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**The Future of Writing Centers in Europe –
looking back and forward**

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AI-supported writing comes with several advantages but may also be a cause for deskilling cognitive abilities. In their survey among university students, Hoffmann, Grünebaum, and Schmidt (2024) found a connection between strong writing skills and a more reflected AI use. Based on these findings, this article will answer the question of how participants in the survey address fears of deskilling cognitive abilities and in what way these fears relate to a strong fondness for writing in their own words. A mixed methods approach shows that students who express fears of deskilling tend to have a higher writing proficiency and fondness of their own style. The discussion addresses the potential role of writing centers in preventing deskilling. Gastherausgebende: Lawrence Cleary, Franziska Liebetanz, Anja Poloubotko

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AI and the Brain: Reflections on Writing Skills in the Light of AI

Helena Grünebaum

Abstract

AI-supported writing comes with several advantages but may also be a cause for deskilling cognitive abilities. In their survey among university students, Hoffmann, Grünebaum, and Schmidt (2024) found a connection between strong writing skills and a more reflected AI use. Based on these findings, this article will answer the question of how participants in the survey address fears of deskilling cognitive abilities and in what way these fears relate to a strong fondness for writing in their own words. A mixed methods approach shows that students who express fears of deskilling tend to have a higher writing proficiency and fondness of their own style. The discussion addresses the potential role of writing centers in preventing deskilling.

Introduction

During the relatively short time that Large Language Models (LLMs) like ChatGPT have been on the market and available to a broad public now (roughly 2 years), the quality of their output has increased vastly. University students have been using the tools as support for their academic writing tasks since the beginning, as studies show (Unterpertinger 2024). The use cases range from brushing up grammar and spelling to having whole chapters written by AI. While in the past, LLMs were still facing some hard-to-miss problems like frequent hallucinations, inadequate sources, or linguistic inconsistency (Bender et al. 2021), today, roughly two years after their appearance, many of these issues have been addressed, which makes it increasingly harder to detect AI-generated text.

It seems that AI's writing skills are improving while our own competences are facing potential deterioration with increasing AI use. Rafner et al. (2021: 26) call this process *deskilling*: "generally, it describes the loss of professional skills due to technological or work practice changes". Deskilling is by no means a solely AI-related issue; throughout history, it has occurred at many points of industrial or technological progress. Unlike earlier occurrences, though, Rafner et al. (2021: 27) believe that deskilling through AI might be a special case since it will most likely affect every occupation to some extent in the near future.

In their article, Rafner et al. (2021) choose examples from economic and medical fields to demonstrate how professionals might be affected by deskilling. In their *Statement on Challenges Posed by Artificial Intelligence*, the German Ethics Council also refers to the dan-

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gers of deskilling in various occupations (Deutscher Ethikrat 2023). Although it includes advice for the educational sector, the Ethics Council does not specifically address higher education, which Reinmann (2023) criticizes in her article. She argues that universities are especially threatened by deskilling because even though AI was originally supposed to aid in executing less demanding activities and allowing humans to focus on more complex tasks, the tools now interfere in those complex tasks, too.

“KI [kann] nun auch in Domänen eingesetzt werden [...], die bislang dem Menschen vorbehalten schienen: kreative, auf Wissensgenerierung abzielende Tätigkeiten wie zum Beispiel das Sammeln von Ideen, die Entwicklung von Problemlösungen, die Konzeption von Forschungsdesigns, die Erarbeitung von Erhebungsinstrumenten oder das Schreiben wissenschaftlicher Texte.” (Reinmann 2023:7).

Particularly students who are still learning all these skills can be intimidated by a tool that can (for the moment) execute such tasks (seemingly) better than they can. Consequently, they might overly rely on the tools (Rafner et al. 2021: 27) in order to meet the high expectations that they are facing.

