

Original Research Article

A study on the impact of AI on education

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Abstract

Artificial Intelligence (AI) is rapidly changing the way education is delivered, experienced, and managed. AI-powered tools such as intelligent tutoring systems, adaptive learning platforms, automated assessment systems, chatbots, and generative AI can provide personalized learning, immediate feedback, and support for teachers. Recent research generally indicates positive effects on student learning, although the results vary considerably according to the subject, educational level, duration of intervention, and way AI is used. This paper attempts to study the impact of AI on education

Introduction

Education has traditionally depended on teachers, textbooks, classroom interaction, and conventional assessment methods. The development of AI has introduced new possibilities for improving these processes. AI can analyze large amounts of educational data, identify students' learning needs, generate educational content, provide personalized assistance, and automate some administrative tasks.

The emergence of generative AI tools has accelerated this transformation. Students can use AI to brainstorm ideas, receive explanations, practice languages, obtain feedback, and explore difficult concepts. Teachers can use AI to prepare lesson materials, design activities, generate questions, and provide differentiated learning resources.

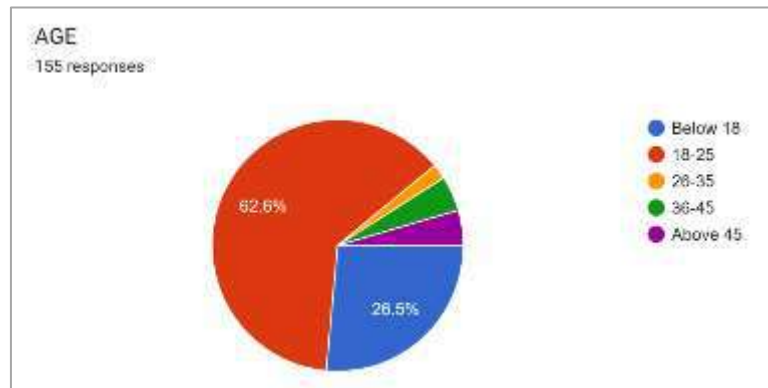
Objectives of the study

- To study the most widely used AI tool
- To find out the purpose of using AI tools in education.
- To analyze the impact of AI on education.

Research Methodology

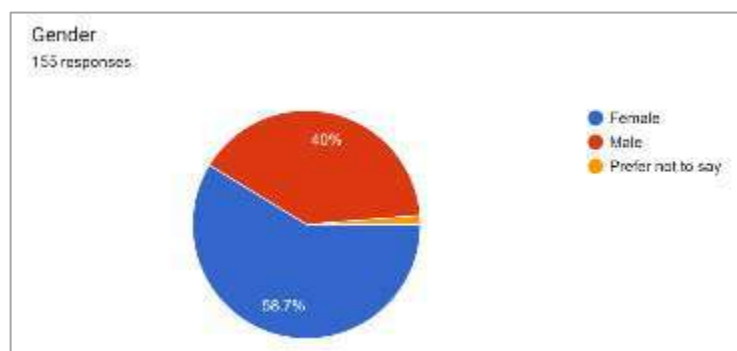
155 students were circulated google forms using random sampling method.

Data Analysis



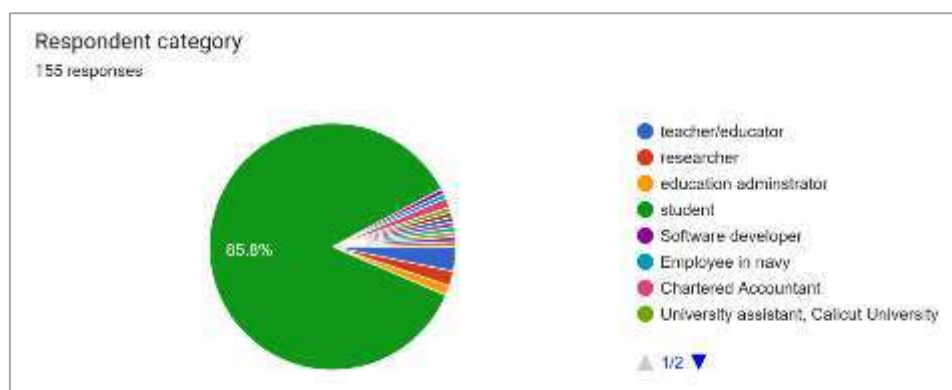
62.6% of the respondents were between age 18 to 25 years.

25.5% of the respondents were below 18 years of age.

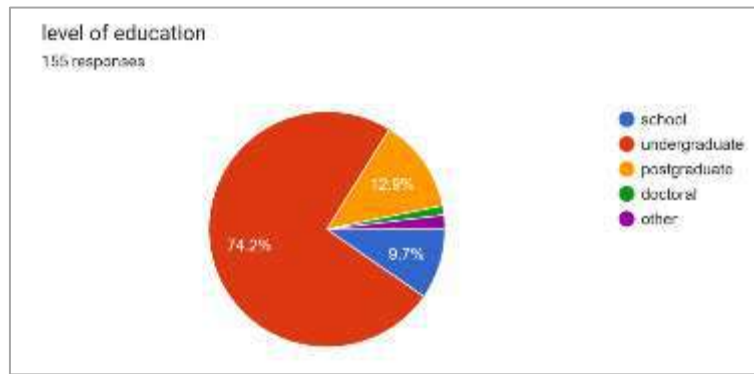


58.7% of the respondents were female.

40% of the respondents were male.

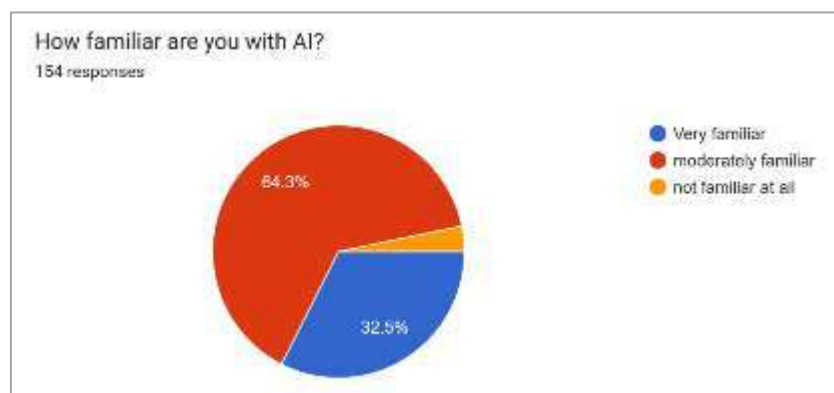


85.8% of the respondents were students.



