Gisma University of Applied Science Research Methods and Scientific Work

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Generative AI and the Future of Traditional Learning Pedagogies in Universities



Gisma University of Applied Sciences

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1. Abstract

This is a positivist quantitative study that investigates the effect of the frequency of use of generative AI, like ChatGPT, on the learning experience, achievement, and ethics of students. It relates usage to satisfaction, task dependency, perceived performance, and ethical concerns. Findings are that AI is mostly complementary to traditional university learning, with students using it cautiously as a supportive learning tool whose contribution can grow with familiarity of usage.

Keywords: Generative AI, ChatGPT, higher education, academic integrity, professors, traditional learning, student motivation.

2. Introduction

2.1 Research introduction

Higher education is transforming rapidly, with generative AI (GenAI) technology like ChatGPT, Claude AI, and Copilot revolutionizing student learning and academic support. A 2025 HEPI survey reveals that GenAI application by students for assessments rose from 53% in 2024 to 88% (Freeman, 2025; Gruenhagen et al., 2024). A lot of students now use GenAI to solve assignments rather than professors, for instant, personalized help for complex questions. This paper asks a critical question: Will GenAI replace the traditional method of university learning or even the professors themselves or will it just complement human teaching?

2.2 The Research Problem

Universities are facing critical decisions as Generative AI is emerging in higher education. There are questions about whether universities should formally adopt these technological innovations or not, and if they do, does this mean they are abandoning traditional models of teaching? Administrators will have to put some policies and budgets in place; lecturers must adjust their courses and students already use this technology daily. Few clear guidelines and policies exist in this respect, and the research base is limited. Some universities are cautiously integrating AI tools in learning and assessments, while others hold back to protect academic integrity. The main aim of this research paper is to find out whether generative AI will replace traditional learning pedagogy or act as a supporting tool for students.

2.3 The research question & objective

Question: "Will generative AI replace professors and traditional learning pedagogy in universities?"

The main research questions to be explored:

- 1. Are students more satisfied with generative AI over traditional methods?
- 2. Can generative AI assist students in education
- 3. Does generative AI help students succeed in their studies?
- 4. Are students concerned about the unethical use of generative AI?

This research is important to find out how generative AI has impacted traditional learning in universities and will it play a more important role in the future.

2.4 Hypothesis of research & conceptual framework.

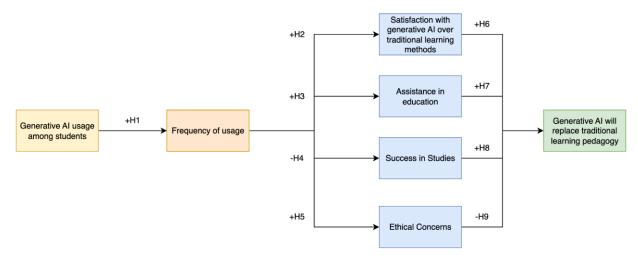


Figure 1: Conceptual framework for this research

- H1 is positive since increased exposure will encourage increased interaction which increases usage frequency.
- H2 is positive because more frequent usage results in greater satisfaction with GenAI over traditional learning methods.
- H3 is positive because repeated usage will encourage a student to use GenAl's assistance in education.
- H4 is negative because over-reliance on GenAI may reduce learning autonomy and critical thinking, lowering academic success.
- H5 is positive because frequent usage raises awareness of ethical issues such as plagiarism,
 bias, or misuse.
- H6 is positive because higher satisfaction with GenAI strengthens belief that it could replace traditional teaching.

- H7 is positive because better assistance from GenAl reinforces belief it may replace traditional learning.
- H8 is positive because higher academic success builds confidence that GenAI could replace traditional teaching.
- H9 is negative because greater ethical concerns limit belief that GenAI should replace traditional learning.

3. Literature Review

3.1 Literature review statement

Generative AI is transforming learning at university level by maximizing learning efficiency, helping in more effective management of tasks, and allowing higher-order thinking to take center stage. Batista et al. (2024) mention the way it can facilitate diverse academic activities like research, writing, problem-solving, and brainstorming to assist students in managing complex tasks more strategically and effectively.

3.2 Widespread use & educational potential

Existing research has found that the work of students is increasingly being integrated with generative AI. Freeman (2025) found that 88% of students use AI for their work but only 36% ever receive training officially, which questions learning dependency and academic honesty. Süße & Kobert (2023) observed the functionality and overuse of AI by finding that students used it to do assignments hastily or in desperation. Johnston et al. (2024) also stated that students view GenAI as a helpful resource for guidance and knowledge but there surely is a need for institutional policies and guidance.

