GenAI Holds Great Promise for Distance Learning, But There Are Concerns

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Take Home Messages

- GenAI understands NOTHING
- This field is changing incredibly quickly

Outline

- GenAI detection
- Things that are (currently) harder for GenAI to do
- Use of GenAI in research
- Future of GenAI in academia

GenAI Detection – How it Works

- GPTZero
  - Perplexity
    - How well the large language model can predict the next word
    - Lower scores mean better predictions, but higher chance GenAI produced the text
  - Burstiness
    - Uneven distribution of events, words, and sentence structures over time
    - Human writing will have high and low scores
    - Machine writing has stable scores over time

Professor Flunks All His Students After ChatGPT Falsely Claims It Wrote Their Papers

Texas A&M University–Commerce seniors who have already graduated were denied their diplomas because of an instructor who incorrectly used AI software to detect cheating

BY MILES KLEE

GenAI Detection – Issues

- How detectors work is unclear
- Turnitin initially claimed it was 98+% accurate, but has backed away from that
- OpenAI dropped its GenAI detection project
- New versions of the GPT are coming out regularly, detectors will always be trying to catch up

GenAI Detection – Turnitin Scores April 2023

- Paragraph 1
- Paragraph 2
- Paragraph 3
- Paragraph 4
- Paragraph 5

- Paragraph 1
- Paragraph 2
- Paragraph 3
- Paragraph 4
- Paragraph 5

TII AI Score

100%

- Paragraph 1
- Paragraph 2
- Paragraph 3
- Paragraph 4
- Paragraph 5

- Paragraph 1
- Paragraph 2
- Paragraph 3
- Paragraph 4
- Paragraph 5

TII AI Score

54%

- Paragraph 1
- Paragraph 2
- Paragraph 3
- Paragraph 4
- Paragraph 5

TII AI Score

54%

GenAI Detection – A Little Research

- Use ChatGPT to answer prompts from the classroom
- Paraphrase ChatGPT with free paraphraser
- Translate ChatGPT to Spanish and back to English with Google Translate

	ChatGPT	ChatGPT + Paraphrase	ChatGPT + Translation
Turnitin AI Score	86%	35%	81%
Perplexity	341	172	110
Burstiness	1626	665	292

Things That Are (Currently) Harder for GenAI

- Requiring specific classroom sources or resources
- Building on previous discussions or interactions
- Creating multimedia output, such as presentations or videos

- These are likely already easier for GenAI

GenAI Detection – What's the Solution?

- Change in writing ability or tone
- Hallucinations, particularly of references
- Using unexpected sources
- Unable to explain or describe the work submitted

Use of GenAI in Research

- Finds connections between seemingly unrelated ideas
- Facilitates discoveries
- Qualitative data analysis for interview transcription and thematic coding
  - What is being stored where?
  - Does participant data train the model?
  - What are the implications for IRB, HIPAA, and Human Subjects Protections?

Future of GenAI in Academia

- Training and practice; clear institutional policies

- Have a policy and be transparent

- *Nature*
  - Specific AI model built to detect GenAI writing in chemistry peer-reviewed journal articles by focusing on style (Nov 2023)

- Personalized tutoring (Khanmigo)

- Privacy and FERPA

- Personalize GPTs provide writing feedback

Ethan Mollick – One Useful Thing

In the beginning, Macbeth is portrayed as a valiant and honorable warrior, whose ambitions are noble and aligned with the natural order. His initial desire to serve King Duncan and protect Scotland is commendable. However, the prophecy of the three witches awakens a latent ambition for power. Shakespeare uses the witches as a narrative device to externalize Macbeth's inner desires, suggesting that ambition is a natural part of the human psyche, yet it requires caution and control.

Excellent point on the witches' role. Could you draw a parallel to other characters who influence Macbeth's ambition?

As Macbeth succumbs to the seduction of power, his ambition shifts from noble to pernicious. The pivotal moment of his moral collapse is his decision to murder Duncan. This act is a clear manifestation of his overreaching ambition. Shakespeare crafts this transformation meticulously, showing how Macbeth wrestles with his conscience, only to emerge more resolved to commit the heinous crime, spurred by Lady Macbeth's taunts of cowardice. The murder is not just a crime against the king but a crime against the natural order, as evidenced by the subsequent supernatural occurrences and Macbeth's descent into paranoia.

This is a key moment in the play. Try to analyze further the internal conflict leading to the collapse.

Example of in-text edits

GENERAL FEEDBACK:

Your essay presents a well-defined analysis of ambition in 'Macbeth,' with a clear thesis and relevant textual evidence. Strengths of this draft include a strong opening that succinctly states the thesis and a consistent focus on how ambition is portrayed in the play. To further improve the essay and aim for an 'A', consider the following:

1. Depth of Analysis: Delve deeper into the text to explore nuances. For instance, consider how Macbeth's ambition is influenced by other characters and what that suggests about the nature of ambition in the play.

2. Textual Evidence: While you provide direct quotations, integrating more examples or contrasting points from the play could strengthen your argument.

3. Structure and Flow: Ensure that each paragraph transitions smoothly to the next, with clear topic sentences that reflect back on the thesis.

4. Conclusion: A more robust conclusion that not only summarizes the main points but also reflects on the wider implications of your argument will give your essay a more powerful ending.

5. Critical Perspectives: Consider incorporating critical interpretations of ambition in 'Macbeth' from literary scholars to add depth to your analysis.

6. Proofreading: Watch out for minor grammatical errors and ensure that your citation format is consistent throughout the essay.

Reflect on these points and revise your draft accordingly. Your goal is to present a polished and insightful argument that demonstrates a thorough understanding of the play and the complexity of its themes. Consider refining your thesis to specify the aspects of ambition you will be focusing on.

Take Home Messages

- GenAI understands NOTHING
- This field is changing incredibly quickly
- There are great opportunities as we've seen this week, but there are reasons to be cautious
- Try it!