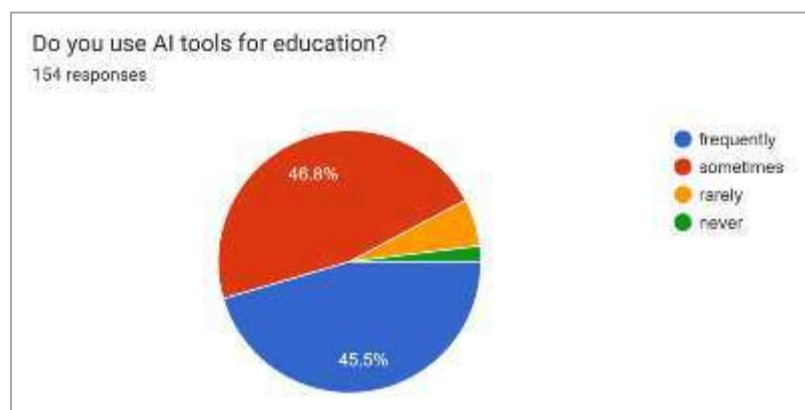
74.2% of the respondents were undergraduate students.

12.9% of the respondents were postgraduate students.



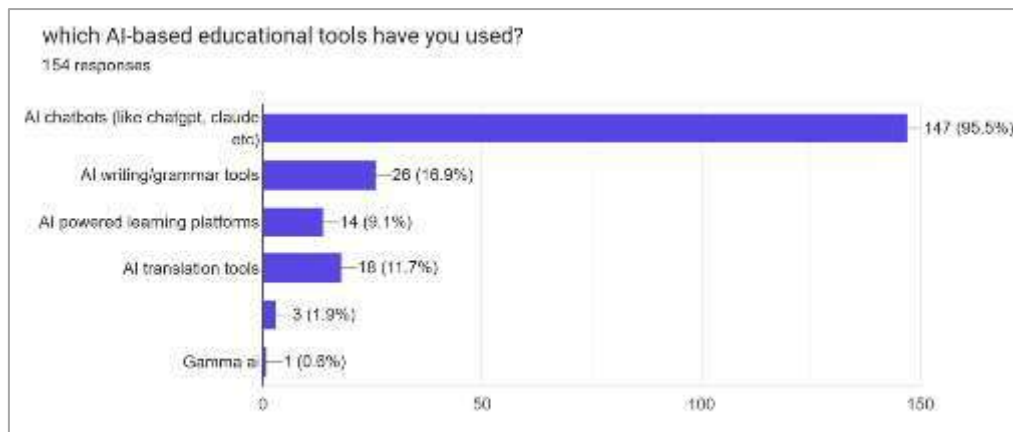
64.3% of the respondents were moderately familiar with AI

32.5% of the respondents were moderately familiar with AI

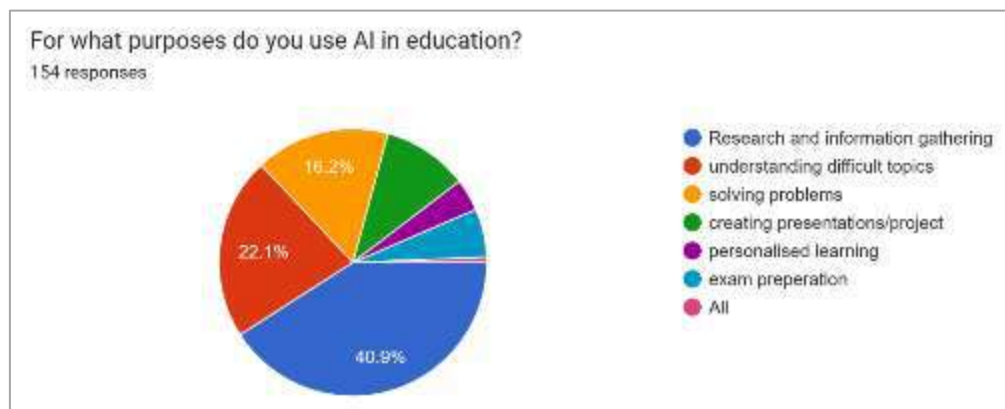


46.8% of the respondents were sometimes using AI for education.

45.5% of the respondents were frequently using AI tools for education.



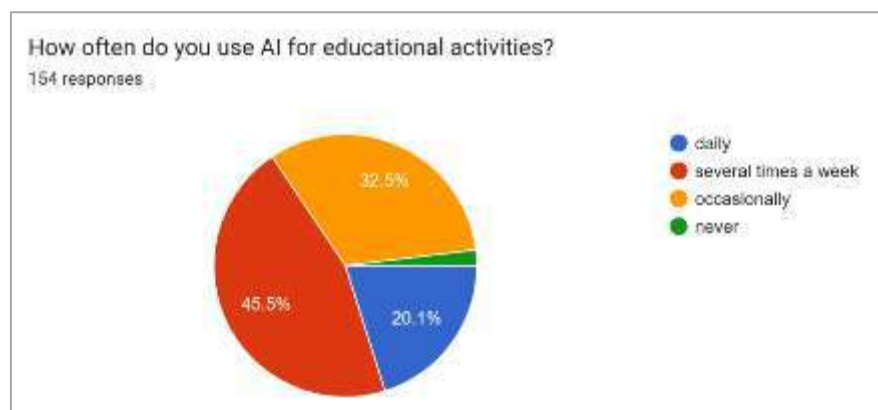
95.5% of respondents use ChatGpt AI based educational tool.



40.9% of respondents used AI for research and information gathering.

22.1% of respondents use AI for understanding difficult topics.