3.3 The irreplaceable role of human educators

Current research shows no proof that professors will be replaced by GenAI (Nguyen, 2025). In higher education, generative AI improves writing, study planning, and feedback, assisting teachers in achieving learning objectives (Batista et al., 2024). Instead of cutting faculty, institutions are retraining employees to successfully integrate AI, improving learning outcomes and teaching support. Freeman (2025) describes a model where teachers lead and AI assists instead of replacing the human educator.

4. Methodology

4.1 Research approach & conceptual frame

We did a quantitative study asking whether frequency of GenAI use changes students' learning experiences, outcomes and ethics. A quantitative, positivist design lets us test patterns in the data. Our research links usage frequency to four areas: satisfaction with learning support, reliance on AI for tasks, perceived success, and ethical concerns.

4.2 Data collection & analysis

Analysis was done on the public dataset "Higher Education Students' Early Perceptions of ChatGPT" (Mendeley, 2023) with ~23,000 responses worldwide. To keep comparisons fair across key groups (usage bands, disciplines), we applied stratified sampling to form the analytical sample. After cleaning (imputing missing values and collapsing Likert options to 3 levels), we proceeded in three steps:

- 1. Descriptive statistics (counts/percentages) to map usage patterns.
- 2. Ordinal logistic regression to test whether heavier GenAI use predicts higher satisfaction, greater task reliance, and different perceived successes/ethics outcomes.
- 3. Visualization: Results were visualized with bar charts, boxplots and violin plots.

4.3 Validity & Reliability

- 1. The large, multi-discipline sample improves external validity, and the standardised questionnaire supports reliability.
- 2. Multi-method testing (ordinal models, non-parametric tests, correlations) strengthens robustness.

5. Results and Conclusion

Research Question 1: Are students who use generative AI more satisfied with Generative AI than traditional forms of learning?

	use_extent	sat_vs_professor_interaction	count	percentage
C	onsiderably	Agree	920	47.0
C	onsiderably	Disagree	418	21.0
C	onsiderably	Neutral	638	32.0
	Medium	Agree	1005	33.0
	Medium	Disagree	913	30.0
	Medium	Neutral	1158	38.0
	Rarely	Agree	1285	13.0
	Rarely	Disagree	2347	23.0
	Rarely	Neutral	6560	64.0

Tα	h	lρ	1

use_extent	sat_info_professors	count	percentage
Considerably	Agree	735	37.0
Considerably	Disagree	426	22.0
Considerably	Neutral	815	41.0
Medium	Agree	722	23.0
Medium	Disagree	911	30.0
Medium	Neutral	1443	47.0
Rarely	Agree	900	9.0
Rarely	Disagree	2235	22.0
Rarely	Neutral	7057	69.0

use_extent	sat_vs_google	count	percentage
Considerably	Agree	1154	58.0
Considerably	Disagree	207	10.0
Considerably	Neutral	615	31.0
Medium	Agree	1390	45.0
Medium	Disagree	462	15.0
Medium	Neutral	1224	40.0
Rarely	Agree	1748	17.0
Rarely	Disagree	1524	15.0
Rarely	Neutral	6920	68.0
Та	ble 2		

use_extent	sat_info_accuracy	count	percentage
Considerably	Agree	930	47.0
Considerably	Disagree	303	15.0
Considerably	Neutral	743	38.0
Medium	Agree	1073	35.0
Medium	Disagree	539	18.0
Medium	Neutral	1464	48.0
Rarely	Agree	1512	15.0
Rarely	Disagree	1321	13.0
Rarely	Neutral	7359	72.0

Table 3 Table 4

sat_vs_google p_value: 4.38478524267935e-271 Odds Ratio 2.3185932148667057
sat_vs_professor_interaction p_value: 5.570260676604138e-114 Odds Ratio 1.6919828704596585
sat_info_professors p_value: 3.664726946233096e-70 Odds Ratio 1.5281447381857025
sat_info_accuracy p_value: 9.041747677029318e-127 Odds Ratio 1.7697099300084949

Table 5

Note:

- a. use_extent: Frequency of usage of generative AI
- b. sat_vs_professor_interaction: Students who find it easier to communicate with generative AI than professors.
- c. sat_vs_google: Students who prefer generative AI over Google and other search engines
- d. sat_info_professors: Students who prefer the information from generative AI over professors.
- $e. \hspace{0.5cm} \text{sat_info_accuracy: Students who trust the accuracy of information from generative AI.} \\$
- f. OR: Odds Ratio

The results show that the student's satisfaction with generative AI and traditional learning resources heavily depends on the frequency of usage. Among considerable users, 58% agreed that they were satisfied with generative AI over Google and other search engines, 47% agreed that generative AI provided accurate information, 47% agreed that it was easier for them to interact with generative AI than professors, and 37% agreed that the information they receive from generative AI is clearer than their professors. As seen in Figure 2, there were a significant percentage of students who were considerable users who had a neutral opinion on this topic ranging from 31% to 41% (Tables 1-4), especially on the issue that whether they trusted the information from generative AI over professors.

