

Mapping the Use of GAI in a Higher Educational Context

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Overview

- Mapping the Use of Generative AI Tools in the Context of a Small College (Fewer than 1,000 Students) in the U.S.
- Interesting results and conclusions.



Figure: "Pandora" by
John William
Waterhouse

Research Questions

- ① What proportion of students use Generative AI tools?
- ② How frequently do students use GAI tools?
- ③ For which purposes do students use these tools?
- ④ Which tools are the most popular?

Survey Design

- Anonymous, seven-item survey combining closed-ended, multiple-choice, and Likert-scale questions.
- Native language, familiarity with Generative AI, and AI usage (Yes/No).
- Students' academic disciplines, preferred Generative AI tools, and purposes of use (Select all that apply).
- Frequency of GAI usage measured via Likert scale: Rarely to Daily.



Figure: "Composition with Red, Blue and Yellow" by Piet Mondrian

Data Analysis

- Non-parametric statistics applied due to nominal and ordinal data.
 - Mann-Whitney U test: Compared AI usage frequency between international and domestic students.
 - Chi-Square test: Examined associations between disciplines, AI usage, and purposes.
- Excluded incomplete responses ($n = 23$) to ensure robust analysis; imputation was avoided.



Figure: "Dynamism of a Car" by Luigi Russolo

Results: What proportion of students use Generative AI tools?

- 93.2% of students reported using AI in their academic activities.
- Only 6.8% indicated no use of AI tools.
- Widespread adoption of Generative AI among students.

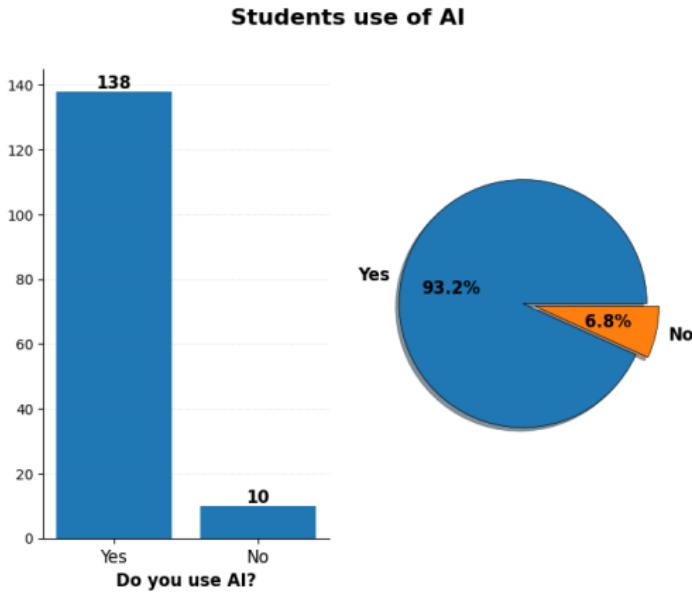


Figure: AI Usage Proportion

Results: International Students

- 100% of surveyed international students reported using AI.
- Despite a smaller sample size, it represented a significant portion of the international student population.