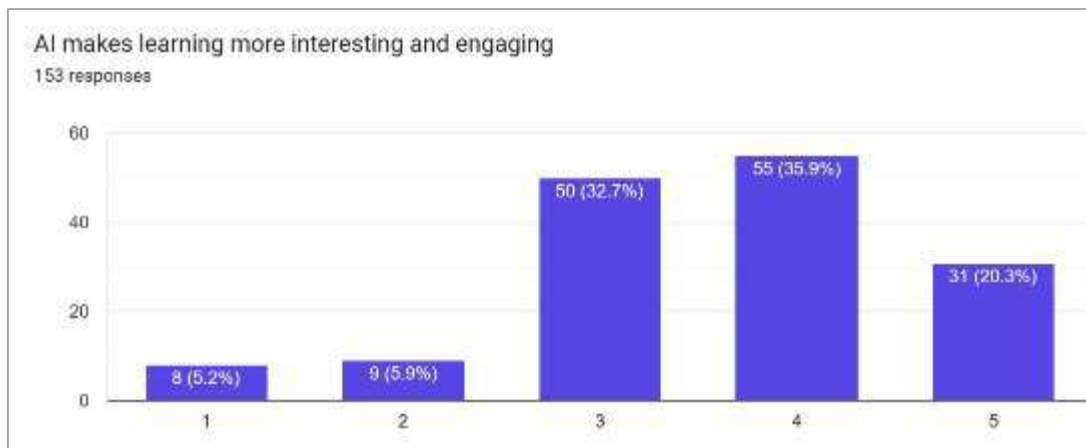
16.2% of the respondents use AI for solving problems.



45.5% of respondents use AI several times a week for educational purposes.

32.% of respondents use AI occasionally for educational purposes.

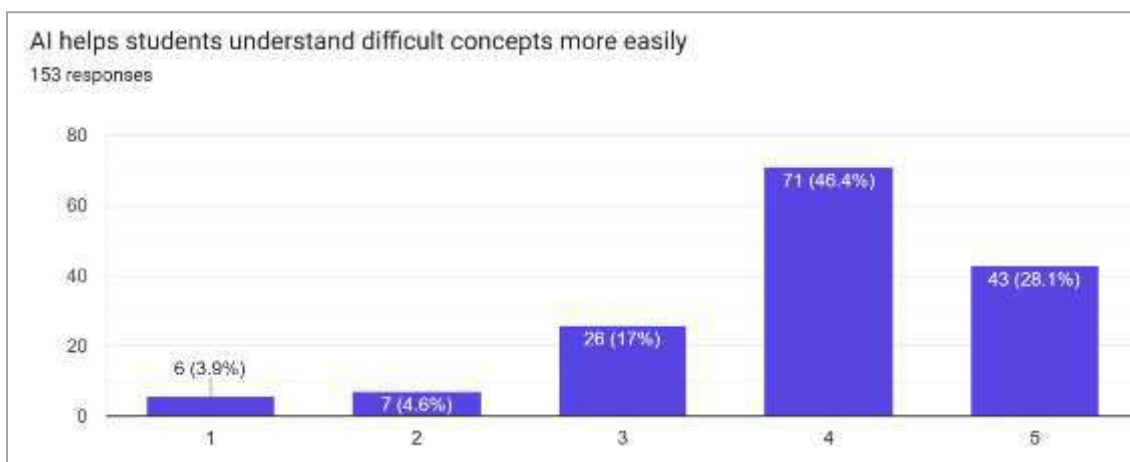
20.1% of respondents use AI daily for educational purposes.



35.9% of the respondents agrees that AI makes learning more interesting

32.7% of the respondents are neutral that AI makes learning more interesting.

20.3% of the respondents strongly agrees that AI makes learning more interesting.



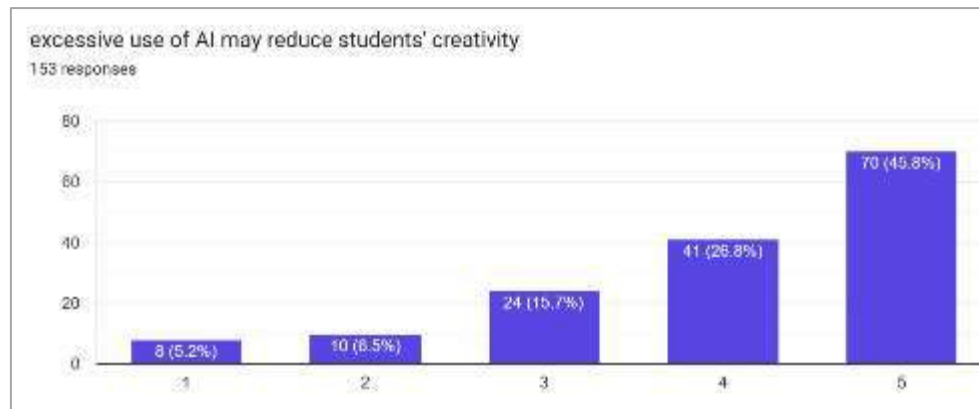
The figure presents the responses of 153 participants to the statement: “AI helps students understand difficult concepts more easily.” A five-point Likert scale was used, where 1 = Strongly Disagree, 2 = Disagree, 3 = Neutral, 4 = Agree, and 5 = Strongly Agree.

- 6 respondents (3.9%) strongly disagreed with the statement.
- 7 respondents (4.6%) disagreed.
- 26 respondents (17.0%) remained neutral.
- 71 respondents (46.4%) agreed.
- 43 respondents (28.1%) strongly agreed.

Overall, 74.5% of respondents (114 out of 153) either agreed or strongly agreed that AI helps students understand difficult concepts more easily. In contrast, only 8.5% (13 respondents) disagreed or strongly disagreed, while 17% were neutral.

The results therefore indicate a strongly positive perception of AI's role in helping students understand difficult concepts. The largest proportion of respondents (46.4%) selected “Agree,” followed by 28.1% who selected “Strongly Agree.” This suggests that most participants believe AI can make complex or difficult educational concepts easier to understand. The relatively small percentage of negative responses further indicates that there is considerable acceptance of AI as a learning-support tool.

In summary, the Likert-scale responses demonstrate that the majority of participants have a positive view of AI's ability to support students in understanding difficult concepts.



