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Case Study Template

Up to a maximum of 1000 words.

Case study title	Building Students' Research Literacy and Public Engagement Skills with AI-Supported Reading and Writing Tools	Date	6-8-2026
Author(s)	Isabel Murillo David Morgan Adrian Costea Raushan Rizvi	Themes	Generative AI. Digital Education.
Subject area	AI	Curriculum Framework dimensions	Inspiring and innovative
Faculty	Faculty of Health and Life Sciences and DEO		

The Practice

Undergraduate biomedical science students frequently report difficulty engaging with primary research literature. Dense terminology, unfamiliar experimental contexts and complex citation networks often make it challenging to identify key arguments or ask meaningful questions while reading. Students also described feeling unsure about how to judge the relevance of citations or how to translate complex findings into accessible language.

To address these challenges, we developed two Microsoft Copilot Studio–built AI agents: CiteCritic and the Lay Summary Feedback Advisor. Both AI tools were designed to support student academic reading and writing without replacing students' intellectual work. The aim was not to automate comprehension or writing, but to scaffold students' engagement with research papers and strengthen their evaluative judgement while improving their public communication skills.

CiteCritic

CiteCritic helps students understand why authors include specific citations and how these references support the paper's main argument. Students enter a citation number from a research article, and, most importantly, formulate their own research questions. The tool explains what the cited paper says, why it was included and how it connects to the broader narrative. This encourages deeper engagement with citation networks and prepares students for dissertation level reading.

Lay Summary Feedback Advisor

The Lay Summary Feedback Advisor provides structured feedback on students' lay summaries, comparing them with the original paper. It highlights strengths and suggests targeted improvements without rewriting their work, enabling students to retain ownership of their writing while receiving targeted guidance on clarity, structure and audience awareness.



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The project involved 11 undergraduate students from Years 1–3 in CMM and BMS, supported by two postgraduate Student Partners. The evaluation combined:

- A pre-session focus group exploring existing challenges in reading scientific papers.
- Hands-on use of both AI tools.
- Production of two lay summaries (with and without AI support).
- Peer review of summaries.
- A post-session focus group reflecting on comprehension, trust and responsible AI use.

This mixed-methods design positioned students as both users and critical evaluators of generative AI, aligning with BILT's Generative AI theme and supporting the development of evaluative judgement.

Findings

A series of key findings were identified during the different phases of the project:

1. Students' pre-session challenges

Pre-session discussions revealed six recurring barriers to reading scientific literature: unfamiliar terminology, difficulty interpreting figures, uncertainty about experimental context and challenges understanding the relevance of citations, difficulty extracting the main message or argument and lack of confidence in asking the “right” questions.

Students recognised that publicly available AI tools (e.g., ChatGPT, Copilot) could help with comprehension but expressed concerns about accuracy, oversimplification and academic integrity.

2. Improved comprehension and reduced cognitive load

Students reported that CiteCritic helped them understand why authors selected specific citations:

“I never really think about the relevance of citations. Having that tool was really helpful for understanding why the author chose to include that piece of information.”

Another student highlighted the value of synthesising multiple sources:

“It's good for looking at different papers and getting an overall conclusion from a variety of sources.”

3. Enhanced public engagement skills

The Lay Summary Feedback Advisor supported students in refining clarity, structure and audience awareness. Students valued that the tool did not overwrite their work:

“I liked that it didn't just give me the answer... I learned quite a bit from it.”

“It told me the exact quotes of what I'd done and how I should change it.”

Students also recognised differences between their own writing and AI-generated structures:

“The style of writing is still maintained... whereas the AI structures were quite standard.”



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4. Increased evaluative judgement and critical AI use

Students became more adept at identifying inaccuracies, omissions and over-generalisation in AI outputs. They articulated strategies for validating AI-generated content against original sources and recognised the importance of maintaining authorship:

“It’s not rewriting our work. It’s just giving us suggestions. It’s not really any different to asking a tutor.”

5. Value of student partnership

Student Partners facilitated focus groups, creating space for more open and candid discussion. Participants were more willing to express concerns about trust, misuse and assessment of AI-supported work when speaking with peers rather than academics.

The Impact

The impact of the project at the levels of student and staff has been identified.

Impact on Students

Students reported positive impacts across several areas:

- 1. Greater confidence in navigating complex research papers*
- 2. Improved public communication skills, particularly in writing lay summaries*
- 3. Development of evaluative judgement, including critical assessment of AI accuracy and relevance*
- 4. More objective peer feedback, supported by structured comparison of human-written and AI-assisted summaries*
- 5. Clearer understanding of responsible AI use, reducing anxiety about “cheating” and reframing AI as a legitimate academic tool when used critically.*

Impact on Staff

The project provided staff with insight into how students currently use AI informally and how structured guidance can improve outcomes. It offered a scalable model for integrating AI-supported reading and writing tasks into life sciences curricula and has already been shared with colleagues across the Faculty of Health and Life Sciences and the wider University.

Impact on Curriculum

The project demonstrated that AI-supported academic literacy activities can be embedded into existing teaching practices, contributing to institutional conversations about responsible AI adoption and informed guidance for educators exploring similar innovations.



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Next Steps

These AI tools will be integrated into the second-year Biomedical Research, Employability and Enterprise Skills (BREES) unit in the School of Biochemistry and Biomedical Sciences in 2026–27. In BREES, students analyse a research paper as the foundation for a group grant proposal and produce a lay summary as part of their coursework, making it an ideal context for scaling the approach.

With continued collaboration between the School and the Digital Education Office, this AI model offers a practical and scalable approach to enhancing academic literacy and public engagement skills across STEM disciplines.

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