Moderate generative AI users showed moderate levels of agreement across the same measures, with students who agreed ranged from 23%-45% and neutral responses ranging from 38%-48% (Tables 1-4). For rare users, the neutral responses dominated (64%-72%), but with a relatively low agreement (9%-17%) (Tables 1-4), which implies that they had not used generative AI enough to have an informed opinion on this topic.

Ordinal regression analysis confirms that generative AI usage frequency significantly predicted satisfaction levels across all the measures. Frequent generative AI users reported greater satisfaction compared to those who use it less frequently. This can be observed for all instances like generative AI over search engines (OR = 2.32, p < 0.05), accuracy of AI generated information (OR = 1.77, p < 0.05), generative AI vs professor interaction (OR = 1.69, p < 0.05), and generative AI vs quality of information from professors (OR = 1.53, p < 0.05) (Table 5). All variables were statistically significant, so the null hypothesis can be rejected that frequency of usage has no effect on the having more satisfaction with using generative AI over traditional learning methods. The strongest preference was for preferring generative AI over other search engines, highlighting its superiority as an information source. Though, the high proportion of neutral responses across all the groups highlights cautious adoption and the continued relevance of traditional learning resources.

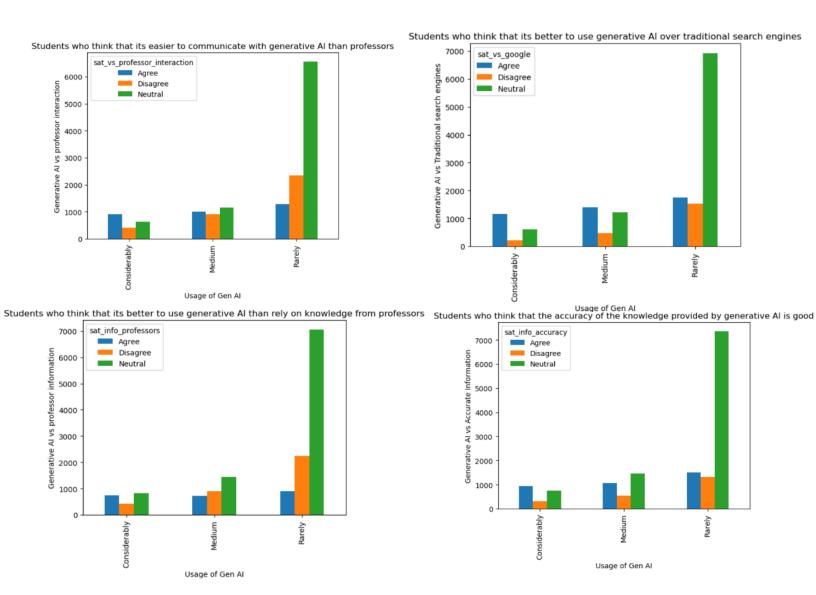


Figure 2: Does frequency of generative AI usage have any effect on the preference of generative AI over traditional forms of learning amongst students

Research Question 2: Can generative AI aid a student in their education?

Table 6				Table 7	· ·			Table 8			
use_extent	use_academic_writing	count	percentage	use_extent	use_summarizing	count	percentage	use_extent	use_brainstorming	count	percentage
Considerably	Never	114	6.0	Considerably	Never	193	10.0	Considerably	Never	177	9.0
Considerably	Often	1174	59.0	Considerably	Often	1077	55.0	Considerably	Often	1074	54.0
Considerably	Rarely	688	35.0	Considerably	Rarely	706	36.0	Considerably	Rarely	725	37.0
Medium	Never	271	9.0	Medium	Never	461	15.0	Medium	Never	381	12.0
Medium	Often	756	25.0	Medium	Often	1067	35.0	Medium	Often	1127	37.0
Medium	Rarely	2049	67.0	Medium	Rarely	1548	50.0	Medium	Rarely	1568	51.0
Rarely	Never	1606	16.0	Rarely	Never	2026	20.0	Rarely	Never	1676	16.0
Rarely	Often	402	4.0	Rarely	Often	808	8.0	Rarely	Often	905	9.0
Rarely	Rarely	8184	80.0	Rarely	Rarely	7358	72.0	Rarely	Rarely	7611	75.0