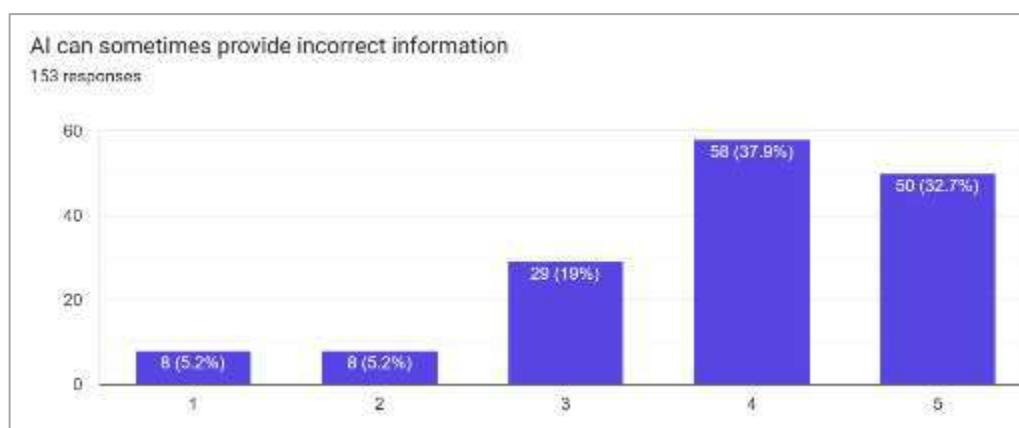
The figure presents the responses of 153 participants to the statement: “Excessive use of AI may reduce students' creativity.” A five-point Likert scale was used, where 1 = Strongly Disagree, 2 = Disagree, 3 = Neutral, 4 = Agree, and 5 = Strongly Agree.

- 8 respondents (5.2%) strongly disagreed with the statement.
- 10 respondents (6.5%) disagreed.
- 24 respondents (15.7%) were neutral.
- 41 respondents (26.8%) agreed.
- 70 respondents (45.8%) strongly agreed.

Overall, 72.6% of respondents (111 out of 153) either agreed or strongly agreed that excessive use of AI may reduce students' creativity. In comparison, only 11.7% (18 respondents) disagreed or strongly disagreed, while 15.7% remained neutral.

The findings indicate that a clear majority of participants are concerned about the negative effect of excessive AI use on students' creativity. The largest group, 45.8%, strongly agreed with the statement, suggesting that many respondents believe overdependence on AI could limit students' ability to think independently, generate original ideas, and develop creative problem-solving skills.

In summary, the Likert-scale results show that most respondents perceive excessive use of AI as a potential threat to students' creativity, highlighting the importance of using AI as a supportive learning tool rather than relying on it completely.



Interpretation of the Figure

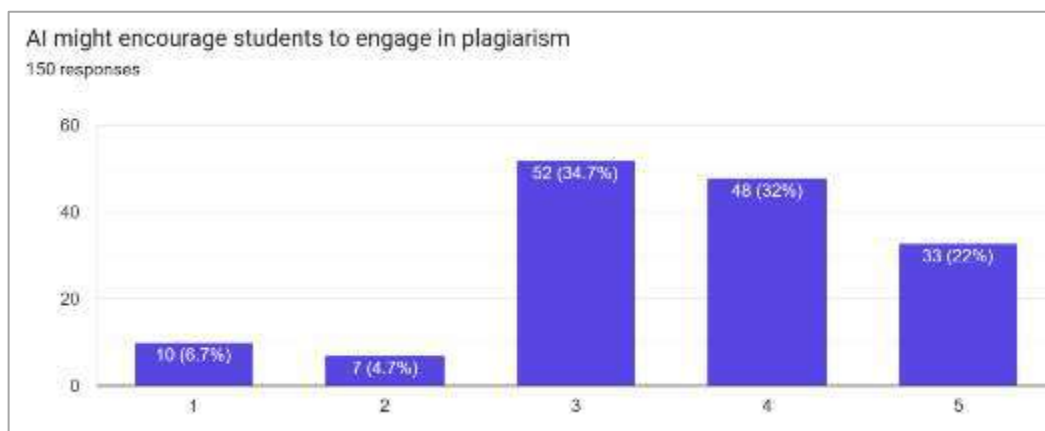
The figure presents the responses of 153 participants to the statement: “AI can sometimes provide incorrect information.” A five-point Likert scale was used, where 1 = Strongly Disagree, 2 = Disagree, 3 = Neutral, 4 = Agree, and 5 = Strongly Agree.

- 8 respondents (5.2%) strongly disagreed.
- 8 respondents (5.2%) disagreed.
- 29 respondents (19.0%) were neutral.
- 58 respondents (37.9%) agreed.
- 50 respondents (32.7%) strongly agreed.

Overall, 70.6% of respondents (108 out of 153) either agreed or strongly agreed that AI can sometimes provide incorrect information. In contrast, only 10.4% (16 respondents) disagreed or strongly disagreed, while 19% remained neutral.

The results indicate that a clear majority of participants are aware of the possibility of inaccurate information being generated by AI. The largest proportion of respondents (37.9%) selected “Agree,” while 32.7% selected “Strongly Agree.” This suggests that participants recognize that AI-generated information should not always be accepted without verification.

In summary, the Likert-scale results show that most respondents believe AI can provide incorrect information, highlighting the importance of critically evaluating and verifying AI-generated content before using it for academic purposes.



Interpretation of the Likert Scale

The diagram presents the responses of 150 students to the statement:

“AI might encourage students to engage in plagiarism.”

