Promoting Student Engagement in Research During the Age of Generative Artificial Intelligence

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Overview

Engaging Students in Critical Thinking and Scholarly Research

Research Objective and Methods

Senior Thesis Course and Sequence: Sustainability, Health, and the Environment, Global Liberal Studies

Results and Next Steps

SIPRESS

"My desire to be well-informed is currently at odds with my desire to remain sane."

Critical Thinking and Scholarly Research

One of the central missions of higher education, and one of its main challenges in the current age of generative artificial intelligence (AI), is engaging students in critical thinking and scholarly research. The rapid evolution of AI and digital technology capabilities, exemplified by the contentious launch and updates of ChatGPT just this year, highlights the urgency of understanding related obstacles and opportunities in an academic context.

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Research objective

The instructional goal of this work is to explore and assess the strengths, limitations, challenges, and best practices of generative AI and digital technology use with regard to student research.

The current senior thesis sequence of the Global Liberal Studies (GLS) Sustainability, Health, and the Environment (SHE) concentration represents an illuminating case study for advancing these objectives.

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ABOUT GLOBAL LIBERAL STUDIES

Global, Interdisciplinary, and Engaged

Global Liberal Studies (GLS) is an interdisciplinary bachelor's degree grounded in spatial, temporal, and conceptual understandings of a highly interconnected world. It explores the critical and creative study of texts and contexts, the movement of ideas and peoples, the confluence of material cultures, cities, crossroads, and changing media of communication. This framing, drawing on philosophy, history, politics, literature, and the arts helps to uncover the historical legacies in which so many of our current crises are rooted and the dynamics of our shifting social imaginaries and geopolitical realities. It encourages intellectual curiosity and agility, the ability to think critically and expansively, make connections across disciplinary boundaries, embrace new perspectives, and transcend barriers.

NYU Madrid: Day in the Life of a GLS Student

GLS Graduate Placement Statistics

LINKS

Joint GLS/Global Public Health Major

GLS Minor

GLS Concentrations

Sustainability, Health, and the Environment

Sustainability, Health, and the Environment (SHE) explores relationships between human affairs and the biophysical planet, as well as inherent challenges and opportunities, in a multidisciplinary approach.

Photo credit: Briana Bazile

MORE ABOUT SHE

Research objective

The nature of the SHE thesis course inherently circumvents many inappropriate AI applications while encouraging acceptable practices and tool use to engage learners in research.

Thesis sequence

Sophomore year: Approaches	Junior year: Independent Research Seminar (online)	Senior year: Colloquium	Senior year: Thesis

This year-long sequence builds on prior research-design courses, including the Junior Independent Research and the Sophomore Approaches Seminars.

- The potentially daunting production of an article- or chapters-long thesis is broken down into more manageable, shorter assignments, which are regularly submitted as written drafts and presented orally for instructor feedback and peer review.
- The scholarly and reliable nature of source material is strongly emphasized, and students are required to support their arguments with correctly cited and referenced materials.
- Each of these strategies aligns with approaches endorsed by NYU Education Technology to counter improper AI use, and strongly contrasts with using ChatGPT to generate student essays.

Methods

Surveyed 11 seniors

Anonymously online

Anonymous SHE Thesis Survey - Promoting Student Engagement in Research During the Age of Generative Artificial Intelligence

One of the central missions of higher education, and one of its main challenges in the current age of generative artificial intelligence (AI), is **engaging students in critical thinking and scholarly research**. The rapid evolution of AI capabilities, exemplified by the contentious launch of ChatGPT and updates just months ago, highlights the urgency of understanding related obstacles and opportunities in an academic context.

The senior thesis sequence of the Global Liberal Studies (GLS) Sustainability, Health, and the Environment (SHE) concentration builds on prior research-design courses, including the Junior Independent Research and the Sophomore Approaches Seminars. The SHE thesis sequence circumvents many inappropriate AI applications while encouraging acceptable practices and tool use to **engage learners in research and get assistance with routine tasks.** These potentially free students to focus on what AI cannot, but learners can, do − **think critically**.

During this course, you learned about and were encouraged to use various tools and strategies. The goal of this survey is to **assess the strengths, limitations, challenges, and best practices of generative AI and other tool and strategy use in engaging you as students with research**. On a scale of 1 (lowest) to 5 (highest), please rate each element from 1 (lowest) -5 (highest) and provide additional pros, cons, and suggestions. Thank you for filling out the anonymous survey.

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Spell checker - rate from 1 to 5 in terms of **engaging learners in research, including by assisting with routine tasks and freeing up time for critical thinking**	
Grammar checker - rate from 1 to 5 in terms of **engaging learners in research, including by assisting with routine tasks and freeing up time for critical thinking**	
Generative Table of Contents - rate from 1 to 5 in terms of **engaging learners in research, including by assisting with routine tasks and freeing up time for critical thinking**	
Google Scholar - rate from 1 to 5 in terms of **engaging learners in research, including by assisting with routine tasks and freeing up time for critical thinking**	
Other research database - rate from 1 to 5 in terms of **engaging learners in research, including by assisting with routine tasks and freeing up time for critical thinking**	
Bibliographic program (Zotero) - rate from 1 to 5 in terms of **engaging learners in research, including by assisting with routine tasks and freeing up time for critical thinking**	
Paraphrasing program - rate from 1 to 5 in terms of **engaging learners in research, including by assisting with routine tasks and freeing up time for critical thinking**	
ChatGPT or similar - rate from 1 to 5 in terms of **engaging learners in research, including by assisting with routine tasks and freeing up time for critical thinking**	
Breaking down thesis components into shorter written assignments - rate from 1 to 5 in terms of **engaging learners in research**	
Peer feedback - rate from 1 to 5 in terms of **engaging learners in research**	
Instructor feedback - rate from 1 to 5 in terms of **engaging learners in research**	

Findings

On one hand students generally agreed that thesis production can greatly benefit from the appropriate use of spell and grammar checkers, Table of Contents generators, bibliographic programs, and other generative AI tools. These can take care of routine tasks and free students up to focus on what AI cannot, but learners can, do – think critically.

Even so, students often resisted such tools because of learning curves, bugs and glitches, costs, lack of training (resetting, getting articles), or other factors, and

Spell Checker	average: **3.45/5** (highest)
Grammar checker	average: **4.2/5** (highest)
Generative Table of Contents	average: **3.5/5** (highest)
Bibliographic program (Zotero)	average: **4.2/5** (highest)
Google Scholar	(**3.9/5**)
Other bibliographic databases	**3.7/5**
Paraphrasing Progam	**3/5, but 6/11 students did not use**
ChatGPT	**3.1, but 4/11 students did not use**

Findings

Breaking down large assignments into smaller parts	**3.7/5**
Instructor Feedback	**4/5**
Peer Feedback	**3.5/5**

Next steps

Possible NYU support of paid versions of Zotero and Grammarly

Expanding the survey to other course in the Global Liberal Studies Major

Keeping up with AI!

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Thanks!

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