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# Not-So-Artificial Intelligence: Teaching and Learning AI Literacy in a PME Community

- *AI Literacy in Context*, Chloe Woida (ctr)
- *The Human Factor in PME Writing and AI Education*, Dr. Sandra Leavitt
- *An AI Tool Use Case*, Aileen Houston
- *AI Tools in the Classroom*, Dr. Kate Egerton (ctr)



2024 Army University Learning Symposium  
"Artificial Intelligence Applications for Learning"

Naval Postgraduate School

# AI LITERACY IN CONTEXT

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June 2024

Army University Learning Symposium



Naval Postgraduate School



Graduate Writing Center

Images throughout were generated by DALL·E, an AI program by OpenAI.



# Goal 1: To better understand AI literacy as a desired learning outcome

How are capabilities and competences related to AI presented in military contexts and in comparison to other teaching and learning contexts?



## AI LITERACY:

“A basic understanding of the benefits, risks and opportunities of AI and how it impacts daily lives.”

“the baseline knowledge and skills needed to identify, understand, and interact with AI responsibly and effectively.”

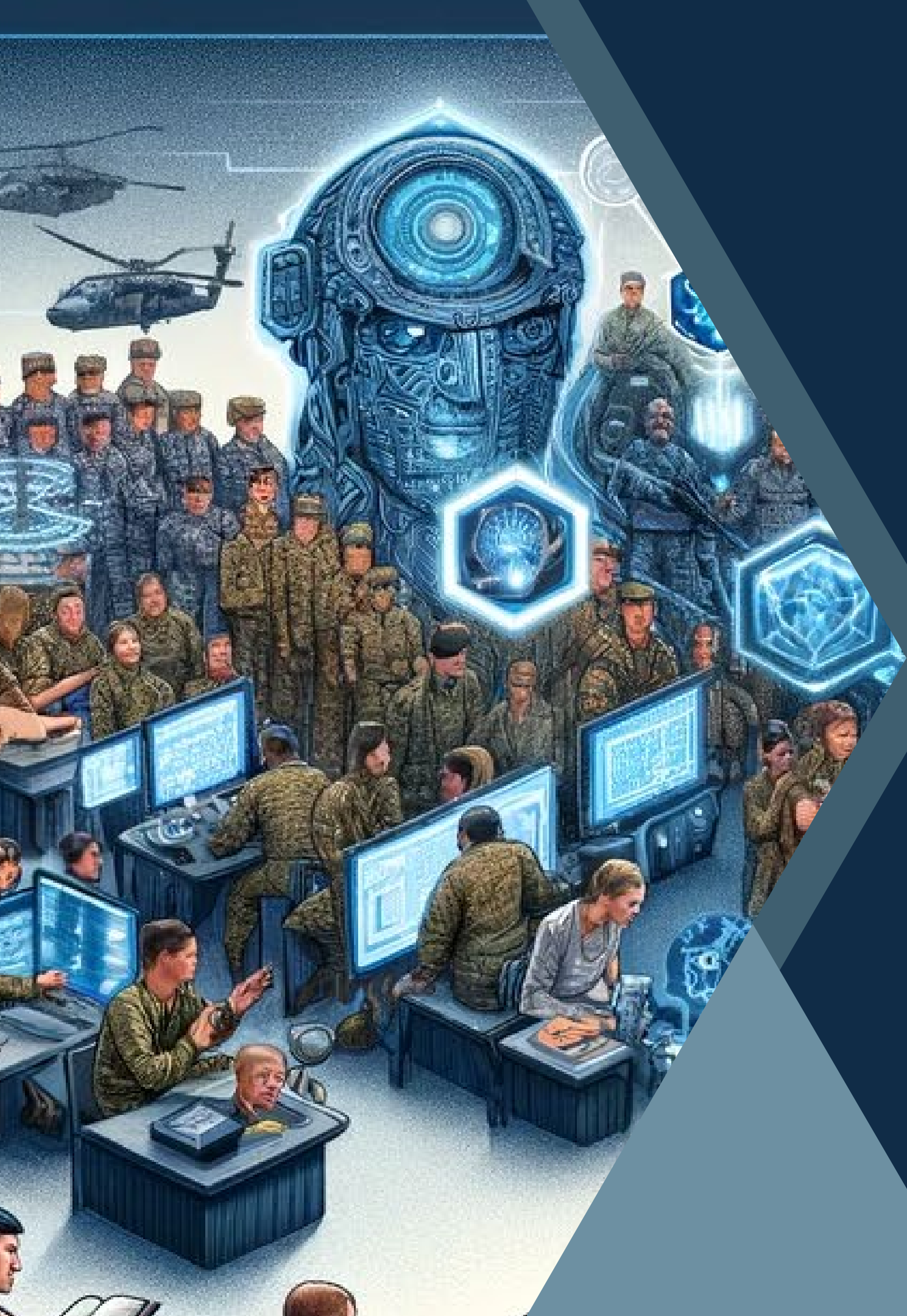
National Artificial Intelligence Advisory Committee (NAIAC). Recommendations: Enhancing AI Literacy for the United States of America. November 2023. [https://ai.gov/wp-content/uploads/2023/12/Recommendations\\_Enhancing-Artificial-Intelligence-Literacy-for-the-United-States-of-America.pdf](https://ai.gov/wp-content/uploads/2023/12/Recommendations_Enhancing-Artificial-Intelligence-Literacy-for-the-United-States-of-America.pdf)

“AI education to date aims to enable people to learn how AI systems work in **technical terms** and it usually involves programming and **building an AI application.**”

Luckin, R., Cukurova, M., Kent, C., & du Boulay, B. (2022). Empowering educators to be AI-ready. *Computers and Education: Artificial Intelligence*, 3, 100076.

“Most of the research on **AI education for non-technical learners** has just been published within the past year.”

Long, D., & Magerko, B. (2020). What is AI Literacy? Competencies and Design Considerations. *Proceedings of the 2020 CHI Conference on Human Factors in Computing Systems*, 1–16. <https://doi.org/10.1145/3313831.3376727>



Mick Ryan argued in 2018 for “a heightened technological literacy across the entire force.”

“Military personnel will require basic literacy in artificial intelligence, including

knowledge of its application,



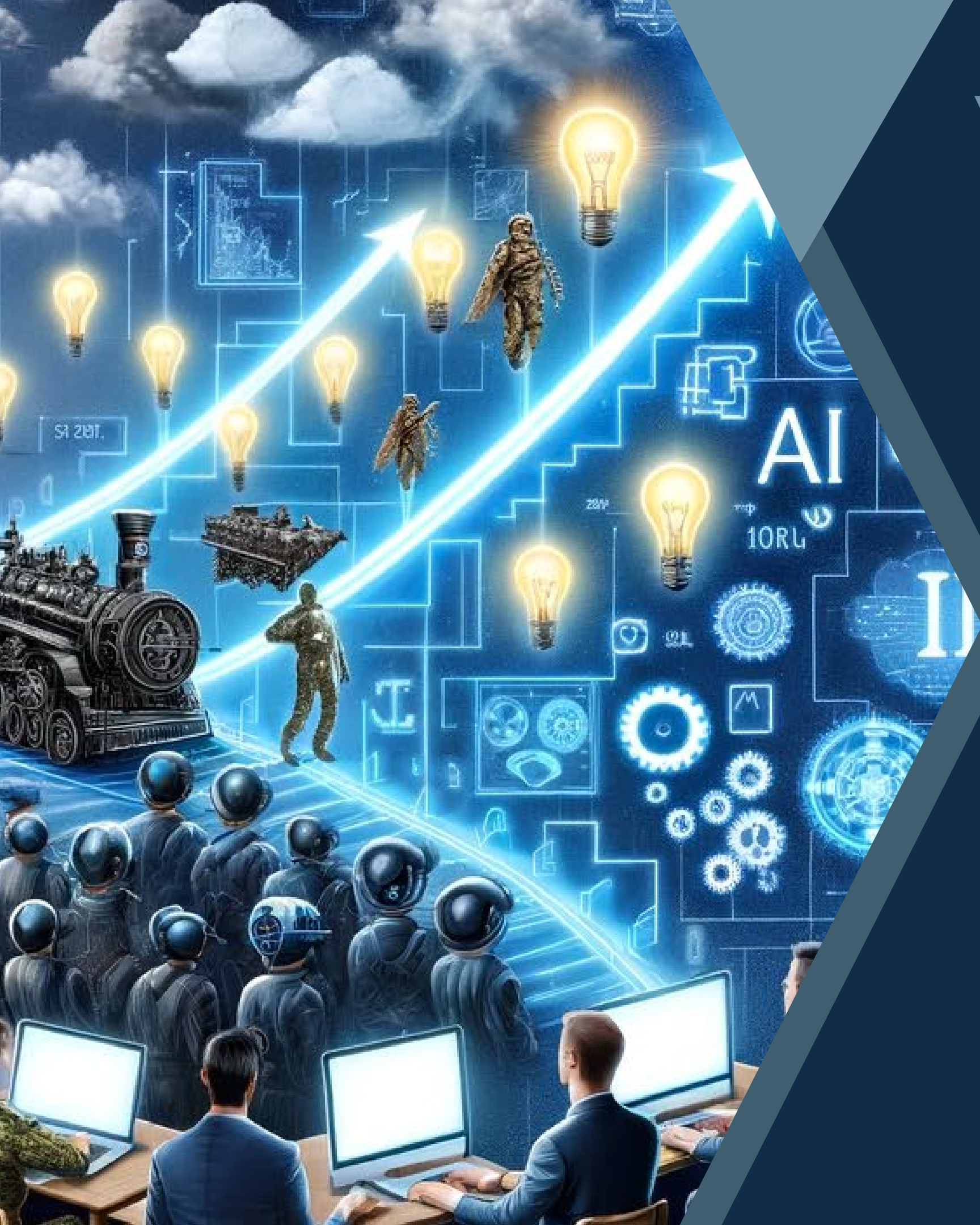
how to provide a level of assurance and quality control, and



how to optimally combine it with human intelligence.”



Intellectual Preparation for Future War: How Artificial Intelligence Will Change Professional Military Education. (2018, July 3). War on the Rocks. <https://warontherocks.com/2018/07/intellectual-preparation-for-future-war-how-artificial-intelligence-will-change-professional-military-education/>



## “AI education for end users”

Michael Horowitz and Lauren Kahn (2020) warned that “just as military personnel...in previous generations needed to...learn the basics of electricity and combustion engines ...the same will be true of AI now.”



