

Using ChatGPT to Teach English for Academic Purposes: Perspectives from the Classroom

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ABSTRACT

Much attention has recently been given to the implications, potentials and pitfalls of ChatGPT in higher education. Thus far these discussions have taken a largely theoretical and exploratory perspective on what the strengths and weaknesses of ChatGPT are and how it could be used to either disrupt or enhance teaching and learning in higher education (Gimpel, et al., 2023; Kasneci, et al., 2023; Rudolph et al., 2023). Currently, there are few studies that have provided empirical evidence about the practical implementation of ChatGPT in the classroom, how it is being used and received by students, and its impact on student learning outcomes (Firat, 2023). This paper begins to address this gap by describing the ways in which ChatGPT was used in an English for Academic Purposes class for bachelor students in the Spring Semester of 2023 and assessing how it was received and used by students. Part one of the paper describes the curriculum design and the specific ways in which ChatGPT was incorporated into the syllabus, the learning outcomes, the assessments, and in-class activities. At the end of a semester a set of open-ended reflective questions was used to collect data from the students and gather insights into how students had experienced using ChatGPT in the class, what they saw as its strengths and weaknesses, and how they planned to use it in the future. Part two of the paper therefore uses a thematic analysis approach to consider the reflections of 26 students and identify patterns and themes in the students' responses. Seven key themes emerged from this analysis which included: generating ideas, improving essay structure, editing, too vague/unreliable, prompting, limiting creativity, and critical thinking. The data suggests that students largely understood both the strengths and weaknesses of ChatGPT as a writing tool, however, they were not able to use it in a way that significantly improved their writing. The ways in which students planned to use ChatGPT in the future varied significantly with the most common plans being to use it to generate new ideas and edit texts. The paper concludes by discussing the implications of these findings.

Keywords: AI, ChatGPT, higher education, students, learning outcomes

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INTRODUCTION

Since its release in November of 2022, ChatGPT has launched a discussion of the potentials and pitfalls of AI- powered conversational agents into the wider public domain. ChatGPT is a free and easily accessible tool that can generate convincingly human-like texts on almost any topic. Its widespread use has captured the publics' attention in an unprecedented way with over 100 million registered users reached within two months of its launch (Milmo, 2023).

Within the field of higher education in particular, the use of ChatGPT has been widely debated. While some describe it as a threat to teaching and learning as we know it (Weissman, 2023), others suggest that it represents an unprecedented opportunity to improve student learning and access, particularly for students from disadvantaged backgrounds (Sullivan et al., 2023). On the whole however, within the field of higher education, there appears to be an emerging consensus that both educators and students need to learn how to use ChatGPT and other generative AI models responsibly and constructively and become aware of the potentials as well as limitations of these tools (Gimpel et al, 2023; Mollick & Mollick, 2022; Malinka et al., 2023; Halaweh, 2023; Baidoo-Anu & Ansah, 2023; Farrokhnia et. al., 2023).

Currently, there are few studies that have provided empirical evidence about the practical implementation of ChatGPT in the classroom, how it is being used by students, and its impact on student learning outcomes (Firat, 2023; Lo, 2023). Furthermore, student voices in general have largely been missing from the conversations about ChatGPT in higher education (Sullivan et al., 2023). This is in large part because ChatGPT is such a new tool that relatively few educators have incorporated it into their lesson plans and its impact on student learning has not yet been evaluated. This paper begins to address these gaps by summarizing and analyzing the use of ChatGPT as a tool in an EAP (English for Academic Purposes) class during the Spring 2023 semester. Part one of the paper describes the curriculum design and the specific ways in which ChatGPT was incorporated into the course. Part two examines student reflections produced at the end of the semester on the use of ChatGPT in the classroom, focusing specifically on how students experienced using ChatGPT, what they see as its strengths and weaknesses as a writing tool, and how they plan to use ChatGPT in the future.

Thematic analysis was used to assess student reflections. Seven main themes emerged from that analysis which included: generating ideas, improving essay structure, editing, too vague/unreliable, prompting, limiting creativity and critical thinking. This analysis reveals that the students largely understood both the strengths and weaknesses of ChatGPT as a writing tool. While all but one student found ChatGPT to be a useful tool, most students did not think that it improved their writing significantly. The ways in which students reported planning to use ChatGPT in the future varied significantly with the most common plans being to use it to generate new ideas and edit texts. The insights gathered through these student responses provides a more nuanced understanding of how ChatGPT is being used by students and can help inform educators seeking to adapt their course content and assessments in response to the widespread use of generative AI.

