.5615956	0.3542906	0.0104193	0.7231211
IncomeEUR 901-EUR 1300	0.9264184	−0.0748917	0.5460445	0.5166425	1.6965986	−0.1449585	0.0897726	0.8847437

Citation: Research in Learning Technology 2025, 33: 3384 - http://dx.doi.org/10.25304/rlt.v33.3384

statistical effect on the probability that they choose 'Maybe' rather than 'Yes' in their answers. Additionally, it is evident from the relatively low *p*-values for different educational levels that education level has a statistically significant impact on students' responses, for example, for having a master's degree (0.0875796). Several employment statuses seem to be statistically significant predictors of students' answers (relatively low *p*-values, e.g., 0.0754339). The income groups are statistically significantly lower than the *p*-values (e.g. 0.0277700) indicating that income level is a statistically significant predictor of students' response.

Classification table

By showing the actual and expected classifications for a particular dataset, the classification (Table 5)—also known as the confusion matrix—provides a succinct summary of a classification model's performance. The classification table provides a succinct summary of the multinomial logistic regression model's accuracy in predicting students' responses based on the available data, all within the context of investigating university students' opinions regarding the use of ChatGPT in the classroom. The number of times the model predicted a certain answer category (Yes, Maybe, or No) and the matching actual response category shown in the data is shown in each cell of the table.

The model correctly predicted 70 situations when students selected 'Yes', for example, as indicated by the cell at the intersection of the first row and first column (70), even though the actual response was unquestionably 'Yes'. In the same way, the cell at the intersection of the second row and second column (30) shows the precise prediction of 30 instances in which students gave the response 'Maybe', but the response was actually 'Maybe'. Likewise, the cell located at the intersection of the third row and third column (3) indicates that the model correctly predicted three instances in which pupils received a 'No' response, and the actual response was unquestionably 'No'. In the context of the study, an effective model that demonstrates a high degree of prediction accuracy implies that the socioeconomic and demographic variables taken into account by the model (such as age, income, employment status, and educational attainment) offer important insights into students' perspectives regarding the use of ChatGPT in the classroom. These factors significantly affect how students evaluate ChatGPT's effectiveness in the classroom.

Discussion

Quantitative data

This study examines how university students feel about using ChatGPT in a classroom. Although other studies have examined ChatGPT's effectiveness in

Table 5. Classification table.

	Yes	Maybe	No
Yes	70	0	0
Maybe	0	30	0
No	0	0	30

areas like helping with writing tasks or increasing productivity, less focus has been placed on university students' distinct perspectives and applications of this technology in a learning environment. Current research frequently ignores the unique requirements and viewpoints of college students in favour of concentrating on the technical aspects of AI or public perceptions about it. This study fills this gap by providing important insights into the possible benefits, concerns, and challenges of bringing ChatGPT into educational practices and making a larger contribution to understanding how ChatGPT may help students learn and succeed academically.

The survey results indicate that ChatGPT has a proven potential in professional, academic and recreational spheres. The majority of the responders (50.00%) point out its adaptability, especially as regards its advantages for exam preparation (50.00%), writing assignments (47.14%), and academic success (53.14%). These results are in line with Hadi Mogavi et al.'s (2024) discovery that ChatGPT is used in K-12, higher education, and skills training. However, a significant portion of respondents were sceptical or uninterested in how ChatGPT would impact their life and how they would incorporate it into their daily life.

ChatGPT's (56.29%) ability to replace human functions and security issues (55.14%) highlight some of the wider social concerns about AI technologies. Al-Mughairi and Bhaskar (2024) also reported similar concerns where reliability, accuracy, reduced human interaction, and privacy and security were the major issues associated with ChatGPT. Other concerns were ChatGPT's question interpretation accuracy (61.72%), dependability (52.29%), privacy (52.57%), content bias (47.43%), and possibility for misuses (43.71%).