“Provide leaders with a firm grasp of the basic underlying principles of AI”



Help leaders recognize “the general-purpose character of AI” as well as AI’s limitations



Enable leaders to “better envision where AI can fit into existing institutions and systems, and where it would be most useful to integrate or introduce”









Foster awareness “of the status of AI development in other countries” including policy, initiatives, and best practices

The AI Literacy Gap Hobbles American Officialdom. (2020, January 14). War on the Rocks. <https://warontherocks.com/2020/01/the-ai-literacy-gap-hobbling-american-officialdom/>

# DOD has addressed AI education in terms of learning outcomes and competencies.

## From the 2020 *DOD AI Education Strategy*

Figure 4. *AI Learning Outcomes per Archetype*

Archetype	Description	Learning Outcomes
 <b>Lead AI</b>	Decides policy and doctrine, including how AI tools can or will be used; builds AI vision and plan	<ul style="list-style-type: none"><li>• Determine how to deploy the responsible application of AI</li><li>• Articulate AI leadership vision and how it impacts their organization</li><li>• Recognize potential applications of AI use cases</li></ul>
 <b>Drive AI</b>	Ensures appropriate AI tools and capabilities are developed and delivered across DOD	<ul style="list-style-type: none"><li>• Choose relevant cross-functional team members to develop AI tools</li><li>• Categorize &amp; evaluate which ethical AI use cases best support Component strategy</li><li>• Demonstrate ability to identify, initiate, &amp; lead AI projects</li></ul>
 <b>Create AI</b>	Creates AI tools to meet current and future needs	<ul style="list-style-type: none"><li>• Develop &amp; productionize a wide-array of ethical AI applications</li><li>• Determine which AI solution is most applicable to the use case</li><li>• Industrialize solutions to support enterprise-scale application</li></ul>
 <b>Embed AI</b>	Embedded with Employ AI, establishes AI systems and provides end-user support at tactical edge	<ul style="list-style-type: none"><li>• Support use case development by solving down-range infrastructure constraints</li><li>• Analyze and aggregate data in preparation of ethical AI application development</li><li>• Adapt and solve AI application issues down-range to maintain functionality</li></ul>
 <b>Facilitate AI</b>	Represents users to ensure appropriate AI tools are developed and delivered to address use cases	<ul style="list-style-type: none"><li>• Illustrate end-user needs and ensure they are built into the application</li><li>• Apply end-user needs to AI tool interface</li><li>• Analyze &amp; simplify system outputs to support clear, ethical enterprise decision-making</li></ul>
 <b>Employ AI</b>	End-users of AI tools, provide feedback on and requirements for AI tools	<ul style="list-style-type: none"><li>• Interpret AI application output to inform decision making</li><li>• Understand AI concepts and recognize potential future applications</li><li>• Demonstrate proficiency of engaging with and interpreting AI applications</li></ul>





# 2023: DOD Interim Guidance on Generative AI

Task Force Lima was launched in August of 2023 as a part of the Chief Digital and Artificial Intelligence Office's (CDAO) Algorithmic Warfare Directorate. Its purpose is to explore the impacts of generative AI.

The DOD guidance itself is CUI; a CDAO spokesperson shared the following key points with a journalist.



## Risk Assessment & Mitigation:

"Rather than enforcing outright bans on Gen AI tools, the DOD urges its components to adopt robust governance processes. This includes documenting the risks associated with specific Gen AI use cases, deciding and justifying the acceptable risks, and planning to mitigate unacceptable risks."



## Input Restrictions:

"Publicly available Gen AI tools should be approached with caution. Entering Classified National Security Information or Controlled Unclassified Information, such as personal or health data, is prohibited. All data, code, text, or media must be approved for public release before being used as input."



## Accountability:

"All DOD personnel are accountable for outcomes and decisions made with Gen AI's assistance. Users are advised to verify and cross-check all outputs from such tools."



## Citation:

"For transparency, appropriate labeling is encouraged for documents created with the aid of Gen AI tools."

Vincent, B. (2023, November 9). New interim DOD guidance 'delves into the risks' of generative AI. DefenseScoop. <https://defensescoop.com/2023/11/09/new-interim-dod-guidance-delves-into-the-risks-of-generative-ai/>

# Critical Competencies in AI Literacy

Long, D., & Magerko, B. (2020). What is AI Literacy? Competencies and Design Considerations. Proceedings of the 2020 CHI Conference on Human Factors in Computing Systems, 1–16. <https://doi.org/10.1145/3313831.3376727>

“A set of competencies that enables individuals to **critically evaluate AI technologies; communicate and collaborate effectively with AI; and use AI as a tool online, at home, and in the workplace.**”

## WHAT IS AI?

**Competency 1: Recognizing AI**  
Distinguishes between technological artifacts that use and do not use AI.

### **Competency 2: Understanding Intelligence**

Critically analyze and discuss features that make an entity 'intelligent', including discussing differences between human, animal, and machine intelligence.

### **Competency 3: Interdisciplinarity**

Recognize that there are many ways to think about and develop 'intelligent' machines. Identify a variety of technologies that use AI, including technology spanning cognitive systems, robotics, and ML.

### **Competency 4: General vs. Narrow**

Distinguish between general and narrow AI.

## WHAT CAN AI DO?

### **Competency 5: AI's Strengths & Weaknesses**

Identify problem types that AI excels at and problems that are more challenging for AI. Use this information to determine when it is appropriate to use AI and when to leverage human skills.

**Competency 6: Imagine Future AI**  
Imagine possible future applications of AI and consider the effects of such applications on the world.

## HOW DOES AI WORK?

### **Competency 7: Representations**

Understand what a knowledge representation is and describe some examples of knowledge representations...Knowledge representations model the world in a way that is understandable to a computer.

### **Competency 8: Decision-Making**

Recognize and describe examples of how computers reason and make decisions.

### **Competency 9: ML Steps**

Understand the steps involved in machine learning and the practices and challenges that each step entails.

## HOW DOES AI WORK? CONT

### **Competency 10: Human Role in AI**

Recognize that humans play an important role in programming, choosing models, and fine-tuning AI systems.

### **Competency 11: Data Literacy**

Understand basic data literacy concepts such as those outlined in [107].

### **Competency 12: Learning from Data**

Recognize that computers often learn from data (including one's own data).

### **Competency 13: Critically Interpreting Data**

Understand that data cannot be taken at face-value and requires interpretation. Describe how the training examples provided in an initial dataset can affect the results of an algorithm.

### **Competency 14: Action & Reaction**

Understand that some AI systems have the ability to physically act on the world. This action can be directed by higher-level reasoning (e.g. walking along a planned path) or it can be reactive (e.g. jumping backwards to avoid a sensed obstacle).

### **Competency 15: Sensors**

Understand what sensors are, recognize that computers perceive the world using sensors, and identify sensors on a variety of devices. Recognize that different sensors support different types of representation and reasoning about the world.

## WHAT SHOULD AI DO?

### **Competency 16: Ethics**

Identify and describe different perspectives on the key ethical issues surrounding AI (i.e. privacy, employment, misinformation, the singularity, ethical decision making, diversity, bias, transparency, accountability).

## HOW TO PEOPLE PERCEIVE AI?

### **Competency 17: Programmability**

Understand that agents are programmable.

Long, D., & Magerko, B. (2020). What is AI Literacy? Competencies and Design Considerations. Proceedings of the 2020 CHI Conference on Human Factors in Computing Systems, 1-16.  
<https://doi.org/10.1145/3313831.3376727>

Coding framework of AI literacy.

AI literacy	Definitions	N	Sample references	Sample studies
Know & understand AI	Know the basic functions of AI and how to use AI applications.	27	<i>Even though transparency in algorithms and AI in general has been <b>acknowledged</b> to be ethically important, the public lacks understanding of even the basic functions of AI. Efforts to make AI more comprehensible exist (Robinson, 2020).</i>	Lin et al. (2021) Lin et al. (2021); Kandlhofer et al., 2016); Robinson (2020).
Use & Apply AI	Applying AI knowledge, concepts and applications in different scenarios.	30	<i><b>Apply</b> k-means clustering in science contexts.. explore the mapping relationship between facial features and data values and <b>apply</b> the concept to brainstorm other objects such as Lego (Wan et al., 2020).</i>	Druga et al. (2019); Julie et al. (2020); Vazhayil et al. (2019).
Evaluate & create AI	Higher-order thinking skills (e.g., evaluate, appraise, predict, design) with AI applications.	19	<i><b>Design &amp; build</b> experiences: Technology exploration and <b>creation</b> activities supported students in making sense of the underlying AI concepts. (Lee, 2020).</i>	Druga et al. (2019); Han et al. (2018); How and Hung (2019).
AI ethics	Human-centered considerations (e.g., fairness, accountability, transparency, ethics, safety).	19	<i><b>“AI for social good”</b> measures an individual’s perception of the social environment surrounding the behavior, which is related to subjective norms (Chai et al., 2020).</i>	Chai et al. (2020); Druga et al. (2019); Gong et al. (2020).

Ng, D. T. K., Leung, J. K. L., Chu, S. K. W., & Qiao, M. S. (2021). Conceptualizing AI literacy: An exploratory review. *Computers and Education: Artificial Intelligence*, 2, 100041.

## Without AI literacy, individuals:

- Fail to recognize the extent to which they already use or interact with AI in common platforms.
- Fail to recognize the difference between general and narrow AI.
- Interpret AI agent behavior as though it results from humanlike cognitive processes.
- Are unaware of the effects of training data in shaping AI output.
- Assume AI systems are more capable or less capable than they actually are.
- Struggle to effectively integrate human and non-human contributions to tasks.
- May rely too heavily on AI and fail to leverage human skills when appropriate.
- Fail to imagine or anticipate how AI might be integrated or applied in the future.
- Fail to consider ethical concerns about AI.
  - data and privacy, bias in data and/or design, workforce displacement, misinformation, potential harm from advanced AI, and particularly the challenges of accountable decision-making by “black box” AI systems.

## WHAT IS AI?

Do students recognize AI when they interact with technology that relies on it?

Are students aware of the range of intelligent machines that exist?

Can students differentiate between narrow and general AI?

Have students critically considered the features of intelligence (whether human, animal, or machine)?

## WHAT CAN AI DO?

Have students considered what kinds of problems or tasks AI is good or bad at?

Can they accurately determine when human skills are needed instead?

Have students considered how AI might be applied in the future?

## HOW DOES AI WORK?

Do students have a sense of how knowledge about the world might be represented in a form a computer can use?

Do students have a sense of how computers reason and make decisions?

Do students understand the essentials of machine learning?

Are students aware of how humans shape the behavior of AI systems through programming, choosing models, and fine-tuning?

## WHAT SHOULD AI DO?

Have students considered key ethical issues surrounding AI? E.g.,

- privacy
- employment
- misinformation
- the singularity
- ethical decision making
- diversity
- bias
- transparency and accountability

**Questions informed by** Long, D., & Magerko, B. (2020). What Is AI Literacy? Competencies and Design Considerations. Proceedings of the 2020 CHI Conference on Human Factors in Computing Systems, 1–16. <https://doi.org/10.1145/3313831.3376727>

# Continuous Learning, Upskilling, and Reskilling



“Future military institutions will need to possess a system that is built around skilling and rapidly re-skilling their personnel as technology and strategic circumstances change.”