Table 9	Table 10	Table 11
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count	use_research_assist	use_extent	percentage	count	use_study_assist	use_extent
217	Never	Considerably	18.0	357	Never	Considerably
988	Often	Considerably	45.0	884	Often	Considerably
771	Rarely	Considerably	37.0	735	Rarely	Considerably
456	Never	Medium	27.0	845	Never	Medium
935	Often	Medium	25.0	770	Often	Medium
1685	Rarely	Medium	47.0	1461	Rarely	Medium
1925	Never	Rarely	28.0	2831	Never	Rarely
756	Often	Rarely	6.0	569	Often	Rarely
7511	Rarely	Rarely	67.0	6792	Rarely	Rarely

use_extent	use_coding_assist	count	percentage
Considerably	Never	627	32.0
Considerably	Often	857	43.0
Considerably	Rarely	492	25.0
Medium	Never	1290	42.0
Medium	Often	699	23.0
Medium	Rarely	1087	35.0
Rarely	Never	8101	79.0
Rarely	Often	503	5.0
Rarely	Rarely	1588	16.0

Tab	le	12

use_extent	use_calculations	count	percentage
Considerably	Never	592	30.0
Considerably	Often	544	28.0
Considerably	Rarely	840	43.0
Medium	Never	1240	40.0
Medium	Often	470	15.0
Medium	Rarely	1366	44.0
Rarely	Never	3367	33.0
Rarely	Often	385	4.0
Rarely	Rarely	6440	63.0

Table 13

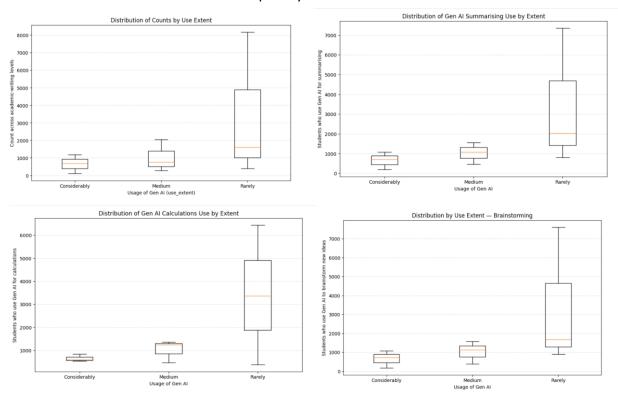
use_academic_writing p_value: 0.0 Odds Ratio 4.5418114000209275
use_summarizing p_value: 0.0 Odds Ratio 2.978572858124099
use_calculations p_value: 2.727542752446564e-41 Odds Ratio 1.3770538130582928
use_brainstorming p_value: 0.0 Odds Ratio 2.940220508151355
use_study_assist p_value: 3.1119466247891504e-227 Odds Ratio 2.2057142438474404
use_research_assist p_value: 0.0 Odds Ratio 2.7205507750189444
use_coding_assist p_value: 0.0 Odds Ratio 3.5667062524121733

Note:

- a. use_extent: Frequency of usage of generative AI
- b. use_academic_writing: Students who use generative AI for academic writing.
- c. use_summarizing: Students who use generative AI for academic writing.
- d. use_calculations: Students who use generative AI for calculations.
- e. use_brainstorming: Students who use generative AI for brainstorming.
- f. use_study_assist: Students who use generative AI for study assistance.
- g. use_research_assist: Students who use generative AI for research assistance.
- h. use_coding_assist: Students who use generative AI for coding assistance.
- i. OR: Odds Ratio

Students reported using generative AI to aid various aspects of their education, with trends differing by usage. Among considerable users, 59% used it often for academic writing, 55% used it for summarizing, 54% for brainstorming, 45% for study assistance, 50% for research assistance, 43% for coding assistance and 28% for calculations (Tables 6-12). Users with medium use of generative AI reported lower frequencies, with 25% used generative AI often for academic writing, 35% for summarizing, 25% for studying, 37% for brainstorming, 30% for research, 23% for coding and 15% for calculations (Tables 6-12). Students who used generative AI rarely used it rarely as seen in figure 3, only 4% - 9% used generative AI often, 16% - 20% never used it and 63% - 80% (Tables 6-12) used it rarely for these tasks. These data suggest that frequent users use AI more regularly across diverse academic tasks.

Ordinal regression confirmed the frequency of generative AI was a significant predictor for how often a student uses AI for tasks. Frequent users were more likely to use AI for academic writing (OR = 4.54, p<0.05), summarizing (OR = 2.98, p<0.05), brainstorming (OR = 2.94, p<0.05), study assistance (OR = 2.21, p<0.05), research assistance (OR = 2.21, p<0.05), and coding assistance (OR = 3.57, p<0.05) (Table 13). All variables were strongly statistically significant with respect to the usage of generative AI, thus allowing the rejection of the null hypothesis. This shows that students who use generative AI more often are more likely to use generative AI for educational tasks than students who use it less frequently.