A multinomial logistic regression also demonstrated what influences ChatGPT's educational integration based on student opinions and showed the need for regulations considering various student backgrounds. Abdaljaleel et al. (2024) also found similar results; those with an opinion on ChatGPT were influenced by age, university type, country of residence, and recent academic success. Based on these findings, ethical issues, strict monitoring, and inclusivity in AI development and deployment play a key role in optimizing ChatGPT's advantages and mitigating potential concerns.

The study is relevant for educators, legislators, and AI developers looking to introduce ChatGPT in the educational environment. These insights can be used by teachers to change their teaching methods and support systems in line with the views and concerns of their students regarding ChatGPT. Besides, teachers can strengthen students' critical thinking abilities and academic independence by encouraging critical interaction with AI content and prompting them to talk about the ethics of AI. When developing rules and regulations on AI in education, legislators should consider the security flaws, content bias, and privacy concerns students have with existing AI in education. Data privacy of student data should be protected, as should accountability and transparency in the development of the AI, as well as a guarantee of routine auditing by the AI for errors and biases. The priority of accuracy, dependability, privacy, bias, and security is crucial for AI developers. Understanding of AI algorithms and decision-making processes is provided to users by enhancing transparency and explainability, so as to understand how behind decisions are made on which information. Teachers and students could co-design AI-powered learning resources to enable the responsible use of AI for enhancing user experience.

Citation: Research in Learning Technology 2025, **33**: 3384 - http://dx.doi.org/10.25304/rlt.v33.3384

Confirmation of findings with qualitative data

Some students saw ChatGPT as 'a tool to brainstorm faster', while others were worried about 'not knowing when it's wrong', according to open-ended comments. These qualitative observations give the quantitative data depth and practical interpretations of the advantages and disadvantages that are thought to exist. For example, here a few responses on the question

> 'What is your first thought when you think of ChatGPT or any AI?'
>
> 'When I think of ChatGPT or any AI, my first thought is that it's an advanced answering machine—more harmful than helpful in the long run due to overdependence and misinformation risks'

(Gender): Female| (Marital Status): Married | (Age): 18–25 | (Education): High school

> 'My initial impression is that ChatGPT represents a remarkable innovation enhanced by technology, pushing the boundaries of how we process and interact with information in the digital age'

(Gender): Male | (Marital Status): Married | (Age): 36–45 | (Education): Master's degree

> 'The first thing that comes to mind is speed—ChatGPT makes everything faster, from writing and research to solving problems and learning new things'

(Gender): Woman |(Marital Status): Single | (Age): 18–25 |(Education): Bachelor's degree

> 'I think of ChatGPT as a tool designed to make human work easier and more efficient, not something that should completely replace people but rather support them'

(Gender): Male | (Marital Status): Single | (Age): 18–25 | (Education): High school |

Opinions of ChatGPT range widely, from scepticism to admiration, as evidenced by the open-ended responses. While some students praise the tool for its speed, efficacy, and ability to increase productivity, others voice worries about inaccurate information, over-reliance, and potential harm. According to the quantitative results, the majority of respondents recognized ChatGPT's academic benefits (such as for writing and test preparation), but they were dubious about its reliability and ethical consequences. These accounts are in line with those findings.

The finding's significant implication is the difference in opinions by age and level of education. The respondent with a master's degree, for instance, placed more emphasis on technological innovation and digital transformation than younger respondents with only a high school or bachelor's degree, who focused more on the perceived risks (dependency and misinformation) or the practical benefits (speed and efficiency). These answers imply that opinions about ChatGPT and other AI tools are not universal and are influenced by education, digital literacy, and individual

experiences. This emphasizes how crucial it is to teach AI and digital competency to a variety of learner groups in order to promote critical interaction with these technologies.

All in all, the qualitative insights support the study's suggestion that AI literacy be incorporated into the curriculum to foster the educated, moral, and astute use of generative AI tools in education, not only to encourage uptake.