Ryan, M. (2020). The Intellectual Edge: A Competitive Advantage for Future War and Strategic Competition. Joint Force Quarterly, 96.



“Developments in AI accelerate technological change in workplaces and demands for continuous learning, upskilling, and reskilling.”

Markauskaite, L., Marrone, R., Poquet, O., Knight, S., Martinez-Maldonado, R., Howard, S., Tondeur, J., De Laat, M., Shum, S.B., Gašević, D. and Siemens, G.(2022). Rethinking the entwinement between artificial intelligence and human learning: What capabilities do learners need for a world with AI? Computers and Education: Artificial Intelligence, 3, 100056.



“Assuming a trajectory of adoption posited by Rogers’s (1962) model of innovation adoption...nearly all business practitioners will to some extent use generative AI to communicate and create content by mid-2024”

Cardon, P., Fleischmann, C., Logemann, M., Heidewald, J., Aritz, J., & Swartz, S. (2023). Competencies Needed by Business Professionals in the AI Age: Character and Communication Lead the Way. Business and Professional Communication Quarterly, 23294906231208166.



“86% of [survey] respondents believe that they will need upskilling, but just 14% of frontline employees say they’ve received training.”

Beauchene V., de Bellefonds N., Duranton S., Mills S. (2023, June). AI at Work: What People Are Saying. BCG Global. <https://www.bcg.com/publications/2023/what-people-are-saying-about-ai-at-work>



“Formal education must be supplemented through self-study by individuals.”

“Military organisations should provide curated resources that military personnel can ‘pull down’ from their institution – using internet or other sources – to supplement their formal development.”

Ryan, M. (2019). An Australian Intellectual Edge for Conflict and Competition in the 21st Century. The Centre of Gravity (CoG) Series Papers, No 48. Ed. Andrew Carr. Strategic and Defence Studies Centre (SDSC), Australian National University. <https://openresearch-repository.anu.edu.au/handle/1885/222924>





“To maintain job relevance and support future career transitions in a world with AI, individuals will require highly developed self-regulated learning (SRL) skills.”

Dragan Gašević in Markauskaite, L., et al (2022). Rethinking the entwinement between artificial intelligence and human learning: What capabilities do learners need for a world with AI? *Computers and Education: Artificial Intelligence*, 3, 100056.

“Self-regulated learning is not an innate ability, but rather a skill set that can be developed to help students direct themselves through the process of learning.”

Self-regulation | Teaching + Learning Lab. (n.d.). Retrieved December 4, 2023, from <https://tll.mit.edu/teaching-resources/how-people-learn/self-regulation/>

# Understanding AI technologies in the context of global competition

Potential for premature fielding of deadly AI technologies is a persistent concern.



Users must accurately understand AI and human capabilities respectively in order to appropriately integrate both



Human-AI teaming



AI literacy is **supported** when  
students:

Are **exposed to AI tools** and have opportunities for experiential learning with AI.

**Use AI tools critically** and deliberately, describing and **differentiating use cases.**

Think about and practice **risk assessment and mitigation** related to AI use.

Critically assess the **quality of AI output** and AI performance and compare it to human performance.

Speculate about **factors shaping AI behavior** and output (e.g., training data, machine learning, programming).

Plan and assess the **integration of AI support into complex processes** at various points.

Consider the balance of **human and AI contributions** to a task and/or process.

Imagine **future use of AI** and its impact on society and security.

**Practice techniques of transparency** and citation around their use of AI.

Develop information skills/resource awareness to **verify or cross-check AI output.**

Learn about and discuss key **ethical issues** surrounding AI.

Compare experience of tasks and processes completed **with and without AI support.**



What opportunities to foster and cultivate AI literacy are produced in the convergence of mass-accessible AI technology and military learning environments?



What are the continuities between mass-accessible AI tools that require no technical or programming knowledge and the military use contexts anticipated for AI in the near future?



What can PME students learn about “big AI” from schoolhouse interactions with “little AI”?



# THANK YOU

CHLOE WOIDA (CTR)  
DECEMBER 2023



Naval Postgraduate School



Graduate Writing Center





# The Human Factor in PME Writing and AI Education

**Dr. Sandra Leavitt**

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Chair, Gen AI Task Force on Education and Learning  
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# BLUF: Community and connection are key to developing military officers

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1. Military **values** and generative AI
2. Study results: **Strategies** that work
3. The **human factor** for military and educational success



# Navy core values are about man relationships and trust

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“When a man looks at the bottom of the barrel... he vividly realizes how men, fellow countrymen, **need one another for understanding and for sanity.... A man must relate to a community, a commonality of communication style, a commonality of ritual, of laws, of traditions, of poetry, of shared dreams, if he is to prevail.**”

James Stockdale, “Moral Leadership,” U.S. Naval Institute  
*Proceedings* 106, no. 9, Sept 1980.





# Military core values focus on human relationships and trust

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*Semper Fidelis*—“Always Faithful,” an eternal and **collective commitment** to the success of **our** battles, the progress of **our Nation**, and the steadfast **loyalty to the fellow Marines we fight alongside**.



"**Integrity** First, **Service** Before Self, and **Excellence** In All We Do"



**Loyalty, duty, respect, selfless service, honor, integrity, personal courage**



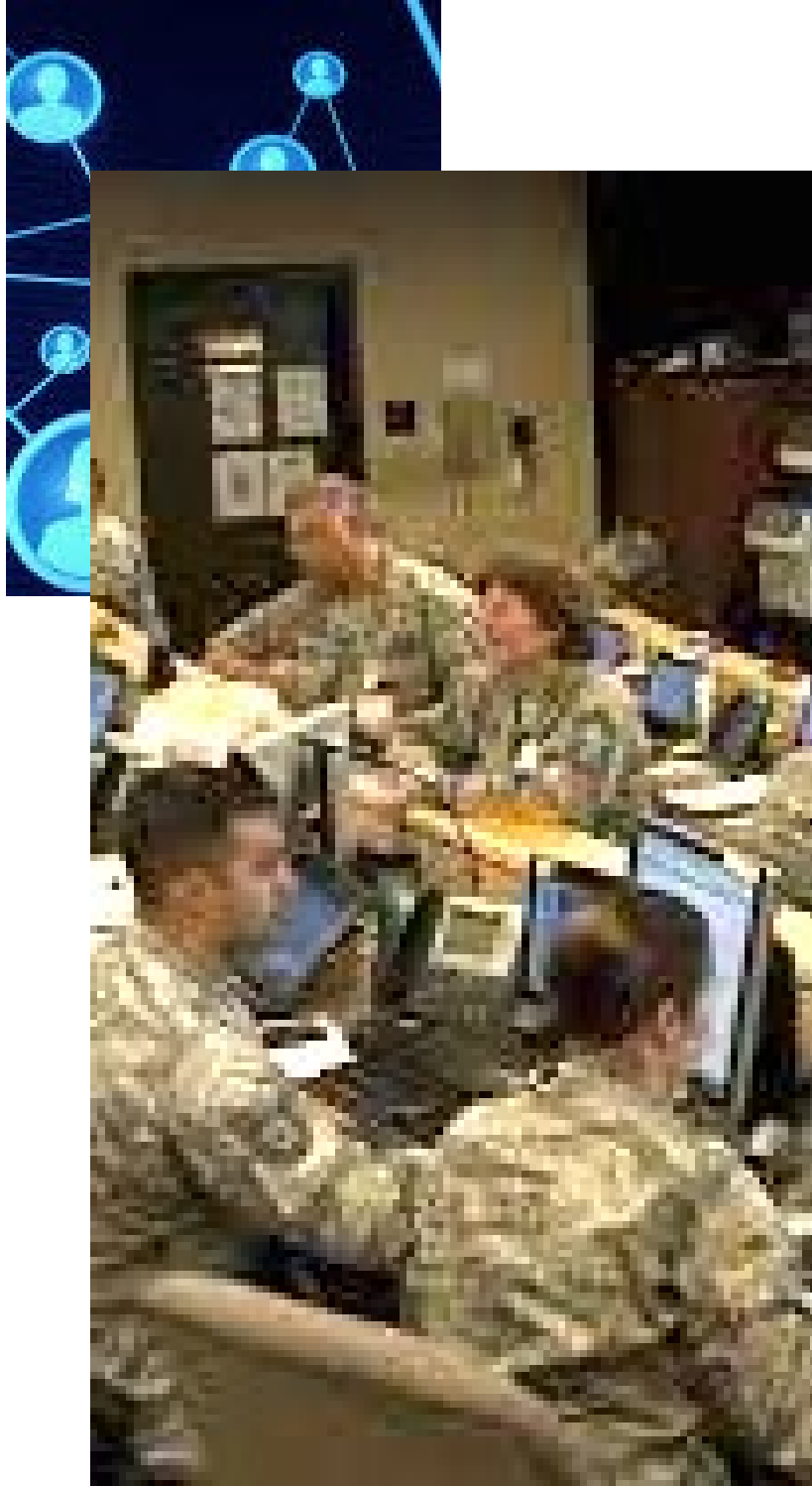
# AI: Keep Critical Thinkers in the Loop

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“These tools [gen AI/LLMs] must be accompanied by a robust review process which includes the **critical thinking skills of human expertise.**”

“The integration of AI should adhere to the core principles of Responsible Artificial Intelligence (RAI). This entails not only **proofreading** and **fact-checking** inputs and outputs for accuracy but also **verifying** the credibility of sources, **rectifying** factual inaccuracies, and **actively addressing** any potential violations of intellectual property rights.”

Department of the Navy Guidance on the Use of Generative Artificial Intelligence and Large Language Models.” DON CIO Memorandum, 6 Sept. 2023. <https://www.doncio.navy.mil/ContentView.aspx?id=16442>



# Keep Learners Connected to Others

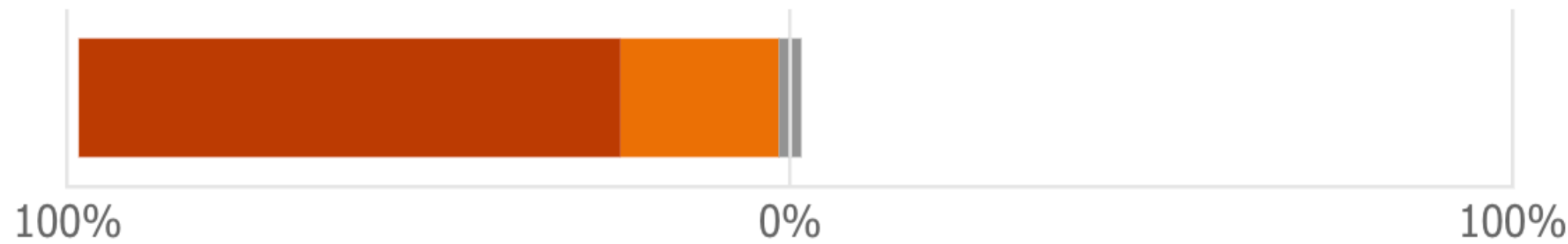
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“The genuine development of the Navy and Marine Corps as learning organizations, instilled with the capacity for **real critical thinking, requires...** a consistent effort at personal study and development as well as the **active mentorship and group learning** only found in operational units and shore commands.”