To counteract the heavy reliance on AI-generated knowledge, Rafner et al. (2021: 30) suggest three approaches: education, strengthening self-reliance, and encouraging collaboration with AI rather than competition. The last approach in particular requires a great amount of skill, which humans have to learn in often long and hard processes. This is where AI tools bring up another problem: Even if they only executed less cognitively demanding tasks (e.g. formulating sentences in a certain style), these tasks might be important steps within the learning process, necessary to reach higher levels of proficiency. So, if students outsourced these necessary steps in their writing process, would they still be able to reach a skill level that allows them to critically question AI-generated outputs in a collaborative setting?

As a matter of fact, many students use AI tools as support for various tasks in their academic writing processes. This does not mean, however, that they use the tools in a completely unreflected way (Hoffmann/Grünebaum/Schmidt 2024). In my article, I will continue from Hoffmann, Grünebaum, and Schmidt's analysis of a survey among German students on their use of AI writing tools in academic writing processes. Hoffmann, Grünebaum, and Schmidt found a positive correlation between a more reflected use of AI tools and higher writing proficiency. One question that remained unanswered in their article is why a strong fondness of being able to write in your own words seems to be the strongest indicator for reflected AI use. Following up on this question, I will analyze freeform answers collected in Hoffmann, Grünebaum, and Schmidt's survey that contain topics of deskilling of writing-related skills. I will evaluate whether these critical comments match a high writing proficiency and a strong fondness of using your own words in writing and take a closer look at the fears that the students express.

Writing-Based Competences

Writing is not one self-contained competence but requires many different skills. Especially academic writing combines a number of cognitive processes that students (ideally) develop throughout the process of learning to write, among them critical reflection, generating knowledge through writing, understanding creative aspects of writing, and developing their own style or voice in writing.

The ability to critically reflect on the information we read in texts, no matter who (or what) wrote them, is an essential skill, especially when collaborating with AI tools. In order to create a *human in the loop* constellation, where humans are the final instance in a decision process (Rafner et al. 2021: 27 f), humans need to be able to assess the quality of the information given in an AI-generated text. While some people assign AI universal and unbiased knowledge (Bender et al. 2021), one of AI's greatest issues is bias. Even though the colossal amount of data that is being used to train LLMs might give the impression that all kinds of topics and perspectives are being represented equally, the statistical calculations reproduce what is most represented on the internet. And since certain websites that are highly represented in the data pool feature certain stereotypes, these stereotypes are frequently being reproduced by AI, which leads to distorted perspectives, underrepresentation of minorities, and avoidance of sensitive topics instead of objective discussions (Bender et al. 2021: 617). Critical reflection is therefore essential when writing with AI tools.

Writing itself may present a valuable tool in learning the skill of critical reflection. Writing has the potential to be more than a medium for documentation and passing on knowledge; it can be a tool for generating new knowledge (see Ortner 2000; Bereiter and Scardamalia 1987). Some researchers consider this form of epistemic-heuristic writing the highest art of writing that can be achieved (Ortner 2000). Others already see forms of knowledge generation in student writing (Buck/Limburg 2024). Writing a text like a term paper is a way for students to not only learn how to write but also to learn the information they process in the text. The knowledge they generate may not (yet) be innovative to the world, but it is new to them and instead of just reading about a topic, they learn to draw connections through writing. Thinking through writing is an essential skill in strengthening one's knowledge.

While creativity might not be considered a skill per se, it is an aspect of writing that becomes more prominent with practice. Students often have a hard time finding aspects of creativity in academic writing because of the constraints in form and content that they need to stick to. It requires a lot of creativity, however, to find a precise topic and compose a complex text from a vast amount of sources, opinions, and positions within a discourse. Further, creativity can also be seen when writers develop a personal style. Elbow (1998: 281–291) describes this style as a writer's voice. He argues that words that fit the writer have much more power than words that only fit the reader. When someone writes in their own voice, the text comes alive and represents the writer's true intentions. Even though AI tools are able to imitate certain writing styles, they may never be able to induce the emotions behind a text. Being able to express yourself through text and being proud of what you created in your own

texts could potentially strengthen people's confidence in working with and criticizing AI-generated text, as Rafner et al. (2021: 30) suggest.