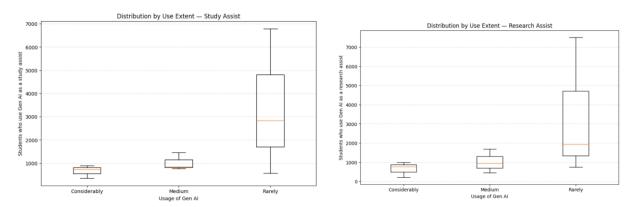


Figure 3: Does frequency of generative AI usage have any effect on its usage for academic tasks.

Research Question 3: Does generative AI help a student succeed in their studies?

Table 14			
use_extent	study_success	count	percentage
Considerably	Agree	1549	78.0
Considerably	Disagree	101	5.0
Considerably	Neutral	326	16.0
Medium	Agree	2187	71.0
Medium	Disagree	154	5.0
Medium	Neutral	735	24.0
Rarely	Agree	7158	70.0
Rarely	Disagree	565	6.0
Rarely	Neutral	2469	24.0

Table 1	6
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use_extent	study_grades_reflect	count	percentage
Considerably	Agree	1396	71.0
Considerably	Disagree	226	11.0
Considerably	Neutral	354	18.0
Medium	Agree	2073	67.0
Medium	Disagree	299	10.0
Medium	Neutral	704	23.0
Rarely	Agree	6837	67.0
Rarely	Disagree	1083	11.0
Rarely	Neutral	2272	22.0

Table 15

use_extent	study_deadlines_met	count	percentage
Considerably	Agree	1685	85.0
Considerably	Disagree	73	4.0
Considerably	Neutral	218	11.0
Medium	Agree	2502	81.0
Medium	Disagree	127	4.0
Medium	Neutral	447	15.0
Rarely	Agree	8351	82.0
Rarely	Disagree	496	5.0
Rarely	Neutral	1345	13.0

Table 17

use_extent	study_specific_knowledge_employ	count	percentage
Considerably	Agree	1331	67.0
Considerably	Disagree	196	10.0
Considerably	Neutral	449	23.0
Medium	Agree	1885	61.0
Medium	Disagree	305	10.0
Medium	Neutral	886	29.0
Rarely	Agree	6098	60.0
Rarely	Disagree	1256	12.0
Rarely	Neutral	2838	28.0

Table 18

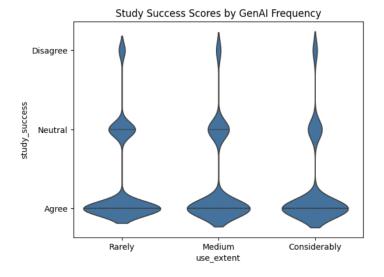
study_success p_value: 1.9182130168185267e-10 Odds Ratio 1.1801499941313889 study_deadlines_met p_value: 0.0045137309109827975 Odds Ratio 1.0902045807957919 study_grades_reflect p_value: 0.018014342948931547 Odds Ratio 1.0591167799750234 study_specific_knowledge_employ p_value: 1.0876128291318604e-09 Odds Ratio 1.1525810561922454

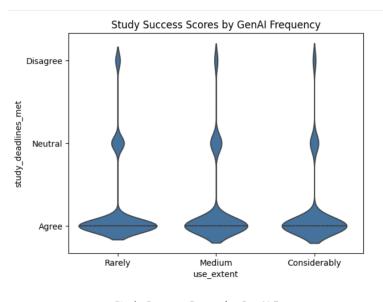
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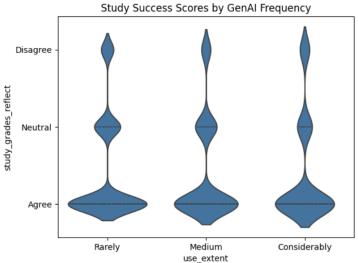
- a. use_extent: Frequency of usage of generative AI
- b. study_succes: Students who use generative AI think they are successful in their studies.
- c. study_deadlines_met: Students who use generative AI who consistently meet assignment deadlines.
- d. study_grades_reflect: Students who use generative AI whose grades reflect their understanding of the subject.
- e. study_specific_knowledge_employ: Students who use generative AI who think they have specific knowledge which will help them in employment.
- f. OR: Odds Ratio

Students who used generative AI considerably reported that 67% - 85% (Tables 14-17) of them were successful in their studies, met consistent assignment deadlines, had grades which accurately depicted their understanding of the subject and had enough knowledge to be employed. Medium users reported similar outcomes (61% - 81%) (Tables 14-17) and rare users (60% - 82%) (Tables 14-17), suggesting that considerable users only achieved marginally more success than others (figure 4).