LITERATURE REVIEW

Due to the newness of the technology, there is relatively little peer reviewed research on the use of ChatGPT in higher education. Within the existing literature, the majority of texts that have been published discuss the strengths and weaknesses of ChatGPT as well as the opportunities and threats that it poses in an educational context (Gimpel, et al., 2023; Kasneci, et al., 2023; Rudolph et al., 2023; Malinka et al., 2023; Mhalanga, 2023; Baidoo-Anu and Owusu Ansah, 2023). These texts largely come to similar, relatively broad conclusions - namely that while ChatGPT has the potential to enhance student learning, its weaknesses (including factual inaccuracies and biases) simultaneously pose a threat that universities must address. Many of these authors also discuss the ethical concerns that have been raised regarding AI's use in education, including issues related to plagiarism, cheating, discrimination and bias, and privacy (Kasneci et. al., 2023; Cotton et al, 2023; Farrokhnia et. al., 2023).

In addition to assessing the potentials and pitfalls of ChatGPT for higher education, many of the published articles also provide guidelines for both students and educators on how to responsibly use this tool (Gimpel et al., 2023; Cotton et al., 2023; Farrokhnia et al., 2023) While these guidelines and insights about the potentials and pitfalls of ChatGPT may be useful for both students and educators, as Lo (2023) points out, they tend to be based on the researchers' intuitive beliefs rather than empirical evidence. The lack of empirical research on ChatGPT is also addressed by Firat (2023) who suggests that there are currently "an insufficient number of studies addressing the perspectives of scholars and students on the rapid use of ChatGPT" (p.3).

One of the only empirical studies published thus far that has looked at the impact of ChatGPT on student performance was conducted by Bašić et al., (2023). Using quantitative analysis methods, they demonstrated that the use of ChatGPT "did not necessarily improve the quality of students' essays." (p.7). While using different methods of analysis, this paper comes to similar conclusions.

METHODS

The goal of this study was to understand how ChatGPT was received, used and perceived by students in an EAP class. Therefore, a qualitative research design was selected. Within social sciences, qualitative research methods are considered an effective mechanism for studying "nonquantifiable phenomena such as people's experiences" (Bhangu & Provost, 2023). In order to collect data on students' perceptions of ChatGPT, a reflective questionnaire was developed. This was deemed an appropriate method of data collection because in reflective writing, the writer's learning experience is the subject of the text (McGuire, Lay, & Peters, 2009). The questionnaire consisted of a series of open-ended questions that were designed to prompt respondents to reflect on their experiences and thoughts about using ChatGPT in a structured manner. A total of 26 students voluntarily and anonymously completed the questionnaire at the end of the semester. The Best Practice Guide for Research Integrity and Ethics (2020) of the Austrian Federal Ministry of Education, Science and Research was followed to ensure ethical compliance.

Thematic analysis was employed to make sense of the data that was collected via the questionnaires. Thematic analysis stipulates that “the recorded messages themselves (i.e. the texts) are the data and codes are developed by the investigator during close examination of the texts as salient themes emerge inductively from the text” (Neuendorf, 2018, 212). Thematic analysis was well suited for this study as it allowed for an analysis and categorization of a wide range of student responses. Using Braun and Clarke’s (2006) framework, the analysis occurred in multiple steps. First, initial codes were generated. For this study a primarily inductive approach to thematic analysis was used - in other words, the data was open-coded. A total of nine codes were identified during this phase of the analysis. Next, the codes were examined and themes were searched for. In the following phases, the themes were defined and named, resulting in a total of seven themes.

CURRICULUM DESIGN

The basis for this study was a year-long EAP class that was taught to first year Bachelor’s students during the Winter and Spring semesters of 2022/2023. In the first semester students were introduced to the basics of essay writing including: the parts of an essay, thesis statements, writing introductions, supporting paragraphs, conclusions, citations, avoiding plagiarism, etc. The second semester focused on developing arguments and including different types of sources into essays. The class was divided into two sections with approximately sixteen students per section. Each section met for a total of 9 times per semester for three 45-minute units per class session. The course was taught in an interactive style with significant amounts of in class time devoted to discussion, brainstorming, and group work.