Benjamin F. Armstrong and John Freymann,  
*Developing the Naval Mind*,  
Naval Institute Press (Annapolis, MD), 2021, p. 2.

## To what extent do you agree that you strengthened your academic writing and critical thinking skills at NPS?

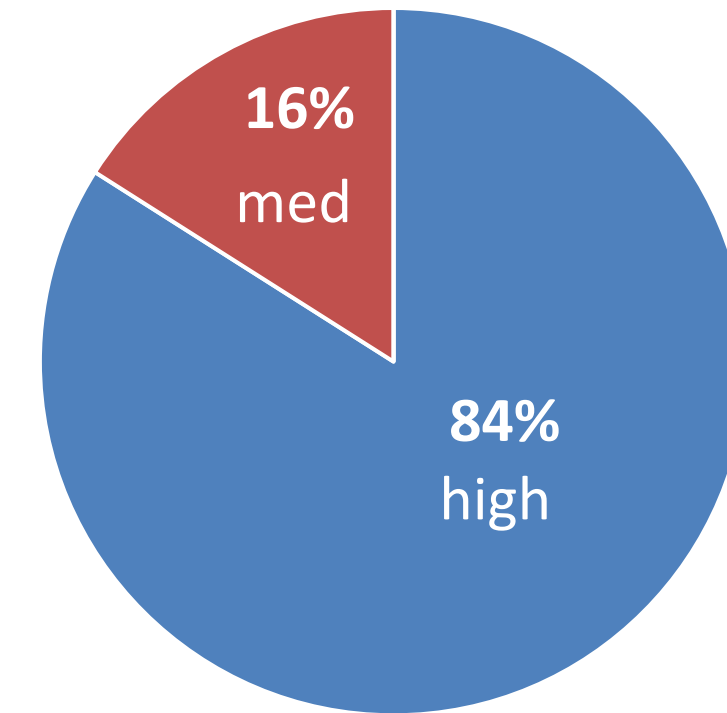
■ Strongly Agree   
 ■ Agree   
 ■ Undecided   
 ■ Disagree   
 ■ Strongly disagree



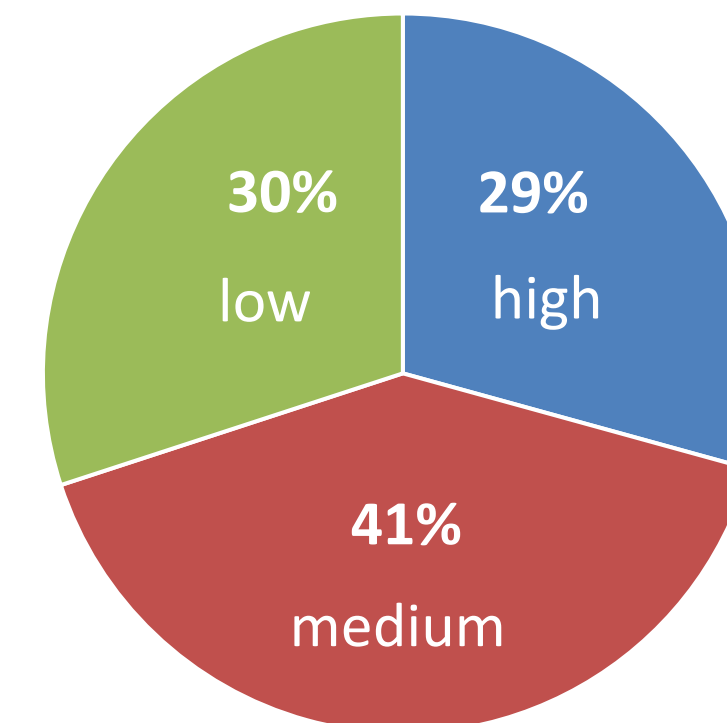
### Prior to Graduate School

- No writing-intensive courses for 12–15 years
- Little to no feedback on writing
- More descriptive than explanatory writing
- Institutional “voice” encouraged
- Different fields of study, ways of thinking

## Writing Proficiency Among Students at **Exit** Assessment, 2019–22



## Writing Proficiency Among Students at **Intake** Assessment, 2018–23

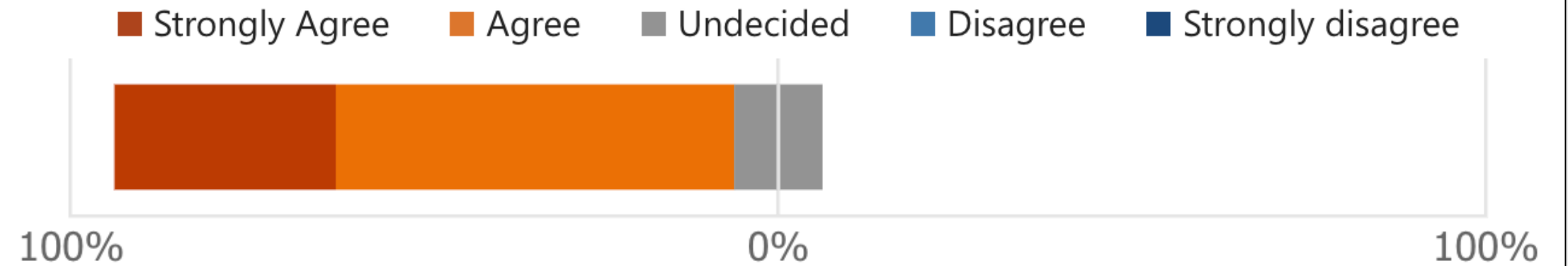


# Importance of Personal Choice

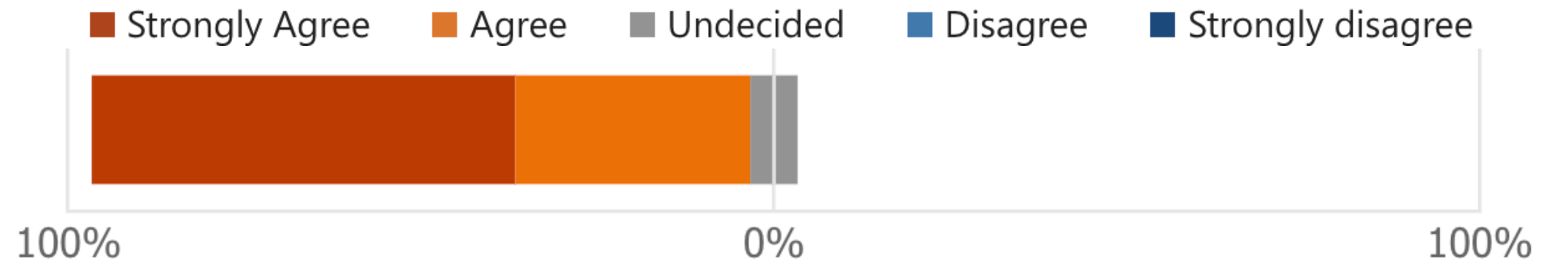
“These **voluntary** sessions helped me continue my growth as an academic writer beyond department requirements.”

“I actually tested out of the course, but **stayed in to learn.**”

To what extent were **required** activities sufficient to develop your academic writing and critical thinking skills?



To what extent were **voluntary** activities sufficient to develop your academic writing and critical thinking skills?



# Importance of Community



“The **people** who work within this environment are part of what make this graduate education experience so **fulfilling** and **worthwhile.**”

## Very helpful/Somewhat helpful

Very helpful   Somewhat helpful   Undecided   Not very helpful   Not at all helpful

Research/writing course



Live coaching



Asynchronous coaching



Writing class papers



Writing a thesis



# Importance of Connection



“I tested out of the [required writing and research class]. However, I stayed in the class because of the **professor.**”

“**Most helpful: honest feedback** from coaches, professors, and reviewers.  
**Least helpful: no feedback at all.**”

## Very helpful/Somewhat helpful

Very helpful   Somewhat helpful   Undecided   Not very helpful   Not at all helpful

Feedback: writing coaches



Feedback: thesis advisors



Feedback: class professors



## Most helpful materials

- NPS online learning modules

## Least helpful materials

- Static materials

# The human “intangibles” in development and success

“I must thank the Graduate Writing Center, [which] **motivated** me to **think more deeply**... and helped me **maintain momentum** in the thesis process. I am a more competent writer, a **more creative thinker**, and a **more professional Marine.**”

—Major, USMC, Defense Analysis  
Naval Postgraduate School

## Beyond SME: What Educators and Leaders Bring

- Encouragement
- Motivation
- Accountability
- Caring
- Listening
- Context sharing
- Knowledge of the individual
- Shared life experiences







# Teach with prompts requiring personal reflection, analysis, values, and complex thought

## Example

Read the following short passage excerpted from “Shock of the Mundane: The Dangerous Diffusion of Basic Infantry Tactics” by Leo Blanken, Kai Thaxton, and Michael Alexander, published in *War on the Rocks* on February 27, 2018.

Then, write an essay in which you effectively and accurately summarize the writers’ **not important points** and **share your own views** on whether, in warfighting, “humans are more important than hardware.”

You are invited to **use your own life experience, examples, and knowledge** as you construct your essay, but do no research online during the exam period.

## What gen AI does relatively well

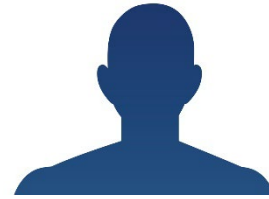
- Summaries
- Simple organization
- Basic paragraph and sentence structure
- Standard vocabulary, grammar, and punctuation

## What humans do best

- Creativity
- Communication with other humans
- Analysis, problem solving, and counterfactuals
- Transparency about assumptions
- Organization that builds a case
- Use of credible evidence and verification
- Examples that are detailed and applied
- Sophisticated sentences, correct word choices

# Humans outperform Gen AI per holistic assessment rubrics

## Score of 6: Superior Essays



- Addresses the task clearly and **responds effectively to all aspects of the task**
- Explores issues **thoughtfully and in depth, explaining** writer's assumptions and reasoning
- Is coherently organized, with **ideas supported by apt reasons and well-chosen examples**, and demonstrates smooth, coherent transitions
- Has an effective, fluent style marked by **clear, precise language** and **syntactic variety**
- Is generally free from errors in mechanics, **usage**, and sentence structure

## Score of 3: Marginal Essays



- **Distorts or neglects** aspects of the task or information [hallucination]
- ~~Lacks focus, or demonstrates confused or simplistic thinking~~
- ~~Is poorly organized or developed~~
- **Lacks adequate or appropriate details to support generalizations, or provides details without generalizations**
- Has problems with or **avoids syntactic variety**
- ~~Has an accumulation of errors in mechanics, usage, and sentence structure~~



Thank you!

