Case study: AI & thesis writing

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This case study examined how AI can support political science students in writing their bachelor’s theses by helping them structure their research process and manage stress.

A bachelor’s thesis in the Politics Unit at Tampere University is typically 20–30 pages long and serves as the final assignment for intermediate studies. It can be purely theoretical or include an empirical component.

The pilot workshop was held in February 2025, after students had completed three introductory lessons on thesis writing but before they presented their research plans in a seminar. The main goal was to explore how AI could be integrated into different stages of the thesis process and to gather feedback on its effectiveness.

The workshop focused on four key areas where AI could be beneficial:

1. **Formulating Research Questions** – Ensuring appropriate scope for bachelor’s thesis and refining focus.
2. **Clarifying the Phenomenon Under Study** – Encouraging discussions about key concepts.
3. **Structuring the Theoretical Framework** – Identifying essential questions for the theoretical framework.
4. **Developing an Analysis Plan** – Operationalizing variables, selecting data sources, and structuring the analysis.

The course learning outcomes focused on developing independent research skills, critical thinking, and methodological competency. AI was introduced as a supportive tool to help students refine their research focus, identify relevant sources, and structure their arguments more logically.

Student feedback highlighted AI’s ability to break down complex research tasks into smaller, more manageable steps, helping to reduce stress and procrastination. However, students also emphasized that AI should complement, not replace, traditional research methods, such as independent library work.

Implementing

The two-hour workshop was designed to be an interactive learning experience where students could actively experiment with AI tools. It was structured as follows:

1. **Introduction to AI in Academic Research**
    - Brief overview of AI’s capabilities and limitations in academic writing.
    - Discussion on ethical considerations and academic integrity.
2. **Hands-on Exercises**
    - Students used AI to generate and refine research questions.
    - AI-assisted brainstorming sessions for defining key concepts.
    - AI-based analysis plan structuring, focusing on data selection and methods.
3. **Guided Discussions**
    - Students shared their AI-generated results and compared them with traditional methods.

    - Reflection on the reliability and accuracy of AI-generated suggestions.
4. **Student Reflections and Feedback**
    - Discussion on how AI changed their research approach.
    - Consideration of AI as a supplementary tool rather than a primary source.

A key insight was that students needed some prior knowledge of their research topic to use AI effectively. Without foundational understanding, they struggled to evaluate AI-generated outputs critically.

Advantages

For Students:

- AI can break the thesis process into smaller, more manageable steps, making it feel less overwhelming.
- Many students find AI helpful for quickly generating ideas, streamlining initial research, and structuring their work.
- By using AI as a tutor or feedback provider, students can receive extensive feedback, which can help them strengthen their argumentation and critical thinking skills.

For Teachers:

- AI can support students in formulating well-structured research questions and theoretical frameworks, leading to higher-quality submissions.
- It provides students with preliminary insights, allowing teachers to focus more on deeper, higher-order discussions.
- Integrating AI discussions into coursework encourages responsible AI use, helping students move beyond simple copy-pasting of AI-generated content.

Key take-aways

Issues to Consider:

- AI-generated text is not always accurate or contextually relevant, making human oversight essential. Students need training to critically evaluate AI outputs and differentiate between useful insights and misleading information.
- AI should complement, not replace, traditional research methods such as engaging with academic literature.
- Some students expressed concerns about the stigma surrounding AI use, fearing their work might be perceived as less valuable. To address this, institutions should establish clear guidelines on AI usage in academic work to reduce uncertainty.

Recommendations:

- Courses should incorporate AI literacy components to teach students how to use AI responsibly. Instead of relying on AI to think for them, students should be encouraged to seek feedback and refine their own ideas.
- Universities should foster open discussions about the appropriate and ethical use of AI in academic settings.

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