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## Letter from the Editors

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### Abstract

This letter from the editors of IJ-SoTL introduces the double issue, volume 17, number 1. We consider one of the items dominating discussions in higher education over the past six months: the advent and implementation of what may become a disruptive technology, artificial intelligence and its effect on the world or work, especially the work of educators.

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## Letter from the Editors

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This letter from the editors of *IJ-SoTL* introduces the double issue, volume 17, number 1. We consider one of the items dominating discussions in higher education over the past six months: the advent and implementation of what may become a disruptive technology, artificial intelligence and its effect on the world or work, especially the work of educators.

### THE LOOMING SPECTER OF ARTIFICIAL INTELLIGENCE

If you've followed any of the media sources that address education in the last few months, you've had a proper scare put into you about the looming specter of Artificial Intelligence (AI). While no pundits are yet claiming to see futures like those in *The Terminator* or *The Matrix*, their prognostications are dire. A report from Goldman Sachs, the investment banking firm, predicts that two-thirds of all jobs in the US and Europe will be "exposed to some degree of AI automation," while globally up to 300 million workers may lose their positions to generative AI automation (Briggs and Kodhani, 2023, p. 1). A working paper from members of the team that created the most popular generative AI, ChatGPT, arrives at almost the same conclusion, claiming that 80% of all workers in the US "belong to an occupation with at least 10% of its tasks exposed to LLMs [Large Language Models, like ChatGPT], while 19% of workers are in an occupation where over half of its tasks are labeled as exposed" (Elondou et. al, p. 11). Not to be outdone in touting the disruptive nature of AI, the professional services firm Accenture claims that "generative AI will transform work across every job category" (Daugherty et.al., 2023, p. 15).

All of these reports, papers, and articles address one particular form of artificial Intelligence, generative AI, which is capable of creating wholly new texts, images, sculptures, or other content in response to natural language user prompts. As for the other forms of AI, even something as rudimentary as this categorization is dependent on who you ask. We've seen material presenting three, four, five, seven, or nine different forms of AI. Given both its novelty and the rapidly evolving nature of work in this field (hastened on by the fact that AI tools work much faster than humans do), it's no wonder that even the experts can't agree on how to wrap their arms around the totality of AI. But generative AI is the one that occasions the dire predictions above.

### AI AND EDUCATION

Post-Secondary educators have legitimate concerns about how and when students use generative AI in their work. From detectors that offer an analysis of how likely it is that a particular text was written by AI to in-class written exams, from mandating the use of lockdown browsers to giving individual oral exams, our colleagues have been fighting the good fight for academic integrity (Nolan, 2023). But perhaps we shouldn't be worried about how, or even if, our students are co-opting Large Language Models. Maybe we should be focused on our own job security, if Pengcheng Shi, the Associate Dean for Research and Scholarship in the Golisano College of Computing and Information Sciences at the Rochester Institute of Technology, is correct. In an interview with the *New York Post*, Shi noted that "AI is replacing the white-collar workers. I don't think anyone can stop that." But perhaps his most chilling observation was that ChatGPT "can easily teach classes already" (Mitchell, 2023).

### AI AND SOTL

What does generative AI bring to the table for SoTL? You might think that we, as editors of an international journal on the topic, would have some insight into this matter. However, we are but lowly humans, faculty members like you, who have read all the warnings, had students co-opt ChatGPT for work in our classes, and realize that we will never catch up to the use of AI in higher education, let alone get ahead of it. So we're deferring to the experts in the field, the chatbots and LLMs themselves, to see what they have to say about it.

We have a three-part process. First, we'll ask three different LLMs to expound on the use of AI in SoTL. Then we'll ask them to peer-review one another's work (double-blinded, of course). Then we'll ask them to evaluate each other (non-blinded). We'll reserve our comments for later.

## The Respondents

The three LLMs we engaged were GPT-4, the most advanced version of ChatGPT, which, according to the team that developed it, “can solve difficult problems with greater accuracy, thanks to its broader general knowledge and problem-solving abilities” (OpenAI, 2023). Next was YouChat, a generative AI attached to the you.com search engine, and “the first upgraded large language model for increased relevancy and accuracy” (you.com, 2022). Finally, we accessed Writesonic, which touts itself as “the world’s best AI writing platform for creating SEO-optimized content that increases organic traffic to your website on Google” It has trained its LLM on “thousands of real-life examples from the top brands” (Writesonic, 2022).

## STEP 1: WRITE

We gave these LLMs the same task. Our prompt was “Write a short essay on the use of AI in the scholarship of teaching and learning.” Their responses are below. (We did not correct any errors in grammar or usage produced by the bots.)