Assuming the Likert scale is:

1 – Strongly Disagree | 2 – Disagree | 3 – Neutral | 4 – Agree | 5 – Strongly Agree

Likert Response	Frequency	Percentage
1 – Strongly Disagree	10	6.7%
2 – Disagree	7	4.7%
3 – Neutral	52	34.7%
4 – Agree	48	32.0%
5 – Strongly Agree	33	22.0%
Total	150	100%

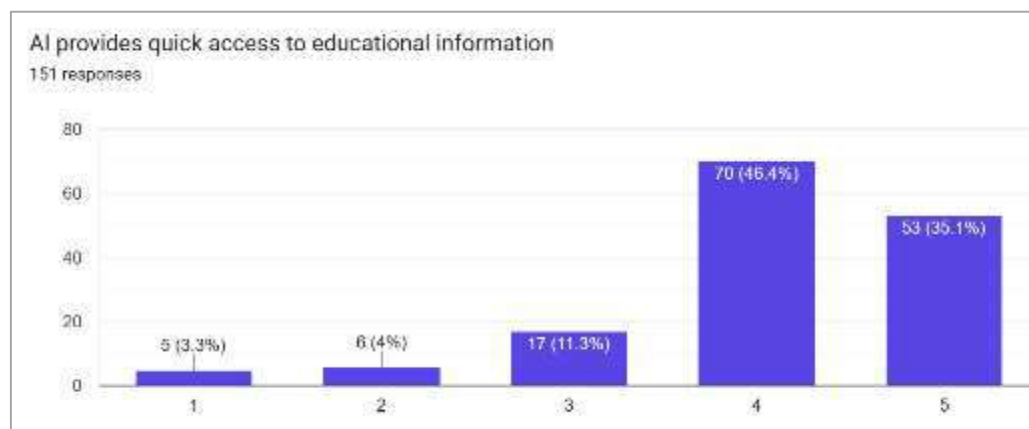
Interpretation

The findings indicate that a majority of students perceive AI as potentially encouraging plagiarism. Specifically, 54% of respondents either agree (32%) or strongly agree (22%) with the statement. This suggests considerable concern among students regarding the possibility that AI tools may facilitate or encourage plagiarism.

Meanwhile, 34.7% of students selected the neutral option, indicating that a substantial proportion are uncertain or have mixed views about the relationship between AI and plagiarism.

Only 11.4% of respondents disagree or strongly disagree, suggesting that relatively few students believe AI does not contribute to plagiarism.

The mean Likert score is approximately 3.58 out of 5, which is above the neutral midpoint (3). The median response is 4 (Agree), while the most frequently selected individual response was 3 (Neutral).



Interpretation of the Likert Scale

The diagram shows the responses of 151 students to the statement:

“AI provides quick access to educational information.”

Assuming the Likert scale is:

1 – Strongly Disagree | 2 – Disagree | 3 – Neutral | 4 – Agree | 5 – Strongly Agree

Likert Response	Frequency	Percentage
1 – Strongly Disagree	5	3.3%
2 – Disagree	6	4.0%
3 – Neutral	17	11.3%
4 – Agree	70	46.4%
5 – Strongly Agree	53	35.1%
Total	151	100%

Interpretation

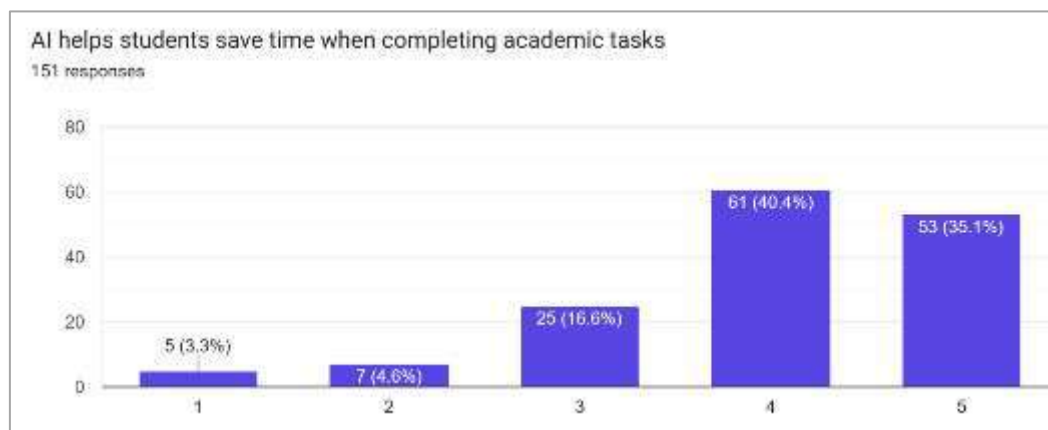
The results show a very positive perception of AI as a source of quick access to educational information. A substantial 81.5% of students either agree (46.4%) or strongly agree (35.1%) with the statement.

Only 7.3% of respondents disagree or strongly disagree, indicating that very few students feel that AI does not provide quick access to educational information. Meanwhile, 11.3% of students remained neutral.

The mean Likert score is approximately 4.06 out of 5, which is considerably above the neutral midpoint of 3. The median and mode are both 4 (Agree), indicating that the overall response is strongly inclined toward agreement.

Overall Conclusion

The findings indicate that students overwhelmingly perceive AI as an effective and convenient tool for obtaining educational information quickly. With 81.5% of respondents agreeing or strongly agreeing and a mean score of 4.06, the results demonstrate a high level of acceptance of AI for facilitating quick access to educational resources.



The diagram presents the responses of 151 students to the statement:

“AI helps students save time when completing academic tasks.”

Assuming the Likert scale is:

1 – Strongly Disagree | 2 – Disagree | 3 – Neutral | 4 – Agree | 5 – Strongly Agree

Likert Response	Frequency	Percentage
1 – Strongly Disagree	5	3.3%
2 – Disagree	7	4.6%
3 – Neutral	25	16.6%
4 – Agree	61	40.4%
5 – Strongly Agree	53	35.1%
Total	151	100%