The decision to begin teaching and working with ChatGPT in the second semester was in large part prompted by a realization towards the end of the first semester that some students were already experimenting with this tool and using it to assist them with their paper writing. As a result, ChatGPT was introduced as a tool in the second semester to both level the playing field for students (ensuring that all students were able to use ChatGPT) and to see if the use of ChatGPT could improve the quality of their writing.

The use of ChatGPT was embedded in the course syllabus. Borrowing language from Mollick & Mollick (2023) the syllabus stated that:

We will use AI (e.g., ChatGPT) in this class. In fact, some assignments will require it. Learning to use AI is an emerging skill that we will be exploring throughout the semester and in many of our assignments.

The student learning outcomes and assessments were also changed to reflect the introduction of ChatGPT in the classroom. In addition to the previous learning outcomes which were focused on developing and writing essays and producing arguments, two new ones were added which included “using AI to assist in the writing process,” and “understanding the strengths and weaknesses of AI tools such as ChatGPT”. The assessments used in the class

were also adjusted to reflect the use of ChatGPT. While students were still required to write a final paper and prepare a presentation on their paper topic, they were also required to have ChatGPT produce a version of their essay and were asked to write a one-page reflection on the ChatGPT version – analyzing both its strengths and weaknesses and reflecting on whether and how they could incorporate aspects of this version in their final essay.

Beginning with the first lesson of the semester, ChatGPT was used in a variety of in class exercises.

Table 1: Spring Semester 2023 ChatGPT Activities and Intended Learning Outcomes

Thematic Focus of Lesson	ChatGPT In-class Activity	Intended Learning Outcomes
Writing Coherent Paragraphs	Introduction to ChatGPT. Use ChatGPT to create a paragraph and compare this to a paragraph that students have previously written on the same topic.	Identify strengths and weaknesses of ChatGPT paragraphs. Giving clear prompts is key to generating quality texts.
Argument and Discussion	Look at ChatGPT generated essay. Analyse strengths and weaknesses. Tweak prompt to improve the essay.	Identify strengths and weaknesses of ChatGPT essays. These will often lack a clear argument, and will not include sources unless prompted. Sources and information provided by ChatGPT are not necessarily accurate.
Comparing and Contrasting	Ask ChatGPT to generate an outline and source list for a compare and contrast essay.	Recognize that source lists generated by ChatGPT are not reliable. Be able to use outlines generated by AI to direct research.
Summarizing and Paraphrasing	Use ChatGPT to summarize and paraphrase texts. Compare to summaries and paraphrases that students generate themselves.	Create summaries and paraphrases with the help of ChatGPT. Check for accuracy and plagiarism of ChatGPT generated summaries.
Graphs and Figures	Use ChatGPT to write an analysis of specific numbers and/or figures.	ChatGPT can analyze and extract meaning from raw numbers. It is not able to create tables and figures.

Editing	Ask ChatGPT to edit and revise a text that students have written.	Use ChatGPT effectively as an editing tool.
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As Table 1 demonstrates, students were taught to use ChatGPT to both assist with content generation and writing support. The first lessons of the semester focused largely on introducing students to ChatGPT and allowing them to experiment with its capabilities both individually and in small groups. Thus, for example, during the first lesson, students were introduced to ChatGPT and were then asked to have ChatGPT create a version of a paragraph that they had previously written during the lesson. Students were asked to compare and analyse the differences between their version and the ChatGPT version and share their findings with a partner. In the next lesson, students worked in groups and were given an entire essay generated by ChatGPT and asked to analyze the essay based on guidelines that had been taught the previous semester. Students then experimented with tweaking the essay prompt to improve the quality of the ChatGPT generated essay.

In subsequent lessons which were focused on developing arguments, ChatGPT was used as tool to help generate essay outlines, and source lists. Halaweh's (2023) idea of reverse searching was introduced to students. Reverse searching involves students using ChatGPT generated outputs to guide their research and find sources to support the ChatGPT generated content. The intended learning outcomes of these early lessons was for students to understand how ChatGPT could be a useful tool for them to generate and develop ideas on a specific topic but also that the texts produced by ChatGPT need to be analyzed critically as they tend to be overly broad and general. Students were then taught to engineer prompts that produced better outcomes by including more specific data and instructions in the prompt.

