

# Versions in the editing phase

Note! In the writing process, there are typically many editing rounds. Here you will see three iterations.

## EDITING PHASE, version 1

### **AI as a support in academic writing process**

**AI is getting more and more important in university world, especially in writing process.** A typical way to talk about AI in university context is very negative, meaning that the dangers and unethical use of AI are discussed a lot, which leads to banning the use of AI (Sullivan et al. 2023). But this is not the only truth, because if used correctly, AI can be very useful. AI is a tool, and when used right, it can also be a kind of partner that helps the writer in different stages of writing process, like brainstorming, using sources, drafting, producing text, editing and finishing. This also brings up important ethical questions, because if used wrong, AI can replace the writer's own thinking and eat their creativity. So it's important to think how AI should be used and in which stages it can be helpful in a way that supports learning and is ethical. In this essay we look at how AI can be used in different stages of writing. We also think about ethical questions related to the theme.

**To use AI in writing process in a smart way, first you need to understand how it works and what its limits are.** In this essay we focus on generative AI, especially applications based on large language models (like ChatGPT, Copilot and Gemini). We use the word AI to mean these applications. AIs are not aware of themselves (Lu et al., 2021), but language models work by predicting, based on huge data, what word probably comes next – so they don't really understand the content they read or produce (Zhang et al., 2023). Based on this, you could think that ideas produced by AI are not necessarily unique or deep, because they are based on existing knowledge and often repeated ways of writing (see however Guzik et al., 2023). That's why language models can hallucinate, meaning they make up wrong answers (e.g. Zhang et al. 2023; Wei et al., 2024), and they might not understand what the user wants. So in all stages of the process, the writer must always check what the AI has produced.

**In the beginning of writing process, AI can help for example by coming up with ideas and making early drafts and plans, which makes the process faster.** At the start, the writer can bounce ideas and possible focus of the text with AI. AI can offer different viewpoints and suggest questions the writer could deal with. AI can help especially when the writer has so-called blank page fear – a situation where they don't know what to start with (Buriak et al. 2023). Then it's easier to begin when you can start shaping an idea instead of trying to create something from nothing.

**In the information search phase, AI can make finding and reading sources more efficient. Not all AI apps are good for searching info because of hallucination.** But apps made for searching, like Keenious, can be used to support information search (JYU.fi, 2024). Even these apps shouldn't be trusted blindly, because they can have biases and gaps (source). They can still help to find missing parts in your own systematic search. Also, AI can help with reading, for example by making word lists and summaries, or finding main points or answers to specific questions (source). Still, the original text must always be read by the writer, because you can never be totally sure if AI's interpretation is correct.

**Later in the writing process, AI can support producing and editing text.** But the text must be at least partly written or edited by the writer, so it can be called their own. AI can help when the writer is making the first version of the text. For example, apps like ChatGPT can help build the structure or quickly produce short pieces of text that can be used as a base for further work (e.g. Buriak et al. 2023). You can also ask AI for help when you don't know how to express an idea clearly. Tools like ChatGPT can spot unclear sentence structures and suggest alternatives that might make the text clearer. In this way, AI can be like an add-on to a word processor that makes drafting faster. On the other hand, AI can help edit draft text that the writer has made themselves (source). At this stage, you can ask AI for feedback, which helps you continue working on your own text.

**Finally, AI can help in finishing the text, like proofreading and making the style consistent.** In the final stage, AI can give ideas to improve language and suggest corrections (e.g. Fitria 2021). You can also ask it to fix citations in the text and format the reference list. But it's important to notice that AI doesn't always understand the writer's personal style or purpose. In language checking, AI might produce clumsy expressions, anglicisms and grammar mistakes, so it can't be trusted fully either.

**So AI can be very useful in all stages of the process, but using AI in writing also brings many ethical questions that must be considered.** In many universities, using AI is banned or limited, even though many media sources say AI should be integrated into teaching and guided as part of assignments (Sullivan et al. 2023). This is because AI is a future skill (Sullivan et al. 2023). So it's important to teach how AI can be used to support learning, not for cheating. First, it's important to make sure the content produced by AI is correct and understandable. The text made by AI must also match your own thinking, meaning AI use must not replace your own thinking and doing. This is the difference between ethical use and cheating.