<https://nps.edu/web/gwc/>





MSOTL – 8 DEC 2023

NOT-SO-ARTIFICIAL INTELLIGENCE  
A USE CASE FOR AI TOOLS IN  
TEACHING AND LEARNING

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At the Naval Postgraduate School, we have been systematically leveraging an algorithm-based software for teaching, learning, and efficiency **since 2015.**

strategies that align with military objectives. Finally, IO officers skillfully leverage the principles of operations security (OPSEC), military information support operations (MISO), and military deception (MILDEC) deception activities, qualifying them to craft sophisticated campaigns to shape perceptions and behaviors while safeguarding friendly information.

Table 2 from the 2022 14F Guidebook outlines an IO officer's traditional roles and responsibilities, showcasing their multifaceted contributions to military operations.

Table 2. 14F Duties & Responsibilities<sup>74</sup>

14F Duties & Responsibilities	
1. Apply social science principles across the four functional competencies of	7. Manage planning for flexible and adaptive operations through the joint planning process in

<sup>72</sup> Chairman of the Joint Chiefs of Staff, Irregular Warfare: Countering Irregular Threats Joint Operating Concept (Washington, D.C.: Chairman of the Joint Chiefs of Staff, 2010). [https://www.jcs.mil/Portals/36/Documents/Doctrine/concepts/joc\\_iw\\_v2.pdf?ver=2017-12-28-162021-510](https://www.jcs.mil/Portals/36/Documents/Doctrine/concepts/joc_iw_v2.pdf?ver=2017-12-28-162021-510), 38.

<sup>73</sup> HAF A2/6CX / A3CX, "U.S. AIR FORCE 14F GUIDEBOOK 2022", 3.

<sup>74</sup> Source HAF A2/6CX / A3CX, United States Air Force 14F Guidebook 2022 (Washington, D.C.: U.S. Air Force Headquarters, 2022), 5.

Match Overview

1 Internet 2111 words  
crawled on 14-Jul-2022  
[www.marines.mil](http://www.marines.mil)

2 Internet 1484 words  
crawled on 28-May-2023  
[www.doctrine.af.mil](http://www.doctrine.af.mil)

3 Internet 1103 words  
[hdl.handle.net](http://hdl.handle.net)

4 Internet 942 words  
crawled on 15-Sep-2017  
[static.e-publishing.af.mil](http://static.e-publishing.af.mil)

5 Internet 869 words  
crawled on 20-Mar-2023  
[apps.dtic.mil](http://apps.dtic.mil)

6 Internet 792 words  
crawled on 24-Apr-2023  
[www.airuniversity.af.edu](http://www.airuniversity.af.edu)

7 Internet 430 words  
crawled on 04-Sep-2022  
[armypubs.army.mil](http://armypubs.army.mil)

8 Internet 318 words  
crawled on 03-Dec-2022  
[www.rand.org](http://www.rand.org)

9 Internet 267 words  
crawled on 27-Apr-2023  
[pavilion.dinfos.edu](http://pavilion.dinfos.edu)

10 Internet 227 words  
crawled on 27-Jul-2017  
[www.dtic.mil](http://www.dtic.mil)

PLAGIARISM DETECTION

analysis, planning, integration, and assessments to influence perceptions, behavior, and action or inaction of relevant actors.	support of higher headquarters' and commander's objectives and desired effects.
2. Integrate physical and informational power at the strategic, operational, and tactical levels with Service, Joint, and Interagency organizations.	8. Direct the synchronized planning, execution, and assessment of kinetic and non-kinetic capabilities into the targeting cycle to effectively wage information warfare throughout the full spectrum of military operations.
3. Plan, coordinate, conduct, and assess OPSEC, MISO, and deception activities.	9. Drive the coordination and integration of information-related capabilities with Service



# We know. Turnitin is evil.

(see, e.g., Foster; Warner)



iThenticate is evil-adjacent.

We leverage this  
AI tool as a  
**guided  
complement** to  
holistic  
human instruction.

<https://nps.edu/web/gwc/tii-faq>



## GWC APPROACH TO **Plagiarism Prevention & iThenticate**

### **Source attribution is a tool for improving critical thinking and writing.**

While responsibly attributing source material ensures that a writer is giving credit where credit is due and helps prevent plagiarism, it also gives writers the tools to engage with scholarly voices, validate their own arguments and claims, and gain credibility and competency in their field.

### **We encourage early learning and practice.**

We encourage students to ask for iThenticate reports on early drafts of class papers, thesis proposals, and thesis chapters. These reports and the GWC's multifaceted guidance help students learn how to take notes and attribute sources properly before submission.

### **We approach source attribution holistically.**

Rather than focusing on the results of an iThenticate report in isolation when we work with students at the GWC, we discuss [attribution concepts](#) such as citing, summarizing, paraphrasing, quoting, common knowledge and language, signal phrases, sentence flow, and engaging in academic debates. When reviewing iThenticate reports, we read critically—beyond the report results—with an eye for what does (and does not) need to be attributed and the best methods for clarity.

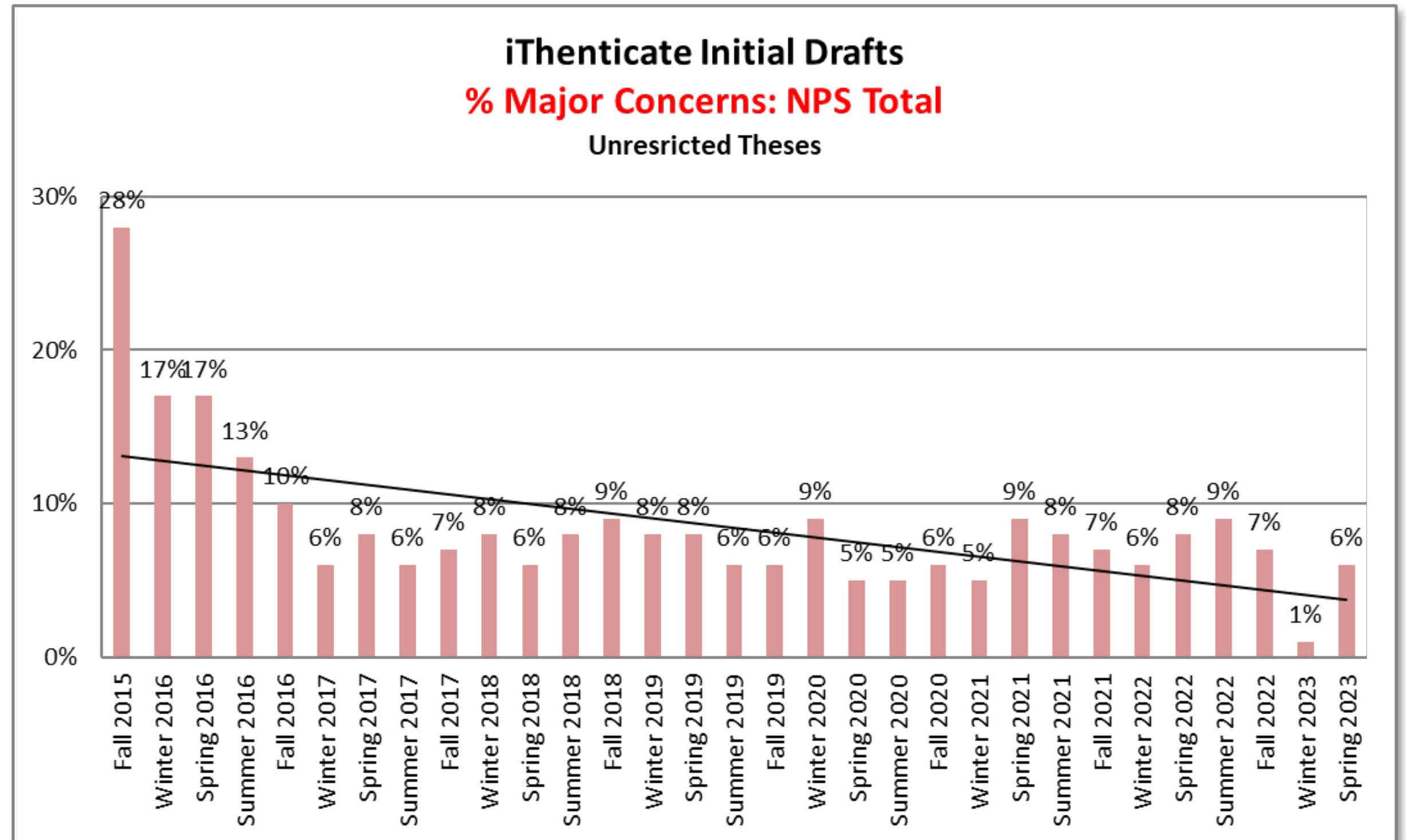


In fact:

Our practices for teaching with and learning from  
iThenticate align with growing best practices for  
teaching with and learning from