Interpretation

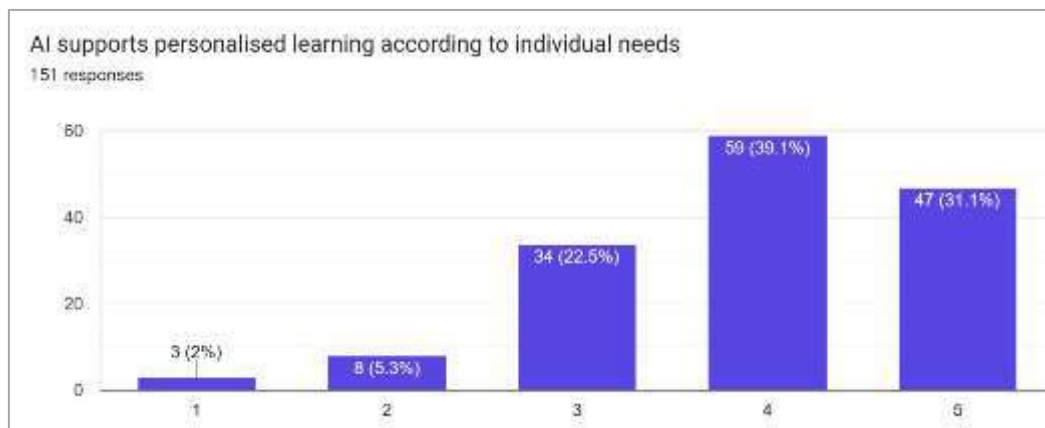
The results indicate that a large majority of students believe that AI helps them save time while completing academic tasks. Specifically, 75.5% of respondents either agree (40.4%) or strongly agree (35.1%) with the statement.

Only 7.9% of students disagree or strongly disagree, suggesting that very few respondents perceive AI as ineffective in saving time. A further 16.6% of students selected the neutral option, indicating some uncertainty or a mixed experience.

The mean Likert score is approximately 3.99 out of 5, which is substantially above the neutral midpoint of 3. The median response is 4 (Agree), while 4 (Agree) is also the most frequently selected response.

Overall Conclusion

The findings suggest that students generally perceive AI as a useful tool for saving time when completing academic tasks. With 75.5% of respondents agreeing or strongly agreeing and a mean score of 3.99, the results demonstrate a strong positive perception of AI's efficiency and time-saving benefits in academic work.



The diagram presents the responses of 151 students to the statement:

“AI supports personalised learning according to individual needs.”

Assuming the Likert scale is:

1 – Strongly Disagree | 2 – Disagree | 3 – Neutral | 4 – Agree | 5 – Strongly Agree

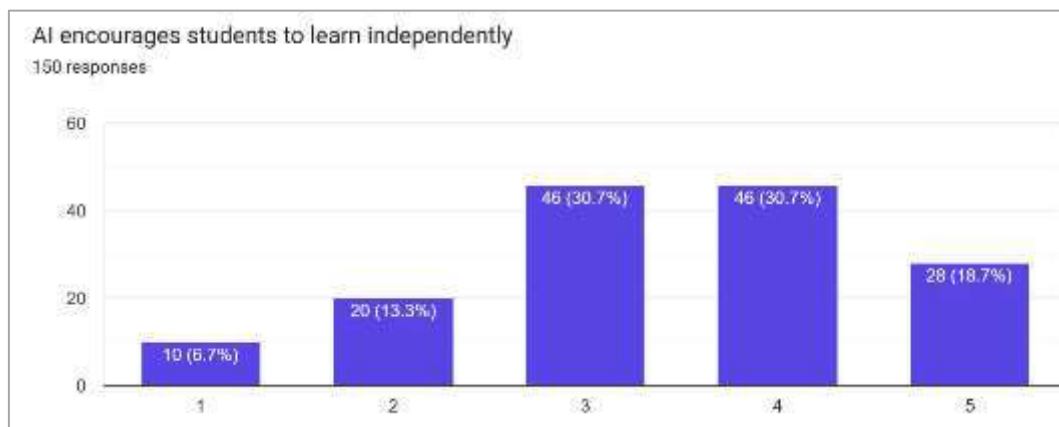
Likert Response	Frequency	Percentage
1 – Strongly Disagree	3	2.0%
2 – Disagree	8	5.3%
3 – Neutral	34	22.5%
4 – Agree	59	39.1%
5 – Strongly Agree	47	31.1%
Total	151	100%

Interpretation

The results indicate that most students have a positive perception of AI's ability to support personalised learning. A total of 70.2% of respondents either agree (39.1%) or strongly agree (31.1%) that AI can support learning according to individual needs.

In contrast, only 7.3% of students disagree or strongly disagree, suggesting that very few respondents have a negative perception of AI's role in personalised learning.

Approximately 22.5% of respondents selected the neutral option, indicating th



Interpretation of the Likert Scale

The diagram presents the responses of 150 students to the statement:

“AI encourages students to learn independently.”

Assuming the Likert scale is:

1 – Strongly Disagree | 2 – Disagree | 3 – Neutral | 4 – Agree | 5 – Strongly Agree

Likert Response	Frequency	Percentage
1 – Strongly Disagree	10	6.7%
2 – Disagree	20	13.3%
3 – Neutral	46	30.7%
4 – Agree	46	30.7%
5 – Strongly Agree	28	18.7%
Total	150	100%

Interpretation

The results show a generally positive but somewhat mixed perception of AI's role in encouraging independent learning. 49.4% of students either agree (30.7%) or strongly agree (18.7%) that AI encourages students to learn independently.

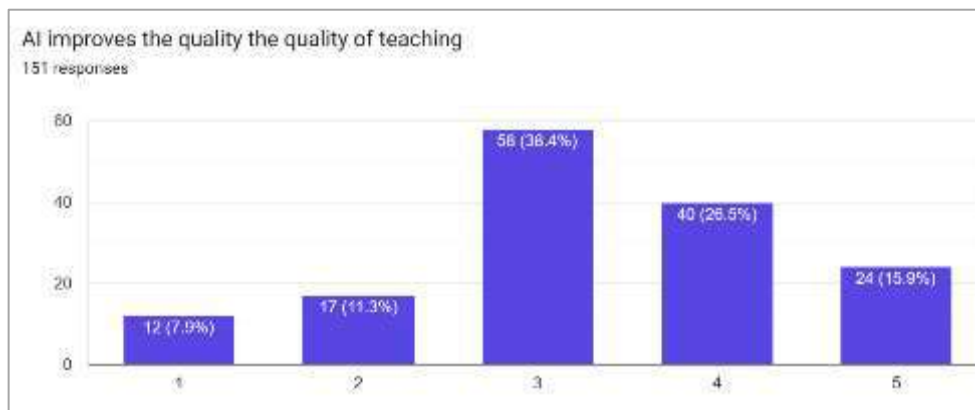
At the same time, 30.7% of respondents are neutral, indicating that a significant proportion of students are uncertain about whether AI actually promotes independent learning.