As Reinmann (2023) states, deskilling can be understood as both the loss of skills due to a lack of practice, and the loss of a skill within a society when people are no longer required to build up the skill in the first place. The above-mentioned skills could all potentially get lost or replaced if AI takes over the writing process completely or in parts. Some students, however, are aware of this threat, as the data from Hoffmann, Grünebaum, and Schmidt's (2024) survey show. In the next chapter I will summarize the original study and their results and pick up some questions they put up for discussion. Afterwards I will analyze the participants' comments under aspects of deskilling and the loss of abilities through AI use.

Previous Research

In August and September 2023, the Writing Center at Goethe-University Frankfurt (Germany), conducted a Germany-wide survey on the use of AI writing tools amongst university students¹. The survey produced 3,997 valid questionnaires contributing to the analysis. Their aim was to gain insights into frequency, purposes, and reasons for using tools like ChatGPT, as well as the students' personal attitudes toward such tools. One major focus in their analysis was the correlation between writing skills and AI use. Their hypothesis was that students who already possess strong writing skills use AI assistance in a more reflected, focused, and restricted manner than students who have not (yet) gained that level of competence.

In order to assess the participants' writing skills, they used Golombek et al.'s (2018) questionnaire for assessing self-efficacy for self-regulation in academic writing and reduced it to ten items that still represented the three categories: planning, including task analysis and self-motivation; execution, including self-control and self-reflection; and reflection, including self-assessment and self-reaction (Hoffmann/Grünebaum/Schmidt 2024). Additionally, they created two items to ask for the participants' attitude towards their own writing: *I feel like I have my own style in academic writing* and *It is important to me to write texts in my own words*. Answers were given on a six-point Likert scale ranging from *completely applies* (6) to *does not apply at all* (1).

The results show that a higher level of writing competence indeed suggests a more reflected and deliberate use of AI tools among the participants. Surprisingly, the two added items for style and writing in their own words showed the strongest correlation with the students' reasons and purposes for AI use, indicating that students' identification with their writing has an influence on their use of AI tools. Based on these findings, Hoffmann, Grünebaum, and Schmidt pose the question why the two items stand out so much compared to the

¹ Here and in the following, all references to the Frankfurt survey are based on Hoffmann/Grünebaum/Schmidt (2024).

collection of items for self-regulation of the writing process, and suggest looking for an answer in the four freeform questions given in the survey.

For my analysis, I will modify the question and ask: How do participants in the survey address fears of deskilling cognitive abilities and in what way do these fears relate to a strong fondness for writing in their own words? The basis for my analysis will be the last question in the survey, which left room for the participants to comment on topics of their own choice: *Is there anything else you would like to say about AI writing tools?*

The Topic of Deskilling in Students' Comments

In order to approach the question stated above, I filtered the data received from the survey by two factors: Firstly, I selected only the participants who had answered the last question in the questionnaire (*Is there anything else you would like to say about AI writing tools?*). This reduced the dataset to 715 participants. Secondly, I used Kuckartz's (2022) method of inductive coding to categorize the comments that remained. Among the categories, a pattern including comments on fears and worries in connection with AI use and the loss of cognitive abilities emerged. This factor brought me down to a number of 87 participants which I used (1) for a quantitative analysis to compare them to the results from the complete dataset and (2) to analyze them further using Kuckartz's (2022) qualitative content analysis.

Quantitative Analysis:

In general, the selected group rates their writing skills slightly higher than the whole dataset. On the scale from 1 to 6, they score a median of 4.72 in self-regulation of the writing process compared to 4.37 for the total. Also, their assessments of the items for style and formulating in their own words rank significantly higher than the total, with a score of 4.64 in the selected group compared to 4.31 in the total dataset for style and a score of 5.50 for the selected group compared to 4.83 in the total dataset for formulating.