Limitations

The findings of this study may not be generalized to all university students, as numerous factors (geographical location, cultural background, academic discipline, technological literacy, etc.) could affect the attitudes toward ChatGPT. Therefore, there should be caution when applying these results to other contexts or other population. In addition, the survey may miss some of the other important factors that influence attitudes toward ChatGPT, including one's prior experience with AI, one's individual learning preferences, or institutional technology use policies in education. To address these gaps, future research could be conducted in the form of longitudinal studies that would assess the long-term impact of ChatGPT integration on students' academic performance, critical thinking, and independence. As students are tracked over a longer period of time, this can help indicate how their attitudes change towards AI, as well as determine the impact that ChatGPT has on students' learning outcomes.

This study may also be influenced by recall errors and social desirability bias as is the case with all self-reported surveys (Podsakoff et al., 2003). To mitigate this, we conducted the survey anonymously and collected responses online, and wrote the questions in neutral language, relaxing the pressure on respondents to respond. The scope of this study was also limited, where students enrolled in universities in Germany were used which may not be a global representative. As such, the findings may not be suitable for other countries or regions where different methods of teaching and degree of technological integration may exist.

Conclusions

It is important to interpret the results of the study from different educational frameworks and cultural perspectives on technology. University students' interactions with ChatGPT and similar applications will vary greatly based on regional differences in curriculum, pedagogical practices, and the access to technology.

Exams being high stake, ChatGPT is used for rote learning, making fast summaries, and exam preparation in the exam-driven educational systems of Nigeria and India. On the other hand, ChatGPT is employed more often for brainstorming, academic writing support, and idea generation in Western universities that typically stress critical thinking and original authorship (Zawacki-Richter et al., 2019). These differences show us that expectations of students in education play a decisive role in how they use AI tools.

Even in other non-Western cultures the use of AI into education is becoming more systematic. For instance, South African universities, like the University of Johannesburg, have begun to integrate into their general education curricula, AI literacy programs to provide students with the tools necessary to interact critically with developing technology. In China, locally created generative AI platforms that

Citation: Research in Learning Technology 2025, **33**: 3384 - http://dx.doi.org/10.25304/rlt.v33.3384

are influenced by ChatGPT are being used in blended learning environments, which shows innovation and regionally specific regulatory issues (Yang et al., 2023).

It is concluded that expected intercultural viewpoints highlight the necessity of more international study on AI adoption as well as context-aware teaching methods. More inclusive and equitable AI integration policies can be formed by having a better understanding of how ChatGPT is seen and used in various educational contexts. Longitudinal studies should be considered in future study to look at pinions on ChatGPT change over time. Furthermore, comparing institutions from the Global North and South through cross-national study can show how cultural, technological, and legal issues affect the use of AI in education.

Data availability

The data is available on request from authors.

Conflict of interest and funding

No conflict of interest. This study received no funding.

References

Abdaljaleel, M. et al. (2024). A multinational study on the factors influencing university students' attitudes and usage of ChatGPT. *Scientific Reports*, *14*(1), 1983. https://doi.org/10.1038/s41598-024-52549-8

Al-Mughairi, H., & Bhaskar, P. (2024). Exploring the factors affecting the adoption AI techniques in higher education: Insights from teachers' perspectives on ChatGPT. *Journal of Research in Innovative Teaching & Learning*. Advance online publication. https://doi.org/10.1108/JRIT-09-2023-0129

Böhning, D. (1992). Multinomial logistic regression algorithm. *Annals of the Institute of Statistical Mathematics*, *44*(1), 197–200. https://doi.org/10.1007/BF00048682

Cooper, G. (2023). Examining science education in ChatGPT: An exploratory study of generative artificial intelligence. *Journal of Science Education and Technology*, *32*(3), 444–452. https://doi.org/10.1007/s10956-023-10039-y

Cotton, D. R., Cotton, P. A., & Shipway, J. R. (2024). Chatting and cheating: Ensuring academic integrity in the era of ChatGPT. *Innovations in Education and Teaching International*, *61*(2), 228–239. https://doi.org/10.1080/14703297.2023.2190148

Dai, W. et al. (2023). Can large language models provide feedback to students? A case study on ChatGPT. In Proceedings of the 2023 IEEE 23rd International Conference on Advanced Learning Technologies (ICALT) (pp. 323–325). IEEE Research Gate. https://doi.org/10.1109/ICALT58122.2023.00100

