60-Second SoTL

Episode 71 – Student Engagement with GenAI Brainstorming

Featured Article

Chia, Joanne, and Angela Frattarola. 2025. "A Design-Based Approach to Analysing Student Engagement with a GenAI-Enabled Brainstorming App." *Computers and Education: Artificial Intelligence* 9. https://doi-org.elon.idm.oclc.org/10.1016/j.caeai.2025.100468

Transcript

(Music)

0:10

Jessie L. Moore:
How can generative AI support student brainstorming *without* replacing thinking, voice, or agency? That's the focus of this week's 60-second SoTL from Elon University's Center for Engaged Learning. I'm Jessie Moore.

(Music)

0:31

In "A design-based approach to analysing student engagement with a GenAI-Enabled brainstorming app," Joanne Chia and Angela Frattarola examine student engagement with *Waai* [why] (spelled w-a-a-i), a GenAI-enabled brainstorming app created for a first-year interdisciplinary writing course at Nanyang Technological University in Singapore. Their open-access article appears in *Computers & Education: Artificial Intelligence*.

Unlike many AI writing assistants, Waai was intentionally designed not to generate text for students. Instead, it supports the early, often messy stages of writing—brainstorming, ideation, and sense-making—through a unidirectional chatbot aptly named Nudgy. Waii interfaced with ChatGpT-4.

1:24

Central to Waai's design is the idea that writing is a form of thinking. Nudgy's prompts are tied directly to assignment stages without allowing free prompting or text generation.

This controlled prompt engineering was intentional. The goal was to:

- Encourage divergent thinking rather than polished prose,
- Model ways of *ideating* rather than prescribing ideas,
- Reduce the risk of plagiarism or overreliance on AI output, and

- Support self-regulation, uncertainty, and iterative reflection.

1:57

Waai was piloted across two semesters with approximately 130 undergraduate students enrolled in a required writing module.

To understand student engagement with the app, the researchers collected multiple forms of data:

- Surveys completed by 31 students, combining Likert-scale and open-ended questions about usability, trust, and learning value;
- Focus group discussions with 11 students from diverse disciplines;
- App interaction data, documenting how students engaged with Nudgy's pre-engineered prompts; and
- Student writing artifacts and instructor feedback, used to triangulate students' self-reported experiences.

Qualitative data from surveys and focus groups were analyzed inductively using a discovery-oriented coding approach, with multiple researchers independently reviewing themes to strengthen credibility.

2:48

Across data sources, students reported five primary benefits of using the Nudgy chatbot:

First, students appreciated the pre-engineered prompts, especially because they mirrored the language and expectations of course rubrics. Many felt this made Waai more pedagogically relevant than tools like ChatGPT, used without the Waai interface.

Second, students consistently valued that Nudgy suggested topics to explore rather than providing answers. This distinction mattered deeply. Students described the chatbot as "probing" or "triggering" ideas while preserving ownership of their writing and human creativity.

Third, students found Nudgy especially helpful for broadening perspectives. Prompts that asked them to consider how people with different disciplinary perspectives—or even a Martian—might approach their topic helped students rethink assumptions and identify new angles for inquiry.

Fourth, Nudgy helped model the process of ideation itself. For students who struggled to find concepts or connections, seeing how the chatbot explained *why* certain ideas might matter gave them a template for thinking they could apply independently.

Finally, students valued Nudgy's constant availability, noting that it reduced their reliance on instructors and supported late-night or asynchronous work without judgment.

4:08

At the same time, students identified several **important limitations**.

Many struggled to determine which AI-generated ideas were most relevant, describing the feedback as expansive but difficult to “drill down.” Nudgy was seen as effective for *expansion* but less helpful for *concentration* or synthesis—especially when integrating multiple sources into an argument.

Students also expressed mistrust of GenAI, particularly around correctness, academic integrity, and what they called “Aigiarism.” Even when they valued AI for brainstorming, many worried that overuse could weaken creativity or dilute personal voice.

Crucially, students recognized—and often accepted—that GenAI cannot provide personal judgment or lived experience. These, they argued, had to remain human responsibilities.

4:59

Chia and Frattarola argue that Waai demonstrates a productive middle ground for GenAI in higher education: AI as a *thinking companion*, not a content generator. Their findings challenge narratives of AI as either a shortcut or a threat, instead positioning GenAI as pedagogically valuable when embedded in thoughtful instructional sequencing and human-AI collaboration.

For SoTL scholars, this study contributes:

- Empirical evidence on how design choices shape student engagement with GenAI,
- A model for aligning GenAI tools with process-oriented assessment, and
- A reframing of personalization as guided inquiry, not automation.

Ultimately, the authors suggest that GenAI’s greatest educational value may lie not in efficiency or accuracy, but in its ability to provoke reflection, uncertainty, and self-regulation—all essential conditions for deep learning.

To learn more about this study, visit our show notes for a link to the open access article.

6:01

(Music)

6:07

Jessie L. Moore:
Join us for our next episode of 60-second SoTL from Elon University’s Center for Engaged Learning for another snapshot of recent scholarship of teaching and learning. Learn more about the Center at www.CenterForEngagedLearning.org.

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