Artificial intelligence

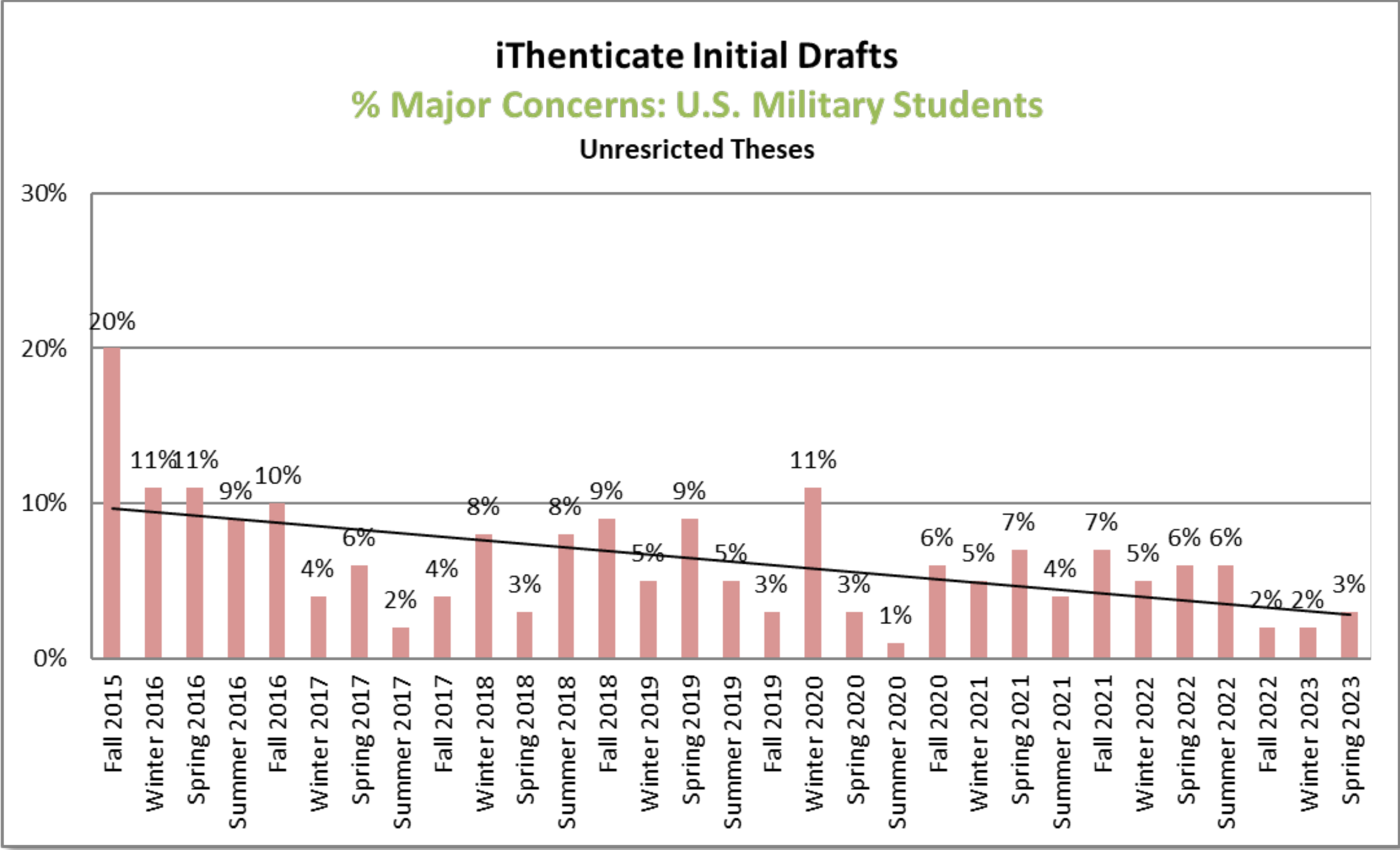
Bluf:  
it works  
(probably\*)



Initial-draft theses generally include three substantive “first draft” chapters. A writing center coach analyzes the iThenticate reports before the students finalize or submit their drafts for approval. The analysis focuses on guidance for revisions.

- **Major concerns:** Approximately 20 or more notes of potential concern. Overall concern that student either does not understand how to or has decided not to properly cite, quote, or paraphrase.

Esp. for military students



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# practices

(Graham-Matheson and Starr; Badge and Scott; Davis and Carroll; Serviss; Long and Magerko; Mollick and Mollick)

1

Education  
Human in the loop

2

Training  
Integrated with orientation

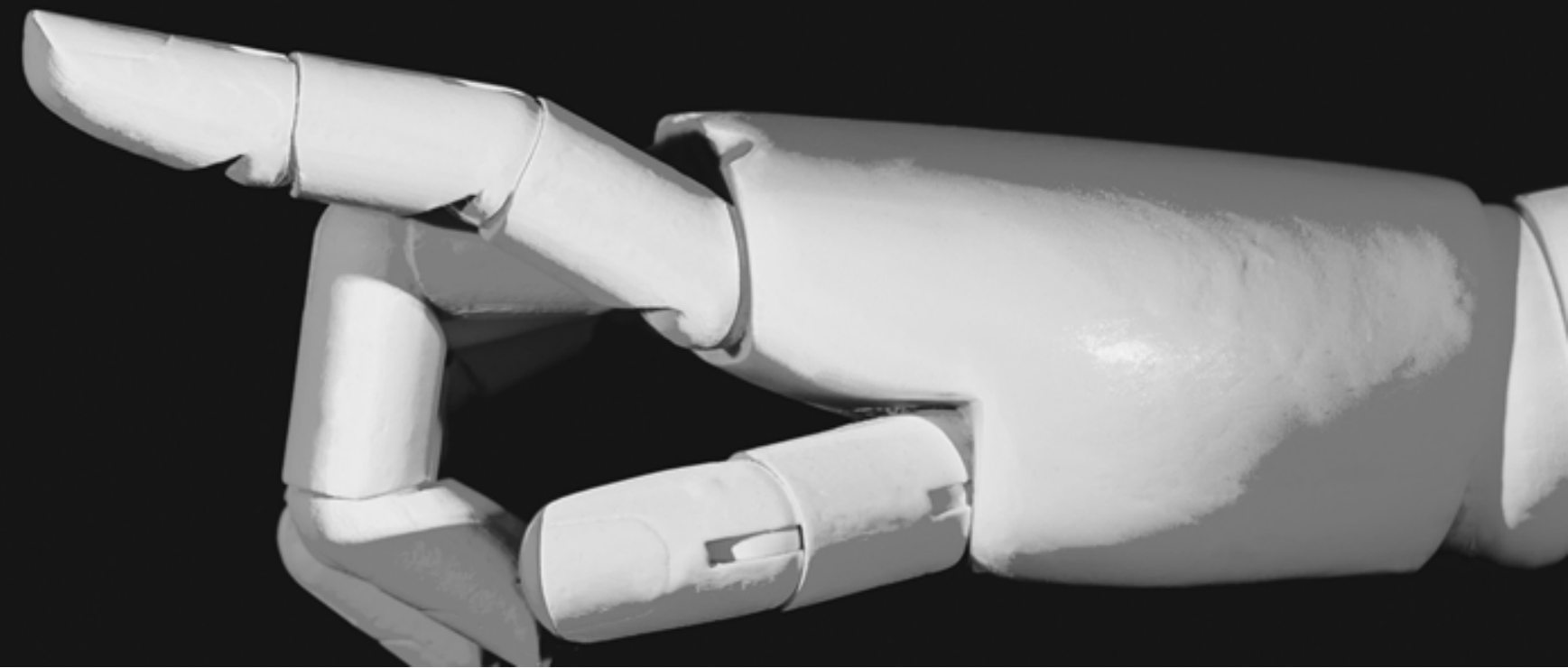
3

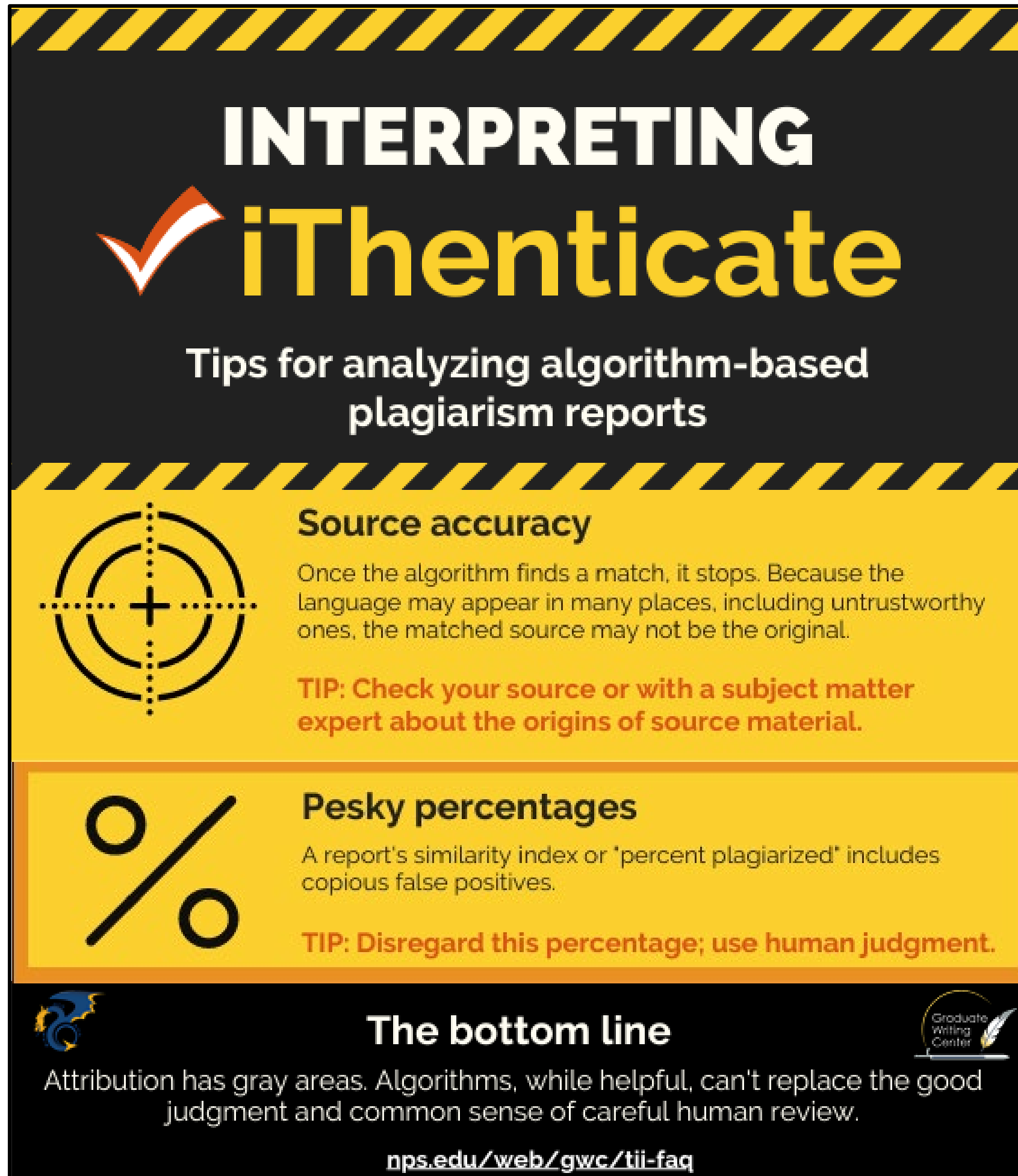
Guided use  
GWC appointments

4

Pedagogy shift  
Faculty buy-in

44





**INTERPRETING**  
**iThenticate**

Tips for analyzing algorithm-based plagiarism reports

**Source accuracy**  
Once the algorithm finds a match, it stops. Because the language may appear in many places, including untrustworthy ones, the matched source may not be the original.  
**TIP: Check your source or with a subject matter expert about the origins of source material.**

**Pesky percentages**  
A report's similarity index or "percent plagiarized" includes copious false positives.  
**TIP: Disregard this percentage; use human judgment.**

**The bottom line**  
Attribution has gray areas. Algorithms, while helpful, can't replace the good judgment and common sense of careful human review.  
[nps.edu/web/gwc/tii-faq](https://nps.edu/web/gwc/tii-faq)

Graduate Writing Center

## Community education

### HUMAN IN THE LOOP

“To shift campus culture from plagiarism compliance to wellness, a campus community needs to not only **share an understanding** of plagiarism – what it looks like, how it works, how to prevent it, how to pedagogically respond to it – but also share responsibility for that wellness as students, faculty, staff, and administrators.” Serviss (560)



**WHAT IS PLAGIARISM?**

**Plagiarism**  
The NPS Honor Code defines plagiarism as:  
"The use of words, information, insights, or ideas of another without crediting that person through proper citation."