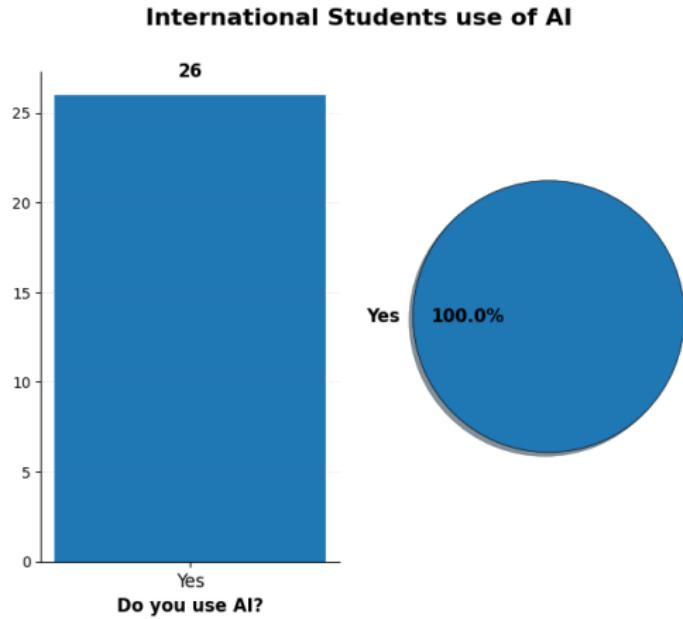


Figure: AI Usage Proportion (International Students)

Results: How frequently do students use GAI tools?

- 76.1% of students use AI less than weekly.
- 41.3% reported weekly usage; only 8.7% use AI daily.
- Mann-Whitney U test: No significant difference in AI usage frequency between international and domestic students ($p > .05$).
- Both groups use AI tools at comparable rates.

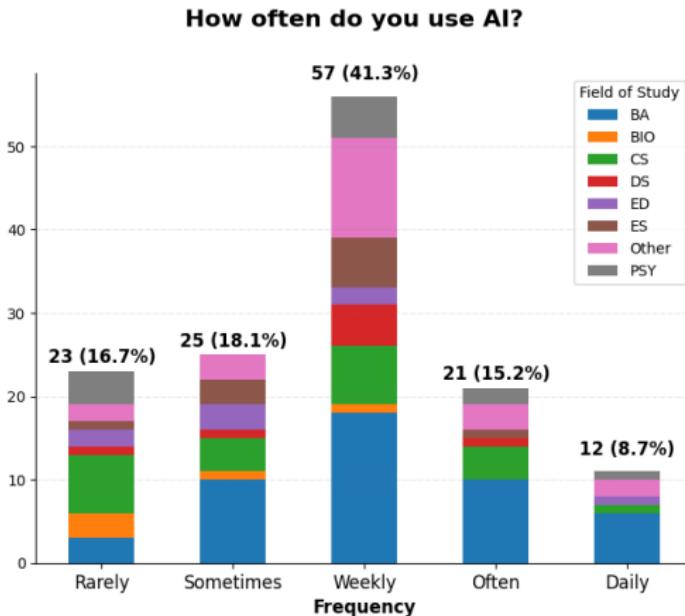


Figure: Frequency of AI Usage per Field of Study

Results: For which purposes do students use GAI tools?

- **Generating ideas and brainstorming:** Most common purpose (68.4%).
- **Proofreading and grammar checking:** Reported by 55.1% of respondents.
- **Learning new topics:** 39.7% of students use AI for this purpose.

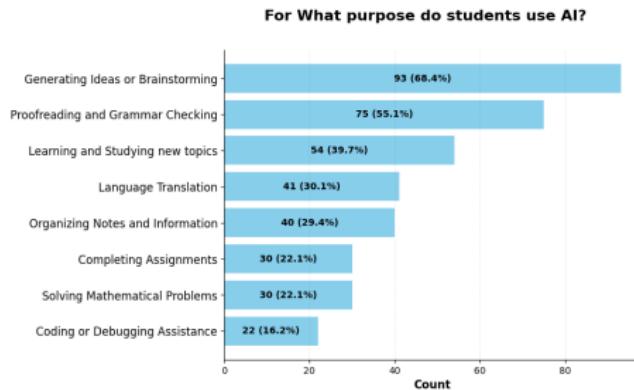


Figure: Most common purposes when using GAI tools.

Results: International Students Comparison

- **Overall usage:** No significant differences in AI purposes between groups ($p > .05$).
- **Language translation:** Higher usage among international students.
- **Proofreading and grammar checking:** More frequent among domestic students, contrary to expectations.