Among the 87 selected participants, 21 indicate that they have used ChatGPT before, which is a significantly smaller proportion in this group with 24.1% compared to 66% among the complete dataset. Initially, I intended to run the same analyses that Hoffmann, Grünebaum, and Schmidt did with the complete set before, but since the number of people in this group who have used ChatGPT before is so small, looking at reasons and purposes of AI use among this group would not produce useful data. Instead, I looked at reasons for not using AI, which at least offers me a number of 66 participants. The most selected reason for not using AI is not seeing the need for it (73.8%). This position is directly followed by concerns about using AI (63.1%). Participants were being offered the option to explain these concerns in one of the following freeform questions: What do you find particularly difficult about using AI writing tools for university writing? Their answers cover the issue of quality because their expectations have not been met. Additionally, they explain that using AI tools did not feel right to them.

In a last step, as suggested in Hoffmann, Grünebaum, and Schmidt (2024), I looked at some demographic data collected in the survey to find reasons for their critical attitude towards AI. My first approach was to compare the distribution of gender among the selected group and the whole dataset, which does not differ significantly (complete data: 38.9% m, 58.7% f, 2.4% d; filtered group: 35.6% m, 62.1% f, 2.3% d). Another option was to assume that the selected group consisted of more people who have worked in a writing center environment before and would therefore be familiar with theories on the value of writing. But again, with only 5 participants (5.7%) with a writing center background among the selected group, the percentage does not differ significantly from the whole set with 3.8%.

The last item that appeared useful in this analysis was the participants' study program. Within the whole dataset, 37.7% of participants study in the social sciences, 34% in the natural sciences and 30% in the humanities (Hoffmann/Grünebaum/Schmidt 2024: 241). Among the selected group of people who express concern about deskilling, only 34.5% study in the social sciences, 32.2% in the natural sciences, and 44.8% study in the humanities. Humanities clearly being the most represented field among the selected group might indicate that the participants who worry about deskilling tend to study in rather writing intensive and potentially text-focused programs. This might lead to stronger writing skills due to more experience. This supports the assumption that stronger writing skills and cherishing the ability to make choices of your own in writing results in a more critical view on AI use and seeing the potential dangers that come with it.

Qualitative Analysis:

After a quantitative check-up of the narrowed group of participants who mentioned some form of fear of losing cognitive abilities, I divided the comments into further sub-categories. Again, these were based on inductive topics found in the data. The number in parentheses is the number of codings for this category (mind that one comment can include multiple categories):

- Loss of thinking for yourself (35)
- Loss of learning (13)
 - Unlearn to write/not learn to write (14)
- Loss of your own style (15)
 - Loss of your writing-voice (1)
- Loss of writing for yourself (12)
- Loss of independence (15)
- Loss of creativity (8)

In order to understand what exactly the participants worry about when thinking about using AI, I will present selected examples from each category and discuss how the participants describe their thoughts on deskilling connected with AI use².

Loss of thinking for yourself

Within the selected samples, the aspect of thinking for yourself and the fear of losing it when using AI too much is most prominent. The following example shows that this participant is aware of the connection between thinking and writing. They describe how crucial the connection is but at the same time, how that does not mean a complete abstinence from AI:

“Writing is thinking. It is perhaps the most critical part of thinking. Taking writing away is likely going to cause a deficit in critical-thinking skills over time. I am very against AI tools as writing assistants for LEARNING and SCIENTIFIC purposes. For more repetitive and standard processes, I am okay with AI writing tools, e.g. for standard news writing, voicing your opinions, contacting people officially, etc. Once you know how to write for a certain purpose that is external, AI tools are going to offer a huge productivity boost. [...]. However, if the purpose of writing is to refine your thoughts and communicate something only you know inside your head, then we are doing ourselves a disservice over time by using AI tools to replace our thinking. [...]”

With their statement *writing is thinking*, the respondent describes an effect that can be compared to Ortner's epistemic-heuristic writing, which he defines as finding clearance through writing, both for oneself and for others (Ortner 2000: 11). The respondent sees a connection between being able to write well and being able to think critically, which matches with Hoffmann, Grünebaum, and Schmidt's previous findings. Then, the respondent describes different scenarios for where they could accept AI support. They describe news writing, voicing your opinion, and contacting people officially as *standard processes*, which is a questionable classification. On the opposite end, they see refining your thoughts and communicating your own ideas as essential tasks that should not be done by AI. While their idea of essential writing tasks should be revised, they generally understand the importance of writing as a way of developing cognitive abilities.