**Source misuse**  
The Council of Writing Program Administrators defines source misuse as:  
"Carelessly or inadequately citing ideas and words borrowed from another source."

**NPS expectations**  
**Don't:** plagiarize  
**Don't:** misuse sources  
**Do:** use sources to your advantage  
**Do:** learn and apply citation conventions

**CAN YOU SPY MISSING ATTRIBUTION?**

This report is divided into six chapters. The first chapter is the introduction which provides background, explanation of the purpose of the research, the research questions, and the methodology used. This chapter also discusses the benefits gained from conducting the study and the limitations of this research project. The second chapter of this report contains a literature review of the theoretical foundation that forms the basis of the research.

**CAN'T I JUST USE A DETECTION SOFTWARE, LIKE TURNITIN?**

While detection software can identify some plagiarism or source misuse issues after the fact, the software cannot teach us how to use sources responsibly as we read and write.

**QUIZ TIME**

Is it plagiarism?

Can you pick the problems among the false positives in this Turnitin originality report? Click the icon below to test your interpretation.  
New to citation conventions? Complete the next module then come back to this quiz, or read [this advice](#) first.

**READING STRATEGICALLY**

To understand what sources mean for our research, and how they connect to our experiences, we must think critically about them as we read.

Click on the infographic to the left to learn the basics of thinking critically about what you're reading.

**ABOUT THIS LESSON**

**Students**  
This lesson equips you with knowledge and skills that will help you use sources responsibly and avoid plagiarism. Beyond this, however, the purpose of this lesson is to help you understand and respond to the sources you read so you may think and write more critically.

**Instructors**  
This lesson can be used to supplement or complement your coursework. Students can complete this lesson as it is, either independently or as a class. However, the [Graduate Writing Center](#) can also work with you to create content and activities tailored to your subject matter or class.

Contact us: [WritingCenter@nps.edu](mailto:WritingCenter@nps.edu)

# training

## For students

- *Foundations of Academic Writing*
- In-class workshops
- Online learning modules

## For writing coaches

- Philosophy orientation
- Continuing education and calibration
- For thesis office: coding SOPs\*

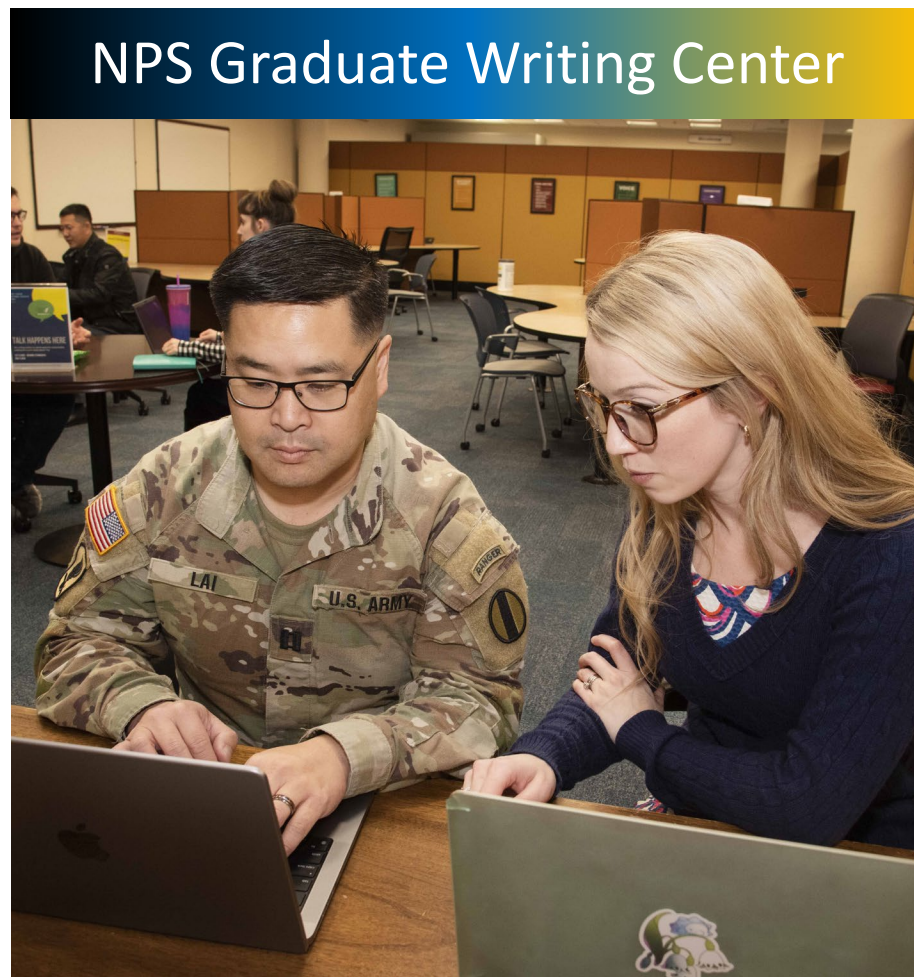
## For faculty

- In-class workshops
- Sponsored research reports
- Thesis advisor communication

"By operating in a team, a consistency of approach is ensured, and no one is tempted to minimise the seriousness of the problem."  
Barrett and Malcolm (43)

# Guided use

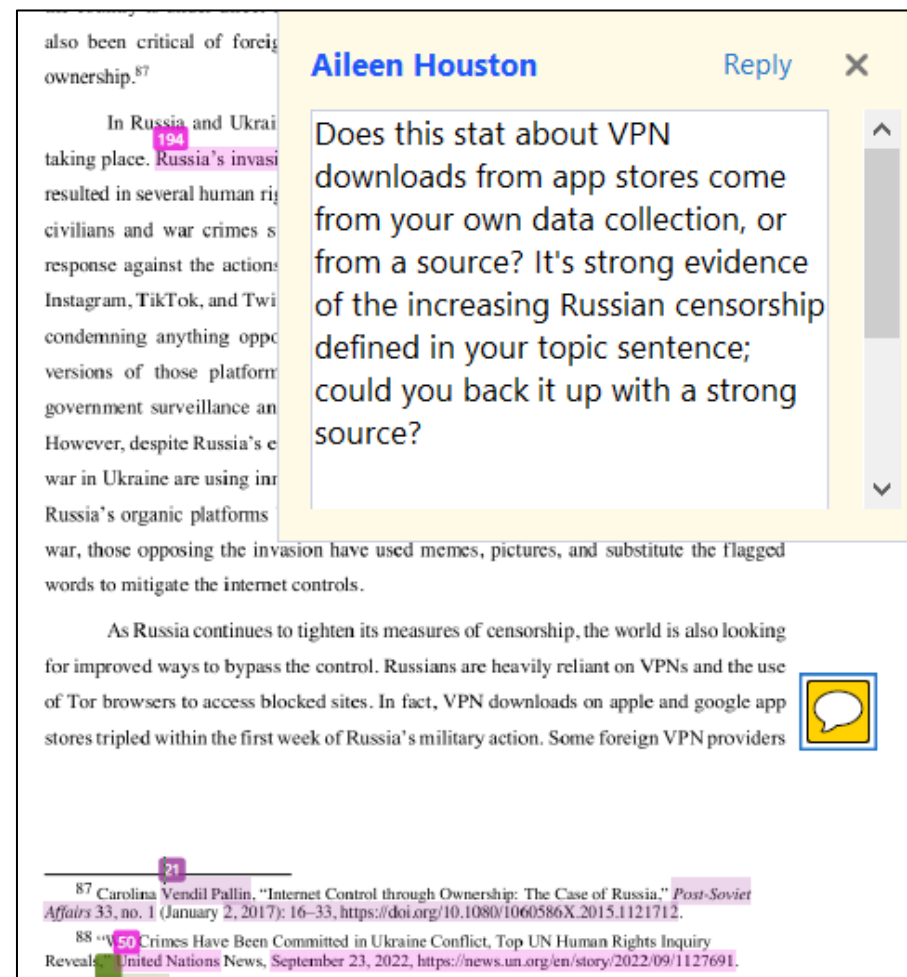
“Software detection tools appear to provide an objective measure of plagiarism but in practice they ... must be subject to academic interpretation and judgement, so **the way they are implemented plays a key role in their effectiveness.**” Graham-Matheson and Starr (10)



## WRITING CENTER

Early, individualized learning through nonpunitive coaching

(Davis and Carroll)



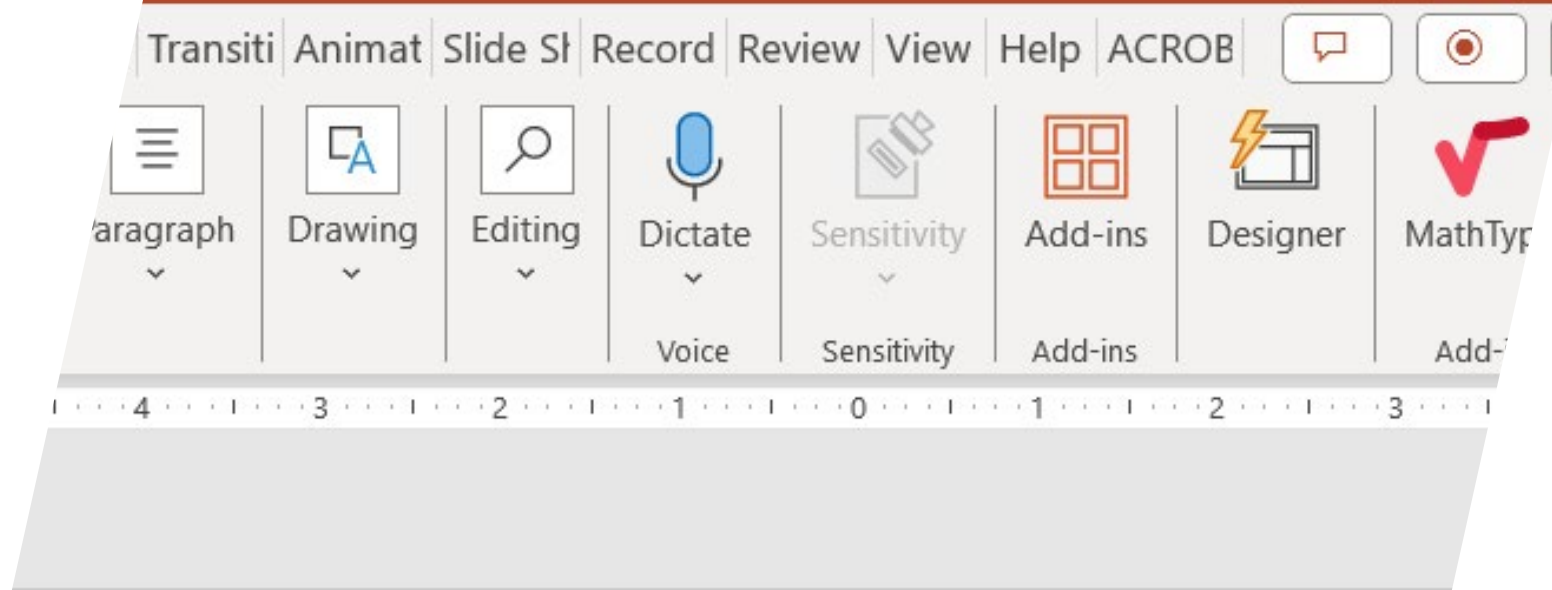
## ASYNC ANALYSIS

Easy access for students; controlled access for faculty and staff



## COMMUNITY

Reassurance through familiarization and comradery



# Pedagogy shift

## Class requirements

- In-class lessons
- Compulsory writing center appts

## Support from faculty and staff

- Remediation over punishment
- *Foundations* support from Dean of Students

### iThenticate Software

66 total words, only 6 words changed.  
 Clear plagiarism—one solution involves 1) signal phrase, 2) paraphrase, and 3) a brief quotation highlighting the original language. Needs cites!