One of the significant and well-known weaknesses of ChatGPT is its tendency to make up citations and references. Through experimentations in class, students quickly realized that many of the references created by ChatGPT simply did not exist. By analyzing ChatGPT generated essays and experimenting with creating essay and paragraphs prompts students also became aware that the essays created by ChatGPT often lacked a clear argument. Thus, through a series of simple, in-class exercises, students were introduced to some of the strengths as well as weaknesses of ChatGPT firsthand and were asked to critically evaluate its capabilities and reflect on how it might or might not be used effectively.

Later lessons focused on using ChatGPT as an editing tool to help students improve texts that they had already written. Students were, for example, asked to write a paragraph in pairs, and then instructed to put their paragraphs into ChatGPT and give it the command to edit and revise the text. ChatGPT kept the structure and sentence order of their paragraphs largely intact, while fixing grammatical mistakes and improving their word choice. Students were also asked to experiment with ChatGPT as a tool for creating paraphrases and summaries of other texts. Similarly, students were introduced to ChatGPTs capabilities related to analysing numbers and statistical data. The emphasis of [both](#) lessons was on the significant capabilities of ChatGPT as a tool for analysis and

summaries, but also that it is not an infallible tool and that the ultimate responsibility for ensuring that the content is accurate and does not constitute plagiarism lies with the users.

RESULTS

As outlined in the Methods section, students were asked to complete a questionnaire at the end of the semester which asked them to reflect on their learning experience with ChatGPT in a structured way. Using thematic analysis, the following themes emerged from the student's responses:

Table 2: Thematic Analysis of Student Reflections

Theme	Description of Theme	Frequency of Theme
Generating ideas	ChatGPT can be a useful tool for generating ideas on a topic, overcoming writers block, and suggesting new avenues for research	21
Improving Essay Structure	ChatGPT can help with creating clear paragraphs, topic sentences and concluding sentences as well as connecting paragraphs to one another	14
Editing	ChatGPT can be helpful as an editing tool. Use it to improve grammar, vocabulary and sentence structure. Can be used to make texts sound more academic.	18
Too vague/unreliable	Texts generated by ChatGPT are often too general or vague. Lacking reliable sources and examples.	21
Prompting	Creating prompts that get good results can be challenging	2
Limits Creativity	Relying on ChatGPT can result in less creative thinking, limits research and thinking	4
Critical Thinking	Content created by ChatGPT needs to be analyzed critically.	3

The most frequent themes that emerged from the student reflections were ChatGPT as a useful tool for generating ideas, and that the results generated by ChatGPT were often too vague and/or unreliable. The usefulness of ChatGPT as an editing tool (both in terms of improving essay structure, and in terms of grammar and vocabulary) was also frequently noted. Overall, the students were able to articulate quite clearly the strengths and weaknesses of ChatGPT. For example, one student noted: “I really liked using ChatGPT and found it very useful especially in the beginning of the writing process. I used it to get an idea of how this paper could develop.” This same student went on to note that citations provided by ChatGPT were “not really reliable”. Another student reported: “The strengths have definitely to do with structure and use of English language, and the weaknesses with the lack of reliable sources.” Similarly, a third student wrote that “It provides the vocabulary and grammar I lack when it comes to my English speaking and writing abilities” but also noted its weakness of “giving false citations or often non-existent citations.”

Regarding their futures plans for using ChatGPT, the students’ responses were quite mixed. 14 of the students noted that they would plan to use ChatGPT to help them generate ideas and drafts of their papers. One student for example noted: “I plan to use it to help me generate ideas for my topic I want to work on.” Another student reported “I plan on using ChatGPT mainly to create a draft of my papers and to work with that...” A third student wrote “I will use it...for creating first drafts I then can use for inspiration.” These responses show that a significant proportion of students plan to use ChatGPT to help them develop new ideas and drafts of their paper. 11 students said that they would use ChatGPT as an editing tool in the future. One student wrote that they would use ChatGPT in the future to “correct my essays and help me improve the writing that previously was done.” Another student noted that “I will use ChatGPT as a way to check my grammar and refine my sentences”. Three students reported that they were unsure of whether or how they would use ChatGPT in the future. An additional four students gave very vague responses such as “I will use it for homework and presentations.”