Ordinal regression analysis confirmed that the frequency of generative AI usage was statistically significant predictor for all 4 measures: study success (p<0.05, OR = 1.18), meeting deadlines for assignments (p<0.05, OR = 1.09), grades reflecting understanding (p<0.05, OR = 1.06) and having specific knowledge for employment (p<0.05, OR = 1.15) (Table 18). While greater usage of generative AI reported greater success, the relatively small odd ratios demonstrate that the effect is modest in practice. The null hypothesis that frequency of usage has no effect on academic success can be rejected, but the findings suggest that the overall academic success of a student is not limited to students who use generative AI a lot.







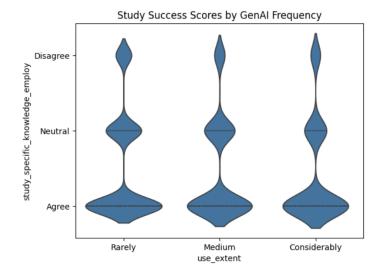


Figure 4: Does frequency of generative AI usage have any effect on academic success

Research Question 4: How are students concerned about the unethical use of generative AI?

Ta	Table 19					Table 20			
	use_extent	ethics_cheating	count	percentage		use_exten	t ethics_plagiarism	count	percentage
0	Considerably	Agree	701	35.0	0	Considerably	y Agree	673	34.0
1	Considerably	Disagree	725	37.0	1	Considerably	y Disagree	742	38.0
2	Considerably	Neutral	550	28.0	2	Considerably	y Neutral	561	28.0
3	Medium	Agree	1228	40.0	3	Mediun	n Agree	1184	38.0
4	Medium	Disagree	900	29.0	4	Mediun	n Disagree	880	29.0
5	Medium	Neutral	948	31.0	5	Mediun	n Neutral	1012	33.0
6	Rarely	Agree	2559	25.0	6	Rarel	y Agree	2479	24.0
7	Rarely	Disagree	1455	14.0	7	Rarel	y Disagree	1425	14.0
8	Rarely	Neutral	6178	61.0	8	Rarel	y Neutral	6288	62.0
_						Table 22			
Table 21 use extent		ethics_replace_edu	count	percentage			ethics_hinder_learning	coun	t percentage
0	Considerably	Agree	552	28.0	0	Considerably	Agree		
1	Considerably	Disagree	831	42.0	1	Considerably	Disagree	68′	34.0
2	Considerably	Neutral	593	30.0	2	Considerably	Neutral	669	34.0
3	Medium	Agree	684	22.0	3	Medium	Agree	1098	36.0
4	Medium	Disagree	1377	45.0	4	Medium	Disagree	853	28.0
5	Medium	Neutral	1015	33.0	5	Medium	Neutral	1125	37.0
6	Rarely	Agree	1325	13.0	6	Rarely	Agree	2380	23.0
7	Rarely	Disagree	2552	25.0	7	Rarely	Disagree	1370	13.0
		Disagree							

ethics_cheating p_value: 2.2972984755682093e-06 Odds Ratio 0.8984949445775602 ethics_plagiarism p_value: 2.622259955590257e-09 Odds Ratio 0.8732135816995754 ethics_replace_edu p_value: 1.0035358917494375e-10 Odds Ratio 0.8632028942267002 ethics_hinder_learning p_value: 7.908987198045215e-10 Odds Ratio 0.8690931083843048

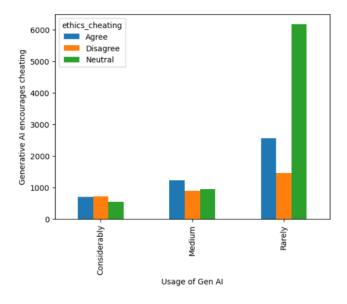
Note:

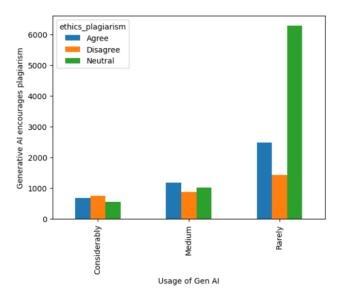
- a. use_extent: Frequency of usage of generative AI
 b. ethics_cheating: Students who use generative AI think Gen AI promotes cheating.
- c. ethics_plagiarism: Students who use generative AI think Gen AI promotes plagiarism.
 d. ehtics_replace_edu: Students who use generative AI think Gen AI will replace traditional education.
 e ethics_plagiarism: Students who use generative AI think Gen AI hinders learning.
- ethics_hinder_learning: Students who use generative AI think Gen AI hinders learning.
- OR: Odds Ratio

Students expressed mixed levels of concern regarding the unethical use of generative AI, and the results vary depending on the ethical issue. Among frequent Generative AI users, 35%

agreed generative AI promotes cheating, 37% disagreed, and 28% remained neutral. For plagiarism, 34% agreed, 38% disagreed and 28% were neutral. Concerns about AI replacing education were lower, with only 28% agreement, 42% disagreement and 30% neutrality. 32% agreed that AI might hinder learning, 34% disagreed and 34% were neutral (Tables 19-22). Medium users showed comparable distributions with agreements ranging from 22% to 40% across the four issues, neutrality between 31%-37%, and disagreements from 28%-45% (Tables 19-22). Among rare users, as we can see in figure 5 neutral results dominated across all issues (61%-63%) while agreement and disagreement ranging from 13% to 25% (Tables 19-22). This shows that more frequent users are more divided on ethical concerns, but infrequent users tend to withhold judgement due to limited experience with AI.