Dulock, H. L. (1993). Research design: Descriptive research. *Journal of Pediatric Oncology Nursing*, *10*(4), 154–157. https://doi.org/10.1177/104345429301000406

Dwivedi, Y. K. et al. (2023). Opinion Paper: 'So what if ChatGPT wrote it?' Multidisciplinary perspectives on opportunities, challenges and implications of generative conversational AI for research, practice and policy. *International Journal of Information Management*, *71*, 102642. https://doi.org/10.1016/j.ijinfomgt.2023.102642

Elder, C. et al. (2023). Can Artificial Intelligence pass a sophomore-level digital design laboratory? In Proceedings of the 2023 ASEE Annual Conference & Exposition (pp. 861–868). American Society for Engineering Education (ASEE).

Grant, N., & Metz, C. (2022). A new chat bot is a 'Code Red' for Google's search business. *International New York Times*. NA-NA.

Hill, R. (2023). AI as fad or AI as lasting? Priorities for college faculty instructional development for generative artificial intelligence. *Irish Journal of Technology Enhanced Learning*, *7*(2), 136–145. https://doi.org/10.22554/ijtel.v7i2.154

Kasneci, E. et al. (2023). ChatGPT for good? On opportunities and challenges of large language models for education. *Learning and Individual Differences*, *103*, 102274. https://doi.org/10.1016/j.lindif.2023.102274

Kwak, C., & Clayton-Matthews, A. (2002). Multinomial logistic regression. *Nursing Research*, *51*(6), 404. https://doi.org/10.1097/00006199-200211000-00009

Memarian, B., & Doleck, T. (2023). ChatGPT in education: Methods, potentials, and limitations. *Computers in Human Behavior: Artificial Humans*, *1*(2), 100022. https://doi.org/10.1016/j.chbah.2023.100022

Memarian, B., & Doleck, T. (2024). Teaching and learning artificial intelligence: Insights from the literature. *Education and Information Technologies*, *29*(16), 21523–21546. https://doi.org/10.1007/s10639-024-12679-y

Mogavi, R. et al. (2024). ChatGPT in education: A blessing or a curse? A qualitative study exploring early adopters' utilization and perceptions. *Computers in Human Behavior: Artificial Humans, 2*(1), 100027. https://doi.org/10.1016/j.chbah.2023.100027

Ngo, T. T. A. (2023). The perception by university students of the use of ChatGPT in education. *International Journal of Emerging Technologies in Learning (Online)*, *18*(17), 4. https://doi.org/10.3991/ijet.v18i17.39019

OpenAI et al. (2023). *GPT-4 Technical Report.* arXiv. arXiv Preprint arXiv:2303.08774.

Ortiz, S. (2023). *What is ChatGPT and Why Does it Matter? Here's What You Need to Know.* ZDNET. Archived from the Original on January, 18, 2023.

Podsakoff, P. M. et al. (2003). Common method biases in behavioral research: A critical review of the literature and recommended remedies. *Journal of Applied Psychology*, *88*(5), 879. https://doi.org/10.1037/0021-9010.88.5.879

Rudolph, J., Tan, S., & Tan, S. (2023). ChatGPT: Bullshit spewer or the end of traditional assessments in higher education? *Journal of Applied Learning and Teaching*, *6*(1), 342–363. https://doi.org/10.37074/jalt.2023.6.1.9

Yang, Z. et al. (2023). The dawn of lmms: Preliminary explorations with gpt-4v (ision). *arXiv Preprint arXiv:2309.17421*, *9*(1), 1.

Zawacki-Richter, O. et al. (2019). Systematic review of research on artificial intelligence applications in higher education–where are the educators? *International Journal of Educational Technology in Higher Education*, *16*(1), 1–27. https://doi.org/10.1186/s41239-019-0171-0

Zhai, X. (2022). *ChatGPT user experience: Implications for education*. *SSRN Electronic Journal*. https://doi.org/10.2139/ssrn.4312418

Zhang, B. (2023). *Preparing Educators and Students for ChatGPT and AI Technology in Higher Education.* University of Hartford.