Another respondent emphasizes the importance of being taught how to write and think critically. Thinking through writing is not a skill that comes naturally but that needs practice and instruction (Ortner 2000). Additionally, they mention that we need those skills in order to critically reflect on AI texts:

² Comments marked with a T were translated from German by the author. Communicative intentions were kept with respect to English grammar. The original comments are attached in the appendix.

T: "Writing and understanding texts by yourself should absolutely continue to be taught and practiced, or we will not be able to assess the quality of the AI outputs. So, no either or, but both are important: AI and writing and thinking for yourself."

This participant understands that AI will be part of our daily lives, but that we still need to build a set of skills on our own. A *human-in-the-loop* model would probably match their idea of working with AI tools. Both examples show that the participants see a need for developing cognitive abilities while also learning to use AI tools.

Loss of learning

Closely connected to thinking through writing is learning through writing (Buck/Limburg 2023: 78f). Participants describe that they learn more through writing tasks than through multiple-choice exams. In the following example, the participant reflects on their own experiences with term papers and exams. In this comment, the reader can watch the participant think actively while writing:

T: "I think term papers are a great way to learn. I have written plenty of term papers and of course, also exams. I only remember little from what I learned for my exams. 90 % of what I learned during research for my term papers is still in my head. I think that it's good that so far, AI is only capable of writing texts but not, as far as I know, generating a useful bibliography.

Thereby, only writing is omitted but not research. On the other hand, it's essentially writing that makes me remember what I've learned. Difficult..."

While the person starts out with an understanding of writing term papers equals better learning, they switch to the aspect of research. They assume that the learning process is not yet endangered as long as AI is not capable of creating bibliographies (i. e. doing the research for you). Then, by the end of the comment, they realize that they maybe underestimated the dangers coming from AI since they remember that writing might be the crucial aspect of learning through writing term papers. The expression "Difficult..." at the end of the comment emphasizes their inner conflict and their thinking process. Despite their own insecurity, this participant seems to understand that both doing research and writing are processes that enhance learning.

Unlearn to write/not learn to write

The next example describes the effects of deskilling well. The respondent is afraid of losing abilities that they have already learned if they stop practicing them:

T: "I don't even want to start using those tools because I'm afraid that I will unlearn how to write. And I really have no interest whatsoever in outsourcing my hard-

earned cognitive abilities to some tool that I don't even own, and become dependent on it."

As Reinmann (2023: 4) explains, deskilling can happen both on a societal and on a personal level. This might imply what the respondent above describes as unlearning their skills. An important aspect mentioned here is the dependency on AI tools. While occasional support from a tool may not cause the loss of a skill, full dependency on it could promote deskilling. An essential question, especially for writing centers and everyone who teaches writing, is how much AI use is too much. Which skills do we absolutely need to learn for ourselves and which can be outsourced? And if AI does not take over our tasks, can it maybe support us in learning them ourselves?

Loss of your own style/Loss of your writing voice

In the next comment, the respondent addresses the topic of writing in your own style. While they use AI for non-writing tasks, they rely on their own strengths and their own style when it comes to writing:

T: "I think AI writing tools can totally be useful when it comes to collecting information, for example, but when I have to write a cohesive text for university, I would never use them, because I trust myself and my ability to write in my own words more. I don't know if I would ever admit to having AI write complete texts for me because it doesn't feel authentic."

An interesting aspect this person mentions is authenticity. Even though it is possible to command AI tools like ChatGPT or DeepL to assume a certain style, they may never use the exact words a real person would have chosen. While objectively, AI might master a scientific style better than a novice student, perfection is not always the goal of a writing task. A personal – if not by definition perfect – style can make a text more interesting than a generic style (Elbow 1998). The author of the following comment adds to that assumption:

T: " [...] Yes: for people who are struggling with expressing themselves, it can be useful. But wouldn't it be better to support these people in finding their own voice and their own style? [...]"

Even though they see why people turn to AI for support in formulating a cohesive text, this participant understands the importance of learning it for yourself. By mentioning people's own voice, they demonstrate an understanding of the importance of authenticity and personal expression in writing.