The question of whether and how ChatGPT actually improved students’ writing, is one that the reflections can help us begin to answer. While 25/26 students reported ChatGPT to be a useful tool, not all of them thought it had improved their writing. While many students found it useful for generating ideas and thought it had improved the grammar or structure of their paragraphs, others were wary of its impact. Seven students said that they did not think it had improved their writing at all. One student noted that “it kind of stops or shorten your research or thinking about period because you go to ChatGPT right away.” Another student suggested that “I think it limits my creativity and thinking. As I rely more on it the more it limits me.” In response to the question of whether their writing had improved as a result of using ChatGPT one student responded: “I would say yes...if we can consider it my writing. Otherwise and honestly my own writing skills without AI (pen and paper) is not improving.” Other students thought it had only a marginally improved their writing. One student reported “I don’t think it improved that much. But it became easier to start writing and come up with ideas.” Another student stated: “I feel that it did not improve much of my writing as sometimes I felt that it changed my whole ideas and lost the meaning of it.”

The student reflections from this study suggest that while it is a relatively straightforward matter to teach students to be able to correctly identify and describe the strengths and weaknesses of ChatGPT, it is not particularly easy for students to improve their writing ability as a result of using ChatGPT. This finding is supported by comparing students' scores for assignments on which they used ChatGPT and those on which they did not. In both cases students work was scored using a rubric which allocated points for structure, content, language use, cohesion, and citations. With relatively few exceptions, students scored only marginally higher on assignments for which they used ChatGPT. The higher scores can largely be attributed to higher points received in the area of language use. However, points received for content, structure, cohesion and citations did not improve in a significant way and in some cases actually went down. This can in part be attributed to the fact that some students, despite understanding the weaknesses of ChatGPT generated texts, submitted assignments that had been generated exclusively by ChatGPT with very little if any input from themselves. While these assignments were grammatically flawless, they generally lacked a clear argument, had incorrect or missing citations and references, and lacked concrete and specific examples. As a result, they received quite low scores.

IMPLICATIONS

For educators it is important to recognize that ChatGPT is a tool that students are using but that many are not able to use in a way that significantly improves their writing. While ChatGPT can easily be used to fix grammar or syntax issues, the fundamental problems that many students face when it comes to academic writing have to do with argumentation and critical thinking (Wingate, 2011). And, as Gimpel et al., (2023) point out "ChatGPT is not (yet) good at developing a long text that builds up an argument step by step or analyzes an issue from multiple perspectives in detail" (p.19). In order to use ChatGPT effectively, students need to be able to critically evaluate and analyze the content it creates and actively engage with it rather than accepting the output as fact (Acar, 2023). Thus, for students who struggle with critical and analytical thinking, ChatGPT is not a particularly useful tool. This means that for educators, teaching critical and analytical thinking should become an even higher priority. In an EAP context we need to teach our students how ChatGPT can be used effectively as a tool in the writing process: students can use it to improve the structure and grammar of their writing and help them generate ideas on a topic. We also need to teach them how to engineer prompts that will produce high quality results and how to critically analyze, edit, and engage with ChatGPT outputs.

In terms of the type of assessments used, for an EAP class, essay writing can still be a useful form of assessment. Whereas in the past instructors might have simply asked students to write an essay on a particular topic, the emergence of ChatGPT makes it increasingly important that instructors create assignments that allow them to evaluate how the assignment was produced and forces students to account for how and why they used ChatGPT for the assignment. That might take the following format:

Step 1: Students choose an essay topic and submit an outline that includes an argument and reference list along with a reflective paragraph about why they chose the topic.

Step 2: Students submit a ChatGPT version of their paper and a 1-page reflection on the strengths and weaknesses of this version

Step 3: Students submit a final version of their paper along with a reflective statement about how this version differs from the previous ChatGPT version

Step 4: Students present their papers orally and are asked questions about their paper

Including these various steps will ensure that students are reflecting on how they are using ChatGPT and will allow instructors to assess the extent to which students are engaging critically with ChatGPT output. By including an oral component to the assignment, instructors will be able to ask questions about the content and process of the students' work and assess whether or not the student actually demonstrates an understanding and mastery of the key points they make in their papers.