**Using AI also involves important data protection and copyright issues that must be considered.** For example, the user of AI is always responsible for having copyright or permission for the material they give to AI (JYU, 2023). They are also responsible for not violating others' data protection rights. It's also important to take care of your own data protection, meaning you shouldn't give your own personal data to AI that might save and share it. It's also good to think if you want to give your unpublished text to an app that uses conversations to train AI further. For example, the Copilot used with University of Jyväskylä login doesn't use user input for anything and the data stays safe on university servers. That's why Copilot can be used a bit more safely also with private information.

**The human is always responsible for their work, even if they use AI to support the process.** AI can't be the author of the text, because it can't take responsibility. It's important to make sure the writer's own thinking guides the process all the time. AI use must also be reported, so the process is transparent (JYU, 2023). Also, it's important to notice that presenting AI-generated text as your own is cheating, even if you report it properly. Being critical with AI use and transparent in reporting are especially important in academic writing, where originality and critical thinking of the writer are key. That's why it's important to use AI as a tool, not as a replacement for your own work.

**In university student context, it also matters what harms and supports learning, because the main goal of university education is to teach expertise in your field and skills needed in working life.** At best, AI makes learning faster and deeper, but at worst, it leads to cheating so that you don't learn anything yourself. This is also a problem because cheating with AI is harder to detect than plagiarism (Sullivan et al. 2023). That's why the student's responsibility for their own learning is more and more important. Writing is thinking and learning, so if you skip the pain of creating, you don't learn either. Also, critical thinking disappears when the goal is just to get a good grade and not to understand the topic (Sullivan et al. 2023).

**Ethical use of AI in writing process offers both possibilities and challenges, and its potential to improve writing is significant.** AI is a useful tool in writing process, but its use must be critical. The writer must understand that AI can't replace their own thinking or ability to analyze and interpret things. AI is here to stay in society, so it's also an essential skill for future – and even current – working life. That's why AI must be learned, which means it must also be taught. This can't happen if AI use is banned. Instead, teaching should focus on critical thinking and ethical use of AI and reflecting on it.

Guzik, E. E., Byrge, C., & Gilde, C. (2023). The originality of machines: AI takes the Torrance Test. *Journal of Creativity*, 33(3), 100065. <https://doi.org/10.1016/j.yjoc.2023.100065>

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## EDITING PHASE, version 2 (shortened to fit the word limit)

### Artificial Intelligence as Support in the Academic Writing Process

**Artificial intelligence is playing an increasingly important role in the university world, especially in writing.** In academic contexts, AI is often discussed in a negative tone. The focus is on risks and unethical use, such as cheating and weakened learning, which can lead to banning AI use (Sullivan et al., 2023). However, when used correctly, AI can be very useful. It can act like a writing partner, supporting the writer in different stages of the process—brainstorming, using sources, drafting, producing, editing, and finalizing. On the other hand, if misused, AI can replace the writer’s own thinking and suppress creativity. This essay looks at how AI can support writing and how it can be used ethically and in ways that support learning.

**To use AI wisely in writing, it’s important to understand how it works and what its limits are.** This essay focuses on generative AI, especially applications based on large language models (e.g., ChatGPT and Copilot), referred to here as AI. These AIs are not self-aware or capable of understanding meaning (Lu et al., 2021); they predict the next word based on massive datasets (Zhang et al., 2023). Because of this, they can hallucinate—generate incorrect answers (e.g., Zhang et al., 2023; Wei et al., 2024). So, ideas from AI may not be unique or knowledge-based, as they rely on common writing patterns (see also Guzik et al., 2023). At every stage, the writer must check what AI produces. Next, we look at the stages of the writing process.

**In the early stages, AI can help with idea generation and information search.** At the beginning, AI can help develop ideas, narrow the topic, and create early drafts and plans. It can offer new perspectives and questions. AI is especially helpful when the writer faces “blank page syndrome”—starting is easier when you can begin shaping an idea instead of starting from nothing (Buriak et al., 2023). In searching for information, AI can help find and read sources more efficiently. AI tools are not suitable for primary information retrieval due to hallucinations, gaps, and biases, but tools designed for search, like Keenious, can support the process (JYU.fi, 2024a). AI can also help with reading by creating word lists and summaries (source). Still, the original text must always be read by the writer, since AI’s interpretation can’t be fully trusted.