Loss of writing for yourself

The next comment includes two relevant points: the writing process as a valuable goal and control in writing:

T: "At least in my subject, writing itself is an integral part of academic working and thinking. I see no use in not going through this process yourself. I don't write to record a result but the text is also the result. That might be different in other subjects! Also, I think about the use of support, i. e. for spelling, style, and grammar, less critically. I just don't need them myself and rather have more control of my text."

According to the questionnaire, this respondent is studying linguistic and cultural studies, which is probably a writing-heavy program. They might have quite a lot of experience with academic writing and have reached a stage where they experience forms of epistemic-heuristic writing. Hence, they see the value in the writing process in addition to the product. This experience may give them confidence in their own writing. Being in control of their own writing is an advantage to them rather than a possible weakness in contrast to AI's seeming perfection.

This next person, too, sees the value in writing for themselves and has also experienced thinking through writing:

"I'm concerned about the pressure to deliver texts in great speed because of the possibility of getting support from AI tools. I like writing myself because I enjoy the process and it helps me think. I fear AI writing tools put more pressure towards standardized writing."

They describe a potentially new category of fear that hasn't been considered here: The fear of unequal treatment. Even if it takes effort to get high-quality results from AI through prompt-engineering, writing with AI support may still be more efficient than writing for yourself, depending on your level of expertise. At least at this point in time, with no tools for detecting AI and still no hard rules on AI use at most universities, or alternatively on the job market, this may lead to unfair treatment of people who deliberately decide against the use of AI.

Loss of independence

What has been mentioned by others before about dependency and independence is expressed in the following comment:

T: "Even if I think that ChatGPT is very useful, you've got to be careful not to get too dependent on it. If all of a sudden, for every little thing (in general, not just for university) I use ChatGPT instead of quickly thinking for myself and writing the short e-mail or the like, you lose your independence and also get used to a certain mental laziness. It's always more comfortable to let the AI write than to formulate

yourself but that makes you lose the competence to write texts on a good level over time. So, as a source of inspiration and a tool that makes your own sentences better, I find it legitimate. When you have everything written by AI out of laziness, it is not good for you in the long run."

Again, this comment raises the question of which skills to keep and which to leave to AI. If we imagine AI writing tools as just another tool like, for example, a calculator, one could argue that it is no longer necessary to learn writing because we can always access AI tools on our phones, just like we always have a calculator with us now. And yet, we still learn basic mathematics in school, so we are not dependent on a calculator in spontaneous situations. Some people, then, specialize in mathematics and become professionals, who use calculators as support in complex tasks, while they have understood the basics and the mechanics behind their calculations. AI might become such a tool as well. Everyone should learn basic writing skills that are necessary in everyday situations. Those people who specialize in writing or whose professions require strong writing skills need to gain more complex knowledge before they can use AI as a support in certain situations.

Loss of creativity

Lastly, participants also mention the aspect of creativity in writing:

T: "In my opinion that causes a lack of encouraging creativity in writing and due to a computer-generated answer, the process that is especially important in writing is shortened."

This respondent considers creativity an especially important aspect of writing. As mentioned before, students often have a hard time recognizing creativity in academic writing. Since AI tools progress more and more into the domain of creative, innovative work that was supposed to remain with humans, losing the ability of creative thinking could threaten the human agency on a text. Consequently, people could start wondering what use there is in writing at all.

Discussion and Conclusion

The results of my qualitative analysis show that some of the participants in Hoffmann, Grünebaum, and Schmidt's survey express concerns about aspects of deskilling in different writing-related skills. They are aware of the connection between writing and thinking and see their ability to think for themselves threatened by excessive dependency on AI tools. While some participants still use AI tools for certain tasks, they emphasize that their autonomy remains valuable to them and that they do not want to become dependent on the tools. Participants also express concerns in connection with their own writing style and voice. This

shows that once they have reached a level of writing proficiency that allows them to identify their own style, they are not willing to have it replaced by AI-generated text. Lastly, participants see and cherish the aspects of creativity in the writing process. Extensive AI support, in their opinion, reduces the possibility for creative expression and composition of academic texts.