Ordinal regression analysis confirmed frequency of usage was a statistically significant predictor of ethical concerns. Significant effects were observed for cheating (p<0.05, OR = 0.90), plagiarism (p<0.05, OR = 0.87), replacement of traditional education (p<0.05, OR = 0.86) and hindering learning (p<0.05, OR = 0.87) (Table 23). The odds ratio being less than 1 for all of them means that more frequent users of generative AI tend to perceive less concern about ethical concerns caused by generative AI in education. As the p values for all the variables are less than 0.05, the null hypothesis can be rejected. From the data we can also see that most of the students were very divided on this topic, so the students were still undecided about the risks of generative AI in education.





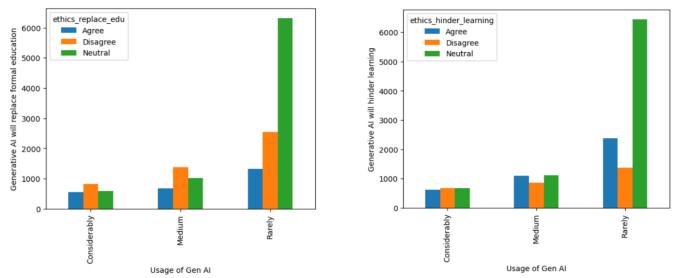


Figure 5: Does frequency of generative AI usage increase ethical concerns

6. Discussion

The findings of the study provide important insights into whether generative AI will replace traditional forms of learning.

Satisfaction with generative AI over traditional learning methods

Consistent with H2 and H6, students who use generative AI more frequently report higher satisfaction compared to traditional learning. The HEPI-Kortext survey found that students use AI to save time, improve work quality and gain personalized support outside traditional study hours (Freeman, 2025) and (Baek et el., 2024) frequent engagement allows students to experience AI's convenience over traditional learning methods. Many students remain neutral, showing cautious adoption and the continued reliance on traditional methods. Rare users remain neutral due to their inexperience. The increased satisfaction amongst frequent users suggests that as AI usage becomes more common, students may be more willing to integrate it with traditional pedagogy.

Assistance in education

The results also support H3 and H7. Frequent users use generative AI for different academic tasks, including writing, summarizing, coding and research. While this shows that higher usage is linked with greater usage of it for academic tasks, a significant percentage of students do not over rely on it. Although usage levels vary widely, Baek et al. (2024) report that students generally perceive ChatGPT as an extra resource and express concerns about over-reliance, indicating its role as an aid rather than a replacement for traditional learning. Overall,

generative AI appears to function as a complementary tool helping students complete academic tasks faster and more efficiently.

Academic Success

In contrast to H4, generative AI does not hinder academic success, rather it does correlate slightly with improved outcomes. Nevertheless, students across all usage levels report comparable academic achievements which suggests that generative AI does not make a very big impact on a student's overall success in their academic career. For H8, the hypothesis is correct but while modest outcomes may encourage AI adoption, effects are insufficient to suggest that generative AI can replace traditional forms of learning.

Ethical concerns

Challenging H5, more usage of generative AI did not raise ethical concerns like cheating, plagiarism or replacement of traditional learning. Due to limited exposure rare users had neutral opinions. The HEPI-Kortext survey indicates that risk perception or fear of cheating accusations and biased results is a key discouraging factor but declines as experience increases (Freeman, 2025). H9 is also contradicted as familiarity with generative AI, reduces the perceived risks of using generative AI in education. Nonetheless, the students were very divided about this topic, which shows most of the students were still unsure about the ethical risks of generative AI in education.

7. Research Limitations

- The dataset only includes 2023 data, rapid AI adoption may make student perceptions different in 2025, affecting relevance.
- The questionnaire did not cover all the necessary aspects, and due to time and teach constraints custom questionnaire deployment wasn't possible.
- The dataset only had data on ChatGPT, inclusion of other generative AI tools could have different results.
- Accuracy may have been reduced due large number of questions which caused respondent fatigue.
- Only student data was analysed, including professors and other stakeholders could provide deeper insights.