**In later stages, AI can support producing, editing, and finalizing text.** However, the writer must at least partly write or edit the text themselves for it to be considered their own. AI can help build structure and idea sentences (e.g., Buriak et al., 2023). It can identify unclear sentence structures and suggest edits—like an add-on to a word processor that speeds up drafting. AI can also help revise draft text written by the author (source). At this stage, AI can be asked for feedback, which the writer can use to continue refining the text. Finally, AI can help with finishing: improving language, suggesting corrections (e.g., Fitria, 2021), and fixing citations and reference lists. Even with corrections, the writer must stay critical, since AI doesn’t always understand the writer’s style or intent, and its language suggestions may include clumsy phrases, anglicisms, or grammar mistakes.

**AI can be useful in all stages of the writing process, but its use also raises important ethical questions.** In many universities, AI use is banned or restricted, although many media sources argue it should be integrated into teaching and assignments, since AI is a future skill (Sullivan et al., 2023). For example, the University of Jyväskylä (JYU, 2023) allows AI use, but teachers may prohibit it for justified reasons. AI may not be used as a scientific source, and students are always responsible for the content they submit and for reporting their use of AI (JYU, 2023).

**Perhaps the most important aspect of ethical use is avoiding academic dishonesty.** It's essential to teach how AI can support learning—not be used for cheating. First, it's important to ensure that AI-generated content is accurate and understandable. The text must also reflect the writer's own thinking—AI should not replace personal thought or effort. This is the difference between ethical use and dishonesty.

**AI use also involves important data protection and copyright issues.** The user is always responsible for having rights or permission for the material they input into AI (JYU, 2023). They must also avoid violating others' privacy rights. Personal data should not be entered into AI systems that may store or share it. From a copyright perspective, unpublished texts should not be submitted to systems that use conversations for further training. For example, the Copilot available through Jyväskylä University credentials does not use user input and keeps data secure on university servers.

**Humans are always responsible for their work, even when using AI as support.** AI cannot be the author of a text—it cannot take responsibility. Agency and responsibility remain with the human. AI use must also be reported to ensure transparency (JYU, 2023). Writers must explain which tool was used, how it was used, and for what purpose, and how the outputs were evaluated and further developed. Presenting AI-generated text under one's own name is academic dishonesty, even if properly reported. Critical thinking and transparency are essential in academic writing, where originality and independent thought are central.

**In university, it also matters what supports or harms learning, since that is the primary goal of higher education.** At best, AI speeds up and deepens learning, but at worst, it leads to dishonesty and prevents learning. If AI helps revise a text, the writer may learn something about writing. But if AI produces the entire text, the “writer” learns nothing. AI can also be problematic in universities because AI-generated cheating is harder to detect than plagiarism (Sullivan et al., 2023). This increases the student's responsibility for their own learning. Writing is thinking and learning—it requires effort. Critical thinking may also disappear if the goal is only a good grade, not understanding the content (Sullivan et al., 2023). Critical thinking is also needed to evaluate AI's usefulness: sometimes using AI is more work than doing it yourself.

**Ethical use of AI in writing is both a challenge and an opportunity, and it should be approached critically.** It's important to understand that AI cannot replace personal thinking or analytical skills, and should be used strategically and ethically. AI is developing fast, and it's already a skill needed in working life. Everyone should at least understand how AI works. That's why AI should not be banned in universities—it should be taught. The primary responsibility for ethical AI use lies with the student, but institutions also have a role. For example, the University of Jyväskylä offers a course that helps

students learn to use AI, and the university (JYU, 2023) has guidelines for ethical AI use in studies. In our view, teaching should focus on critical thinking and ethical use of AI—and on reflecting on these issues.

Guzik, E. E., Byrge, C., & Gilde, C. (2023). The originality of machines: AI takes the Torrance Test. *Journal of Creativity*, 33(3), 100065. <https://doi.org/10.1016/j.yjoc.2023.100065>

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