Even though these findings demonstrate a reflected and responsible attitude towards AI, the group of students who contributed to the corpus makes up only 2.2% of the whole data collected from the survey. Therefore, these individual ideas cannot be generalized to a broader society. On the other hand, the concerns expressed in these comments came from the participants without any suggestion in the questionnaire. The concerns depicted above are an intrinsic reflection and should not be ignored despite the small number.

An essential aspect in the comments is that even though the students express worries and insecurities concerning AI tools, they do not all refrain from using them. Instead, they are aiming at a form of collaboration with the tools. A possible approach to a well-balanced collaboration could be to use AI as support in achieving certain skill levels instead of having it execute them for us. This is a task that could define the future of writing centers.

Buck and Limburg (2024) demand that writing skills should still be taught despite the emergence of AI tools. Additionally, they see a need for AI skills to be strengthened in order to adapt to a changing society. As the results in Hoffmann, Grünebaum, and Schmidt (2024) suggest, stronger writing proficiency might lead to a more reflected use of AI writing tools. The results from my quantitative analysis support this assumption since the participants who expressed concerns about deskilling seem to have better writing skills compared to the complete data set. Writing centers might therefore face two major tasks in the future: (1) continuing to teach writing skills in order to enable students to develop agency and authority towards AI tools and (2) developing strategies for AI support in learning these skills. Instead of completely replacing certain steps in the writing process and thereby depriving us of the opportunity to learn the skills that come with them, AI could become a tool in making these learning processes easier for us.

As Reinmann (2023: 10) suggests, we need to define essential tasks that cannot be replaced by AI. One of these skills is writing because it enables us to become reflected thinkers. So, while some practices in writing might change due to AI development, our own writing skills should never be completely replaced by AI³.

³ I would like to thank the AI-Colloquium at the Writing Center at Goethe-University Frankfurt for the many inspiring discussions during the creation of this article, several of which have contributed to it fundamentally.