8. Conclusion

The research shows that generative AI, ChatGPT, serves as supplementary tool rather than a replacement for traditional university learning. Frequent users of it are more satisfied, use it to complete academic tasks, and have fewer ethical concerns, which show familiarity reduces the perceived risks. Though it helps with academic success, less frequent users achieve similar results. A large percentage of students across all usage levels remains neutral, showing cautious adoption and continued reliance on traditional methods. Future studies involving faculty and professors will shed further light on this topic. Finally, students view generative AI as a study aid and not as a replacement to traditional university learning, though with more usage it might have a greater role.

9. References

- Abbas, M., Jam, F.A. and Khan, T.I. (2024) 'Is it harmful or helpful? Examining the causes and consequences of generative AI usage among university students', International Journal of Educational Technology in Higher Education, 21(1). https://doi.org/10.1186/s41239-024-00444-7
- Barrett, A. and Pack, A. (2023) 'Not quite eye to A.I.: Student and teacher perspectives on the use of generative artificial intelligence in the writing process', International Journal of Educational Technology in Higher Education, 20(1). https://doi.org/10.1186/s41239-023-00427-0
- Batista, J., Mesquita, A. and Carnaz, G. (2024) 'Generative AI and higher education: trends, challenges, and future directions from a systematic literature review', Information, 15(11), 676. https://doi.org/10.3390/info15110676
- Chan, C.K.Y. and Hu, W. (2023) 'Students' voices on generative AI: perceptions, benefits, and challenges in higher education', International Journal of Educational Technology in Higher Education, 20(1). https://doi.org/10.1186/s41239-023-00411-8
- Freeman, J. (2025) Student generative AI survey 2025 (HEPI Policy Note 61). Oxford: Higher Education Policy Institute. https://www.hepi.ac.uk/wp-content/uploads/2025/02/HEPI-Policy-Note-61-2.pdf
- Gruenhagen, J.H., Sinclair, P.M., Carroll, J.-A., Baker, P.R.A., Wilson, A. and Demant, D. (2024) 'The rapid rise of generative AI and its implications for academic integrity: students' perceptions and use of chatbots for assistance with assessments', Computers and Education: Artificial Intelligence, 7, 100273. https://doi.org/10.1016/j.caeai.2024.100273
- Habib, S., Vogel, T., Anli, X. and Thorne, E. (2024) 'How does generative artificial intelligence impact student creativity?', Journal of Creativity, 34, 100072. https://doi.org/10.1016/j.yjoc.2023.100072
- Hmoud, M., Swaity, H., Hamad, N., Karram, O. and Daher, W. (2024) 'Higher education students' task motivation in the generative artificial intelligence context: the case of ChatGPT', Information, 15(1), 33. https://doi.org/10.3390/info15010033
- Johnston, H., Wells, R.F., Shanks, E.M., Boey, T. and Parsons, B.N. (2024) 'Student

- perspectives on the use of generative artificial intelligence technologies in higher education', International Journal for Educational Integrity, 20(2). https://doi.org/10.1007/s40979-024-00149-4
- Kim, J., Klopfer, M., Grohs, J.R., Eldardiry, H., Weichert, J., Cox II, L.A. and Pike, D. (2025)
 'Examining faculty and student perceptions of generative AI in university courses',
 Innovative Higher Education. https://doi.org/10.1007/s10755-024-09774-w
- Nguyen, K.V. (2025) 'The use of generative AI tools in higher education: ethical and pedagogical principles', Journal of Academic Ethics. https://doi.org/10.1007/s10805-025-09607-1
- Qian, Y. (2025) 'Pedagogical applications of generative AI in higher education: a systematic review of the field', TechTrends. https://doi.org/10.1007/s11528-025-01100-1
- Süße, T. and Kobert, M. (2023) 'Generative AI at school: insights from a study about German students' self-reported usage, the role of students' action-guiding characteristics, perceived learning success and the consideration of contextual factors', Bielefeld University of Applied Sciences and Arts. https://doi.org/10.5281/zenodo.10210312
- Wood, D. and Moss, S.H. (2024) 'Evaluating the impact of students' generative AI use in educational contexts', Journal of Research in Innovative Teaching & Learning. https://doi.org/10.1108/JRIT-06-2024-0151
- Omega Team. (2025) Final Research Notebook. Jupyter Notebook. Available at: https://github.com/tuanTaAnh/GenAI-Research-EDA (Accessed: 24 September 2025).
- Omega Team. (2025) [Final] Research Group Slides. Available at: https://docs.google.com/presentation/d/1Ee3Vm88EZcc3JSluP_ZYVW-Cy8B8Tv EY9wYdXqIVeY/edit?usp=sharing (Accessed: 24 September 2025).