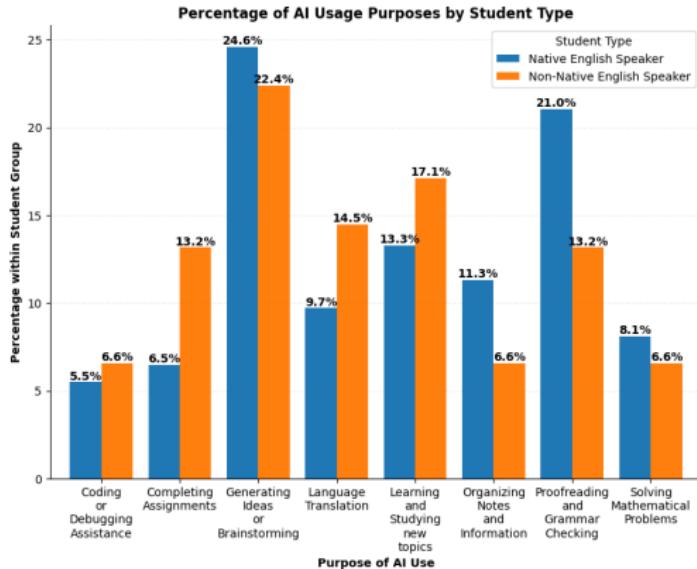


Figure: Purpose of GAI Usage Comparison

Results: Which tools are the most popular?

- **ChatGPT**: The most popular tool, used by 77.9% of students.
- **Grammarly**: Second most popular, used by 60.3%.
- Usage trends reflect primary purposes like proofreading and grammar checking.

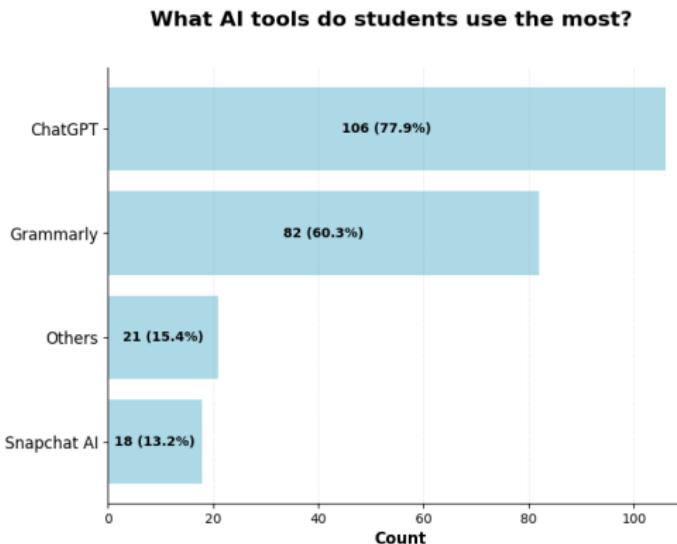


Figure: Most Used AI Tools Among Students

Conclusions

- **Widespread Adoption:** 93.2% of students use Generative AI, with the majority using it weekly or less frequently.
- **Key Purposes and Tools:** Most students use AI for idea generation (68.4%) and proofreading (55.1%). ChatGPT (77.9%) and Grammarly (60.3%) are the dominant tools.
- No significant differences in purpose usage between domestic and international students.



Figure: "The Son Of a Man" by René Magritte

Limitations and Future Research

- **Small Sample Size**
 - Limited generalizability.
 - Underrepresented disciplines.
- **Rapid Evolution of AI Tools:**

The fast-paced development of Generative AI may render findings outdated.
- **Future Directions**
 - Expand research to multiple institutions.
 - Examine broader impacts on learning and ethics.



Figure: "Landscape with the Fall of Icarus" by Pieter Bruegel the Elder

Acknowledgments

We gratefully acknowledge financial support from Lyon College.

"e il naufragar m'è dolce in questo mare" (Original Version)

"and drowning is to me sweet in that sea." (English Translation)