Appendix: Student comments in their original language

Loss of thinking for yourself	<p>Writing is thinking. It is perhaps the most critical part of thinking. Taking writing away is likely going to cause a deficit in critical-thinking skills over time. I am very against AI tools as writing assistants for LEARNING and SCIENTIFIC purposes. For more repetitive and standard processes, I am okay with AI writing tools, e. g. for standard news writing, voicing your opinions, contacting people officially, etc. Once you know how to write for a certain purpose that is external, AI tools are going to offer a huge productivity boost. This is like everyday people using calculators to do math. However, if the purpose of writing is to refine your thoughts and communicate something only you know inside your head, then we are doing ourselves a disservice over time by using AI tools to replace our thinking. This is like a Mathematics PhD student who still needs to use a calculator to do basic derivatives, and their thesis is about complex derivatives. We are only hurting ourselves in the long term.</p> <p>Eigenes Schreiben und eigenes Textverständnis sollte unbedingt weiterhin gelehrt und geübt werden, sonst können wir die Qualität des KI-Outputs ja nicht beurteilen. Also kein entweder oder sondern beides ist wichtig: KI und selber schreiben und denken können</p>
Loss of learning	<p>Ich finde Hausarbeiten sind eine tolle Art zu lernen. Ich habe schon einige Hausarbeiten geschrieben und natürlich auch Klausuren. Von den meisten Klausuren habe ich wenig von dem was ich gelernt habe behalten. Die Dinge die ich beim recherchieren für eine Hausarbeit gelernt habe sind zu 90 % noch da. Ich denke dass es gut ist, dass die KI's bisher nur in der Lage sind Texte zu verfassen, nicht aber, soweit ich informiert bin, eine brauchbare Quellenangabe zu erstellen. Somit entfällt nur das selber schreiben, nicht aber die Recherche. Auf der Anderen Seite ist es ja auch das schreiben was das gelernte letztendlich einprägt.</p> <p>Schwierig...</p>
Unlearn to write/not learn to write	<p>Ich möchte gar nicht erst anfangen, diese Tools zu verwenden, weil ich befürchte, dadurch das Schreiben zu verlernen. Und ich habe wirklich keinerlei Interesse daran, meine hart erarbeiteten geistigen Fähigkeiten an irgendein Tool, das mir nicht einmal gehört, auszulagern und mich davon abhängig zu machen.</p>
Loss of your own style	<p>Ich finde KI Schreibtools sind durchaus hilfreich wenn es bspw. um die Sammlung von Informationen geht, aber wenn ich einen zusammenhängenden Text für die Uni schreiben soll würde ich diese nie benutzen, da ich mir selbst und meiner Fähigkeit in eigenen Worten zu schreiben mehr vertraue. Ich weiß nicht ob ich mich jemals darauf einlassen würde, ganze Texte von KI für mich schreiben zu lassen, weil es sich nicht authentisch anfühlt.</p>
Loss of your writing-voice	<p>Ich finde es sehr schade, dass wir in einer Situation sind, in der wir mit „Schreibtools“ konfrontiert werden, deren Textgrundlage (im Falle von zB ChatGPT) auf aus dem Internet gescannten (= von verschiedenen Autoren gestohlenen) Textstücken basiert. Natürlich verarbeiten wir alle bei der wissenschaftlichen Recherche irgendwo Texte anderer Autoren, aber auf solche Programme zurückzugreifen, die so respektlos mit geistigem Eigentum ungefragter Drittparteien (was auch eigenen Stil etc betrifft) umgehen, finde ich sehr bedenklich. Was ist daran noch wissenschaftliches Arbeiten?</p> <p>Ja: es kann für Leute, die Probleme damit haben, sich auszudrücken, hilfreich sein. Aber wäre es nicht besser, diese Personen darin zu unterstützen, ihre eigene Stimme und ihren eigenen Stil zu finden?</p> <p>Für mich sind KI Texte einfach unehrenhaft und nicht mit dem Anspruch, den ich an wissenschaftlichen Arbeiten habe, zu vereinbaren.</p>

Loss of writing for yourself	<p>Zumindest in meinem Fach ist das Schreiben selbst ein elementarer Bestandteil des akademischen Arbeitens und Denkens. Ich sehe keinen Sinn darin, diesen Prozess nicht selbst zu durchlaufen. Ich schreibe nicht, um ein Ergebnis festzuhalten, sondern der Text ist mit das Ergebnis. In anderen Fächern mag das anders aussehen!</p> <p>Ebenso sehe ich die Nutzung von Unterstützung, z. B. für Rechtschreibung, Stil und Grammatik, weniger kritisch. Ich brauche sie nur selbst nicht dringend und habe lieber mehr Kontrolle über meinen Text.</p> <p>I'm concerned about the pressure to deliver texts in great speed because of the possibility of getting support from AI tools. I like writing myself because I enjoy the process and it helps me think. I fear AI writing tools put more pressure towards standardized writing.</p>
Loss of independence	<p>Auch wenn ich ChatGPT sehr nützlich finde, muss man aufpassen, dass man nicht zu abhängig davon wird. Wenn ich auf einmal für jede Kleinigkeit (generell, nicht nur für Uni) ChatGPT benutze anstatt schnell selber nachzudenken und die kurze Email o. ä. zu schreiben, verliert man seine Selbstständigkeit und gewöhnt sich auch eine gewisse Denkfaulheit an. Es ist ja immer bequemer die KI schreiben zu lassen, als selbst zu formulieren aber dadurch verliert man über Zeit auch die Kompetenz selber Texte auf einem guten Niveau zu schreiben. Also als Inspirationsquelle und Tool wodurch die eigenen Sätze besser werden finde ich es legitim. Wenn man sich aus Faulheit alles von KI schreiben lässt, ist es langfristig nicht gut für einen.</p>
Loss of creativity	<p>Meiner Meinung nach wird dadurch die Kreativität beim Schreiben nicht mehr gefördert und durch eine Computer generierte Antwort der Prozess, der beim Schreiben besonders wichtig ist, verkürzt.</p>

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