On the negative side, 20% of students either disagree (13.3%) or strongly disagree (6.7%) with the statement. This suggests that some students may feel that reliance on AI could reduce rather than encourage independent learning.

The mean Likert score is approximately 3.41 out of 5, which is slightly above the neutral midpoint of 3. The median response is 3 (Neutral), while the mode is tied between 3 (Neutral) and 4 (Agree).

Overall Conclusion

The findings indicate that students have a moderately positive perception of AI's ability to encourage independent learning. Although nearly half (49.4%) agree or strongly agree, the substantial neutral response (30.7%) suggests that many students remain uncertain about AI's impact on independent learning. The mean score of 3.41 indicates a slight tendency towards agreement, but the results are less strongly positive compared with the previous dimensions of AI use.



The diagram presents the responses of 151 students to the statement:

“AI improves the quality of teaching.”

Assuming the Likert scale is:

1 – Strongly Disagree | 2 – Disagree | 3 – Neutral | 4 – Agree | 5 – Strongly Agree

Likert Response	Frequency	Percentage
1 – Strongly Disagree	12	7.9%
2 – Disagree	17	11.3%
3 – Neutral	58	38.4%
4 – Agree	40	26.5%
5 – Strongly Agree	24	15.9%
Total	151	100%

Interpretation

The results indicate that students have a moderately positive but somewhat cautious perception of the role of AI in improving the quality of teaching.

A combined 42.4% of respondents agree (26.5%) or strongly agree (15.9%) that AI improves teaching quality. This indicates that a substantial proportion of students recognize the potential of AI to enhance teaching practices.

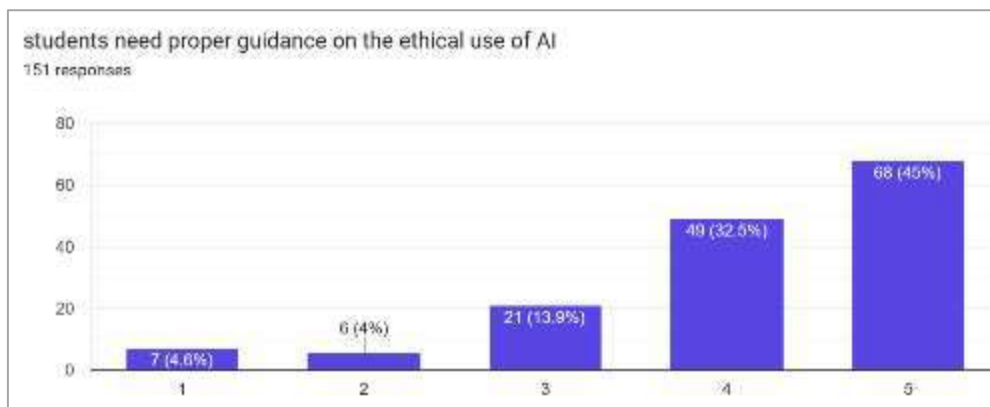
However, the largest group, 38.4%, selected Neutral. This suggests that many students are uncertain about the extent to which AI actually improves the quality of teaching or may have mixed experiences regarding its use.

On the other hand, 19.2% of respondents disagree or strongly disagree, indicating that a smaller but notable group does not perceive AI as contributing significantly to teaching quality.

The mean Likert score is approximately 3.31 out of 5, which is slightly above the neutral midpoint of 3. The median response is 3 (Neutral), and the mode is also 3 (Neutral).

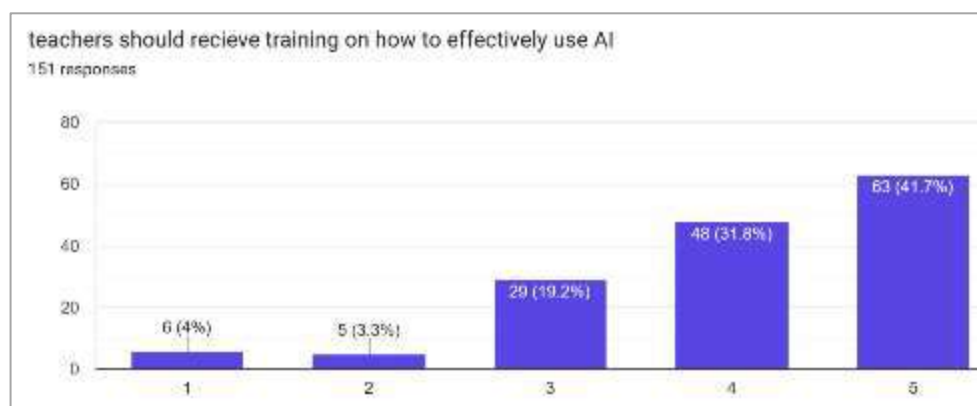
Overall Conclusion

The findings suggest that students are cautiously optimistic about the impact of AI on the quality of teaching. Although 42.4% of respondents agree or strongly agree that AI improves teaching quality, the high neutral response of 38.4% indicates considerable uncertainty. With a mean score of 3.31, the overall perception is slightly positive, suggesting that students recognize the potential benefits of AI while remaining uncertain about its actual impact on teaching quality.



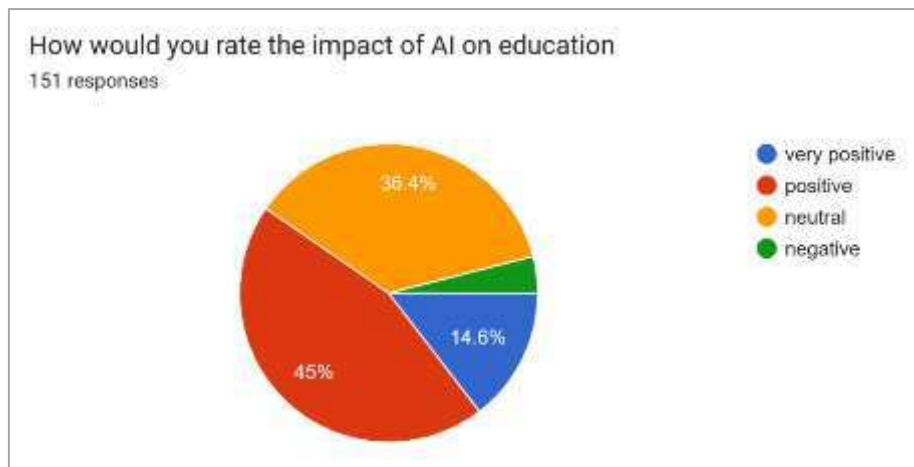
45% of the respondents strongly agrees that students need proper guidance on ethical use of AI.