The criteria for evaluating student work in the era of ChatGPT also needs to be adjusted and this is particularly the case when it comes to essay writing. As Gimpel et. al, (2023) have pointed out "with increasingly advanced language models, the potential link between linguistic quality and content quality is no longer there" (p 31). In terms of assessment criteria, the widespread use of ChatGPT means we should be focusing much less on the language use, and much more on the extent to which students demonstrate a mastery of content. Assuming that all students have access to ChatGPT and will be using it as an editing tool, few if any points should be allocated for grammar, syntax, or language use, and the majority of points should be allocated for argumentation, examples, citations, and analysis. By allocating significantly more points in these areas we can more effectively assess the extent to which students have in fact mastered the concepts that we are teaching like the ability to present a clear argument and support it with appropriate evidence and analysis.

Finally, we should be aware that some students will continue to use ChatGPT as a shortcut and will simply have it create papers for them without significant prompt engineering, input or critical analysis. Rigorously checking students' references is one way of easily identifying these papers.

CONCLUSION

The emergence of ChatGPT has sparked many conversations in the field of higher education regarding the potentials and threats of generative AI to. However, student voices have largely been missing from these discussions. This study has begun to bring student voices into the dialogue by examining how students are using this tool and what its impact on their written work has been. The evidence from this study suggests that:

- 1) Students are using ChatGPT and find it to be a useful tool.
- 2) Students are clearly able to identify the strengths and weaknesses of ChatGPT.

3) Despite understanding the capabilities and limitations of ChatGPT, students still struggle with using it effectively in the writing process

These insights are an important data point for educators to return to as they seek to integrate ChatGPT into their lessons. They suggest that educators will need to devote significant time to teaching students how to critically analyze the content produced by ChatGPT and how to incorporate ChatGPT effectively in the writing process. Within an EAP context, the use of ChatGPT will necessitate changes to how writing is taught. More emphasis will need to be placed on argumentation, critical thinking and the process of research and writing. Many of the grammar and syntax related lessons that used to be a staple of academic writing courses will be rendered obsolete by the use of ChatGPT. The emergence of ChatGPT and other generative AI tools therefore necessitates a rethinking of pedagogical methods and focus. Understanding how students are using and receiving these tools is an important step in that process.

REFERENCES

- Acar, O. (2023). Are your students ready for AI? A four-step framework to prepare learners for a ChatGPT world. *Harvard Business School Publishing*. https://hbsp.harvard.edu/inspiring-minds/are-your-students-ready-for-ai?file:///C:/Users/fhs38713/Downloads/2020-10-20_Praxisleitfaden%20f%C3%BCr%20Integrit%C3%A4t%20und%20Ethik%20in%20der%20Wissenschaft_engl_-2.pdf
- Austrian Federal Ministry of Education, Science and Research (2020) *Best Practice Guide for Research Integrity and Ethics*
- Baidoo-Anu, D., & Owusu Ansah, L. (2023). Education in the era of generative artificial intelligence (AI): Understanding the potential benefits of ChatGPT in promoting teaching and learning. *SSRN Electronic Journal*. Advance online publication. <https://doi.org/10.2139/ssrn.4337484>
- Bašić, Ž.; Banovac, A.; Kružić, I.; Jerković, I. (2023) Better by you, better than me? ChatGPT-3 as writing assistance in students' essays. *arXiv* **2023**, arXiv:2302.0453 <https://doi.org/10.35542/osf.io/n5m7s>
- Bhangu, S., Provost, F., & Caduff, C. (2023). Introduction to qualitative research methods - Part I. *Perspectives in Clinical Research*, *14*(1), 39–42. https://doi.org/10.4103/picr.picr_253_22
- Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology*, *3*(2), 77–101. <https://doi.org/10.1191/1478088706qp063oa>
- Cotton, D. R. E., Cotton, P. A., & Shipway, J. R. (2023). Chatting and cheating: Ensuring academic integrity in the era of ChatGPT. *Innovations in Education and Teaching International*, 1–12. <https://doi.org/10.1080/14703297.2023.2190148>
- Farrokhnia, M., Banihashem, S. K., Noroozi, O., & Wals, A. (2023). A SWOT analysis of ChatGPT: Implications for educational practice and research. *Innovations in Education and Teaching International*, 1–15. <https://doi.org/10.1080/14703297.2023.2195846>
- Firat, M. (2023): What ChatGPT means for universities: Perceptions of scholars and students In *Journal of Applied Learning and Teaching* Vol.6 No.1 DOI:10.37074/jalt.2023.6.1.22
- Halaweh, M. (2023). ChatGPT in education: Strategies for responsible implementation. *Contemporary Educational Technology*, *15*(2), ep421. <https://doi.org/10.30935/cedtech/13036>
- Gimpel, H., Hall, K., Decker, S., Eymann, T., Lämmermann, L., Mädeche, A., Röglinger, M., Ruiner, C., Schoch, M., & Schoop, M. (2023). *Unlocking the Power of Generative AI Models and Systems such as GPT-4 and ChatGPT for Higher Education A Guide for Students and Lecturers* *Unlocking the Power of Generative AI Models and Systems such as GPT-4 and ChatGPT for Higher Education A Guide for Students and Lecturers*. <https://doi.org/10.13140/RG.2.2.20710.09287/2>

