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AI-Enhanced Cybersecurity Executive Reporting

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Abstract

This study illustrates that embedding GenAI ethics and structured AI tool use in cybersecurity curricula improves graduate student writing quality and confidence, while introducing a maturity model

Introduction

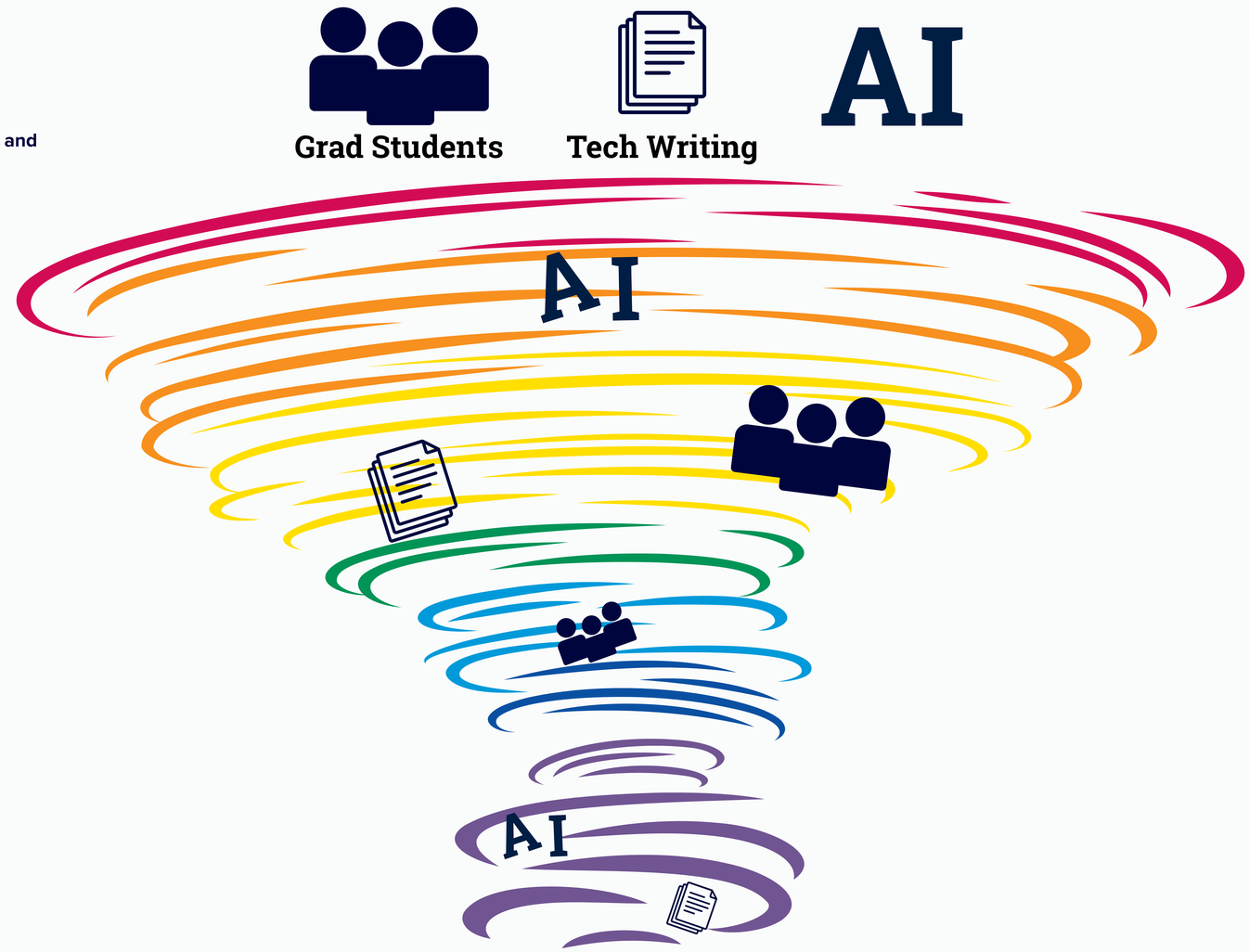
- Cybersecurity graduates often lack training in executive-ready communication.
- GenAI tools (ChatGPT, Grammarly) can support writing fluency , revision habits, and ethical AI literacy.
- This study integrates structured writing assignments and a writing maturity model to bridge this gap.

Methods

Graduate cybersecurity students (n = 52).
Iterative writing pedagogical process:

- Draft without AI
- Complete curated AI use training
- Revise with AI tools
- Reflect & document AI use

Data: survey (Likert & reflections), assignment artifacts



Findings

(n = 11, 21% response rate):

82%	73%	82%
AI improved structure & grammar.	Greater confidence in writing.	More time spent revising.

Common use: brainstorming, revising, tone refinement, citation checks.

- AI encouraged rewriting & reflection.
- Students valued normalized ethical use.
- Concerns: overreliance, poor-quality AI outputs.

Implications

- Structured AI integration improves fluency & ethics.
- Writing maturity model develops executive-ready communication.
- Scalable framework for higher ed + professional training.

Conclusion

GenAI is not a magic wand!

When ethically integrated, it strengthens reflection, revision, and professional communication in cybersecurity education.

Maturity Model:
Cybersecurity Executive Report Writing

1	2	3	4	5
Raw Technical Dump	Translated but Verbose	Risk Aligned Narrative	Decision Oriented Briefing	Strategic Business Integration
Technical data without executive context	**Technical language partially translated, still detailed**	**Technical information aligned with security risks**	**Concise, prioritized recommendations for executives**	**Reports aligned with business objectives and strategic Outcomes**