32.5% of the respondents strongly agrees that students need proper guidance on ethical use of AI.



41.7% of the respondents strongly agrees that students need proper guidance on ethical use of AI.

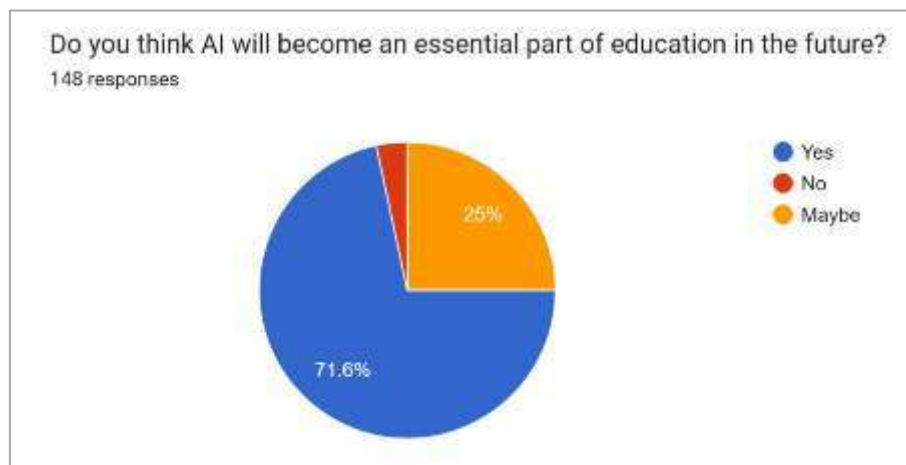
31.8 % of the respondents strongly agrees that students need proper guidance on ethical use of AI.



45% of the respondents are positive about the impact of AI on education.

36.4% of the respondents are neutral about the impact of AI on education.

14.6% of the respondents are very positive about the impact of AI on education.



71.6% of the respondents felt AI will become an essential part of education in the future.

Findings

The survey findings provide an overview of the demographic profile, level of familiarity, usage patterns, perceived benefits, and future expectations regarding the use of Artificial Intelligence (AI) in education.

1. Demographic Profile

The majority of respondents (62.6%) were between 18 and 25 years of age, indicating that the sample predominantly represents young learners. 25.5% of respondents were below 18 years of age. In terms of gender, 58.7% were female and 40% were male, showing a slightly higher representation of female respondents.

Regarding educational status, 85.8% of respondents were students. Among them, 74.2% were undergraduate students, while 12.9% were postgraduate students. Thus, the survey primarily reflects the views of undergraduate learners.

2. Familiarity and Use of AI

The findings indicate that respondents have a considerable level of familiarity with AI. 64.3% of respondents reported being moderately familiar with AI. The data also indicates another 32.5% as moderately familiar; however, this appears to duplicate the category above and may need to be checked against the original questionnaire.

AI is being used regularly for educational purposes. 46.8% of respondents reported using AI sometimes, while 45.5% reported frequent use of AI tools for education. This demonstrates that AI has become a relatively common component of students' academic activities.

3. AI Tools and Educational Purposes

ChatGPT was the most widely used AI-based educational tool, with 95.5% of respondents reporting its use. This highlights the strong popularity and accessibility of ChatGPT among students.

The major educational purposes for which respondents use AI include:

- Research and information gathering – 40.9%
- Understanding difficult topics – 22.1%
- Solving problems – 16.2%

These findings suggest that students primarily use AI as a source of information and academic assistance, particularly when searching for information or attempting to understand challenging concepts.

4. Frequency of AI Use

The survey shows that AI is used fairly regularly for educational purposes. 45.5% of respondents use AI several times a week, while 20.1% use AI daily. A further 32% use AI occasionally.

This indicates that AI is not merely an occasional source of assistance but has become integrated into the academic routines of many students.

5. Perceived Impact on Learning

The findings reveal a generally favourable perception of AI's impact on learning. 35.9% of respondents agreed that AI makes learning more interesting, while 20.3% strongly agreed. However, 32.7% remained neutral, suggesting that some students are uncertain about whether AI significantly enhances their learning experience.

Overall, the responses indicate that students tend to recognize AI's potential to make learning more engaging, accessible, and interactive, although a sizeable proportion remains undecided.

6. Overall Impact of AI on Education

The respondents were generally positive about the broader impact of AI on education. 45% expressed a positive opinion about AI's impact on education, while 14.6% were very positive. At the same time, 36.4% were neutral.

Thus, although a majority show a favourable attitude towards AI, the relatively high neutral response suggests that students may still be evaluating its long-term benefits and limitations.

7. Future Role of AI in Education

A particularly significant finding is that 71.6% of respondents believe that AI will become an essential part of education in the future. This demonstrates a strong expectation that AI will play an increasingly important role in teaching and learning.

Conclusion

The survey findings indicate that AI is becoming an important and widely accepted educational resource among students. The majority of respondents are young undergraduate learners who regularly use AI, particularly ChatGPT, for research, information gathering, understanding difficult concepts, and solving academic problems. Students generally perceive AI positively, especially in terms of accessibility, convenience, and making learning more engaging. However, the substantial neutral responses indicate that some students remain uncertain about the overall impact of AI on education. The finding that 71.6% believe AI will become an essential part of education in the future demonstrates strong expectations regarding the growing role of AI in the educational sector. Overall, the results suggest a moderately strong perception among students that the use of AI might encourage plagiarism. With 54% agreeing or strongly agreeing.

The data suggests that AI is shifting from being merely a supplementary academic tool to becoming an increasingly integrated component of students' educational experiences.

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