Still plagiarism even though the writer uses her own words in both sentences. The signal phrase must also match the citation (right now, it doesn't).

45 total words; only 5 words changed.  
 Still plagiarism—the writer needs to paraphrase fully, changing the words and the structure/order in which they are presented, plus add the citation.

Beyond the word matching, this sentence uses specific information from a source without giving credit.

Not an issue.

relationships with the indigenous population. The CAPs retained the capability of artillery, air support, or reaction forces as the situation dictated, but their primary reliance was on the North Vietnamese Army and Vietcong, patrolling, relied on small arms weapons by invaluable intelligence drawn from the villagers themselves. Use of artillery was infrequent, which limited collateral damage to the farmer and his crops, and the CAPs were small in size but effective based on the Department of Defense report, which was based on a Hamlet Evaluation Report. Results: only one CAP was lost to the enemy.<sup>4</sup>

*Failure to Implement the Appropriate Strategy*

Although effective, the CAP strategy would have failed if the military had not recognized the dynamic nature of the insurgent situation in South Vietnam. The lack of CAPs to thwart it; they lacked an integrated strategy of combined action represented the growth of a CAP platoon rested at the tactical level. As a result, the CAPs lacked mutual support, many were isolated, and could not spread throughout South Vietnam would lead to its failure. Forces leadership never supported CAPs. General West

<sup>4</sup>Andrew ... 172-175.

48

From Dr. Kate Egerton's slides for NS3011

“A successful pedagogical intervention, meanwhile, requires the holistic efforts of an entire campus.” Serviss (561)



\*The methods Problem

PREDOMINANT USE OF SOURCE MATERIAL WITHIN THE CITATION		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Copying, cited but not marked as quotation	83	4.3	4.3	4.3
	Copying, cited and marked as quotation	793	41.5	41.5	45.8
	Patchwriting	306	16.0	16.0	61.8
	Paraphrasing	609	31.9	31.9	93.7
	Summarizing	120	6.3	6.9	100.0
<b>Total</b>		<b>1,911</b>	<b>100.0</b>	<b>100.0</b>	

THE CITATION PROJECT

Coding for source use:

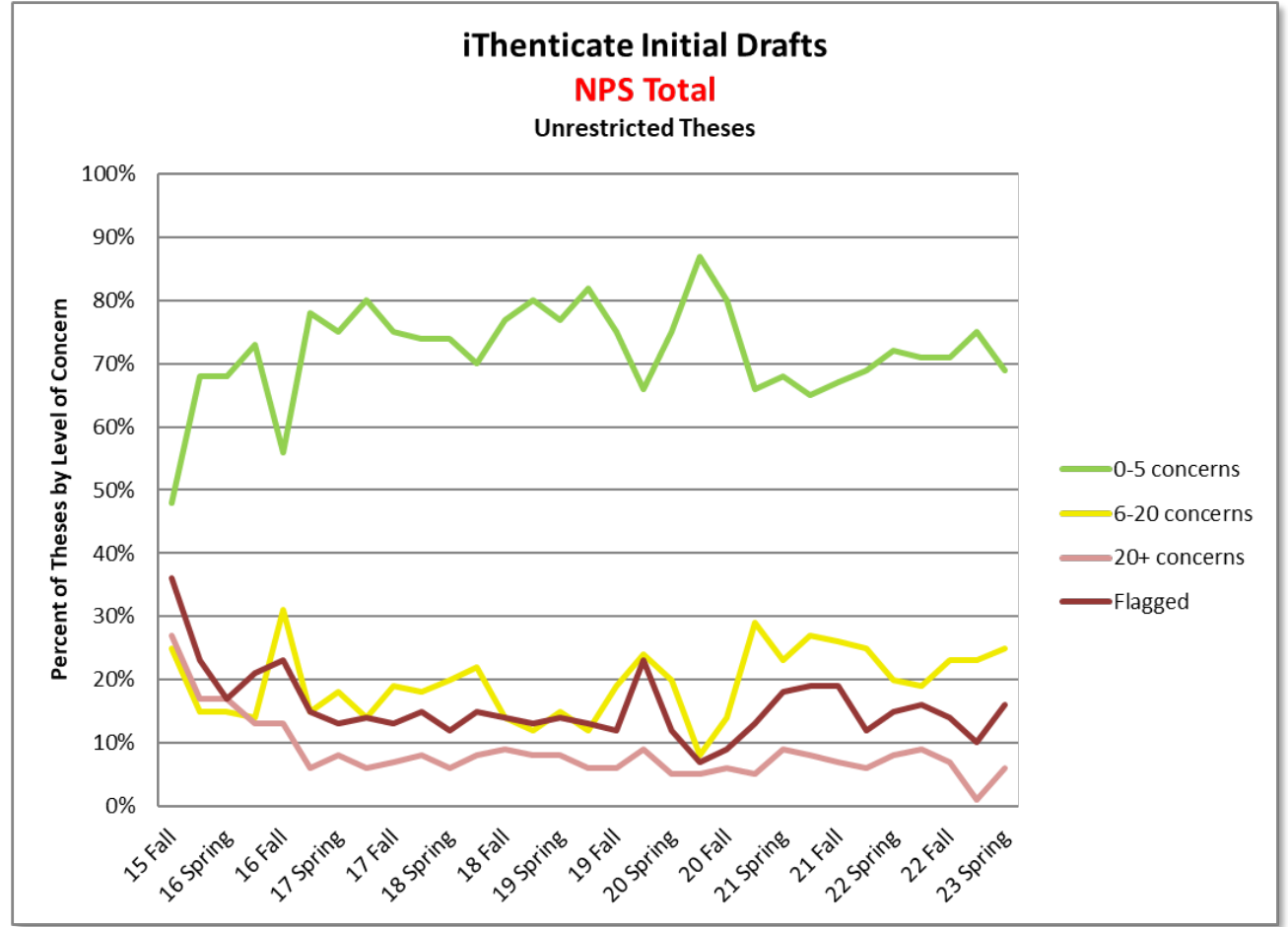
- Quality controlled
- Transparent
- Replicated (Jamieson)

THE PRESENT RESEARCH

Coding for concerns:

- Subjective
- Not fully elaborated
- Unreplicated

(Barrett and Malcolm; Davis and Carroll)





UP NEXT

# Use case: generative ai

50

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# THANK YOU



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NAVAL  
POSTGRADUATE  
SCHOOL

# Not-So-Artificial Intelligence: In the Classroom

Dr. Kate Egerton (contractor)  
Graduate Writing Center  
AULS 2024



# Generative AI in the PME writing classroom

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- First-quarter, pass/fail writing skills development courses
- Students share their experiences with generative AI tools and generate questions and conversation among peers
- Instructor models use cases from generative AI tools and invites students to critique performance, brainstorm use cases, and develop guardrails
- Students who opt to use generative AI in their writing process disclose their use in final products



## What students say

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- Many students express trepidation: “too nervous to use AI software with anything school/work related”
- Some students report that using generative AI tools helps them orient: “I have used these tools as a sanity check”
- Others use generative AI tools to accelerate ideation: “I was able to get through the brain blockade by asking ChatGPT to give me questions about certain topics”



# What I demonstrate

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- AudioPen—helping writers craft initial sentences from their own stream-of-consciousness speech
- ChatGPT—accelerating ideation at the beginning of a writing project; smoothing out sentences at the end
- Humata/Elicit—exploring how generative AI tools can help writers work within a specific range of documents *they*select





## What writers report: Getting started

---

- “Multiple AI tools were used in the creation of this paper. It is important to note that none of these tools were used in either the drafting or editing processes. The AI tool *Speechify* was used to aid in all reading. It uses AI technology to mimic human voice for reading PDF and websites out loud and to display the text similar to a karaoke display. The AI tool *Bard Experiment* was used to direct searches to specific, locally held documents for cross-referencing topic commonality. Last, the AI tool ChatGPT was used in conjunction with the NPS library search engine to find authors that have written on the paper topic.”



## What writers report: Outlining and research

---

- “ChatGPT 4 was used to help with outlining, finding external sources (using browse feature), understanding concepts, and reviewing writing with paramedic method.”
- “I used generative AI to conduct additional research by asking it to provide relevant authors and additional resources on my topic. I used these suggestions and found material from several authors through google and the Dudley Knox Library. I also asked generative AI to reframe my research question and provide me a list of related questions so I could better frame my topic. I used a combination of my original research question along with suggested words to better frame the problem.”



## What writers report: Sentences

---

- “I also used AI to revise a few sentences. However, I had to further revise those sentences to clearly showcase my intent and desired word selection.”
- “I utilized AI to translate particular sentences from [first language] to English, producing grammatically polished sentences and assisting me in selecting the most suitable wording.”



## What writers report: Evaluation

---

- “Reviewing writing with paramedic method”
- “ChatGPT was utilized to provide a critique of the submitted essay based on the instructions from the "NS3011 Research Paper Guidelines." The system broke down the requirements providing feedback as to whether or not criteria was met. Every time there was a significant change to the essay, the entire document was copied, pasted, and commanded for another critique based on the same criteria.”



## Reflections: Writers

---

- Want to use Generative AI tools to accelerate their efforts because they want to learn *more, more quickly*
- Anticipate that using Generative AI can lead to professional advantages beyond the classroom
- Select and combine tools to meet their specific needs, including addressing learning differences
- Value peer-led learning and community support



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