- Kasneji, E., Seßler, K., Küchemann, S., Bannert, M., Dementieva, D., Fischer, F., Gasser, U., Groh, G., Günnemann, S., & Hüllermeier, E. (2023). *ChatGPT for Good? On Opportunities and Challenges of Large Language Models for Education*. <https://doi.org/10.35542/osf.io/5er8f>
- Lo, C. K. (2023). What Is the Impact of ChatGPT on education? A rapid review of the literature. *Education Sciences*, 13(4), 410. <https://doi.org/10.3390/educsci13040410>
- Malinka, K., Perešini, M., Firc, A., Hujňák, O., & Januš, F. (2023). On the educational impact of ChatGPT: Is artificial intelligence ready to obtain a university degree?. *arXiv preprint*. arXiv:2303.11146. <https://doi.org/10.48550/arXiv.2303.11146>
- McGuire, L., Lay, K., & Peters, J. (2009). Pedagogy of reflective writing in professional education. *Journal of the Scholarship of Teaching and Learning*, 9(1), 93–107.
- Mhlanga, D. (2023) *Open AI in Education, the Responsible and Ethical Use of ChatGPT Towards Lifelong Learning* Available at SSRN: <https://ssrn.com/abstract=4354422> or <http://dx.doi.org/10.2139/ssrn.4354422>
- Milmo, D. (2023, Feb. 2) ChatGPT reaches 100 million users two months after launch. *The Guardian* <https://www.theguardian.com/technology/2023/feb/02/chatgpt-100-million-users-open-ai-fastest-growing-app>
- Mollick, E. R., & Mollick, L. (2023). Using AI to implement effective teaching strategies in classrooms: Five strategies, including prompts. *SSRN Electronic Journal*. Advance online publication. <https://doi.org/10.2139/ssrn.4391243>
- Neuendorf, K. A. (2018) Content analysis and thematic analysis. In *Advanced Research Methods for Applied Psychology* (pp. 211–223). <https://doi.org/10.4324/9781315517971-21>
- Rudolph, J., Tan, S., & Tan, S. (2023). ChatGPT: Bullshit spewer or the end of traditional assessments in higher education? *Journal of Applied Learning and Teaching*, 6(1). Advance online publication. <https://doi.org/10.37074/jalt.2023.6.1.9>
- Sullivan, M., Kelly, A., & McLaughlan, P. (2023). ChatGPT in higher education: Considerations for academic integrity and student learning. *Journal of Applied Learning and Teaching*, 6(1). Advance online publication. <https://doi.org/10.37074/jalt.2023.6.1.17>
- Tlili, A., Shehata, B., Adarkwah, M. A., Bozkurt, A., Hickey, D. T., Huang, R., & Agyemang, B. (2023). What if the devil is my guardian angel: ChatGPT as a case study of using chatbots in education. *Smart Learning Environments*, 10(1). <https://doi.org/10.1186/s40561-023-00237-x>
- Weissman, J. (2023, February 9). ChatGPT is a plague upon education. *Inside Higher Ed*. <https://www.insidehighered.com/views/2023/02/09/chatgpt-plague-upon-education-opinion>
- Wingate, U. (2012). ‘Argument!’ helping students understand what essay writing is about. *Journal of English for Academic Purposes*, 11(2), 145–154. <https://doi.org/10.1016/j.jeap.2011.11.001>

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