### GPT-4

In recent years, the field of education has witnessed a revolution with the introduction of artificial intelligence (AI). AI is the ability of machines to perform tasks that typically require human intelligence, such as decision-making, problem-solving, and understanding natural language. The use of AI in the scholarship of teaching and learning has significantly enhanced the quality and effectiveness of education.

One of the most significant contributions of AI in education is the development of personalized learning systems. These systems use algorithms to map out the strengths and weaknesses of individual students and provide recommendations for personalized learning experiences. For example, adaptive learning platforms can track student progress and provide tailored feedback, quizzes, and learning resources. This customized approach has shown to increase student engagement, motivation and ultimately student success.

Another important impact of AI in education is the automation of routine tasks, which frees up educators to focus on more creative and meaningful tasks. AI can automatically grade quizzes and assignments, and provide real-time feedback to students. Additionally, chatbots can assist students, answering questions and offering guidance when needed, cutting down the time educators and students spend sending emails.

Moreover, AI-powered tools have made it easier for educators to access, analyze, and interpret data. Educators can use AI algorithms to analyze student data and identify patterns, enabling them to make informed decisions on teaching and curriculum design. This data could include learners’ engagement, grades, mistakes, quiz results however while the data is analyzed, privacy requirements and ethical considerations should be considered.

Lastly, AI has also broadened the scope of education by making it more accessible and inclusive. Through machine translation and natural language processing, learners who speak different languages or who are deaf/hard of hearing can communicate effectively with their peers and educators. Furthermore, individuals with disabilities are able to access digital learning materials more easily than they would textbooks or traditional print media.

However, while the development of AI in education has significant potential in improving access and the quality of education, it has also raised valid concerns around the ethical use of technology, including issues of privacy, data security, and bias. The ethical considerations for AI in education need to be analyzed thoroughly, and educators must be properly trained to teach students how to use these technologies effectively.

In conclusion, the use of AI in the scholarship of teaching and learning has ushered in a new era of unparalleled opportunities for personalized learning, data analysis, and data-based decision-making. Careful implementation of AI could empower educators to better connect with their students, provide them with critical skills, and create an inclusive learning environment. However, education stakeholders need to be vigilant and ensure that the ethical use of AI in education is prioritized before its adoption is fully integrated into the educational system.

### YouChat

The use of artificial intelligence (AI) in the scholarship of teaching and learning has become an increasingly popular topic in recent years. There are many potential applications of AI in this field, including the use of AI tools to facilitate writing and research, the development of AI-based teaching and learning systems, and the use of automated grading and feedback systems.

One of the key benefits of using AI tools in the scholarship of teaching and learning is the potential to streamline and enhance the writing process. For example, AI tools can be used to help students brainstorm ideas, evaluate research sources, and organize their writing more effectively. AI-based writing tools such as ChatGPT have been shown to be highly effective in generating high-quality text, which can assist learners to produce clear and concise academic assignments.

AI can also help in the facilitation of collaborative writing projects. Research has shown that collaborative writing is an effective way to improve learning outcomes, as it encourages students to work together and learn from one another. AI tools can help to facilitate this process by providing students with prompts, feedback, and help in organizing their ideas.

Another potential application of AI in the scholarship of teaching and learning is the development of AI-based teaching and learning systems. Such systems would be capable of adapting to the needs and abilities of individual students, providing personalized instruction and feedback based on their performance. This can help learners master concepts more quickly and efficiently.

Despite these benefits, it is important to be aware of the potential downsides of using AI in the scholarship of teaching and learning. For example, some argue that the over-reliance on AI tools could lead to insufficient engagement and critical thinking on the part of students. Uncritical acceptance of AI-generated responses as superior or neutral, can defeat the purpose of academic integrity and honesty. Therefore, there is a need for caution, and to develop ethical guidelines for AI use in the academia.

In conclusion, AI has great potential as a tool to aid in the scholarship of teaching and learning. The technology can assist in the development of AI-based teaching and learning systems, facilitate the collaborative writing process, and provide useful feedback to students in a more efficient way. However, as with any new technology, its implementation must be done with caution and attention to its limitations and potential drawbacks. Implementing AI to assist in the scholarship of teaching and learning should aim towards determining the right amount of assistance so that learners' critical thinking abilities, and academic integrity are supported.

## **Writesonic**

The scholarship of teaching and learning (SoTL) is a field that focuses on researching and improving teaching practices. With the rise of artificial intelligence (AI), there has been a growing interest in the potential use of AI in SoTL. AI can provide valuable insights into student learning and help educators make data-driven decisions that can enhance teaching effectiveness.

One way that AI can be used in SoTL is through data analysis. AI algorithms can analyze large datasets of student performance and provide insights into how students learn, what teaching methods are effective, and where improvements can be made. This can help educators tailor their teaching to meet the needs of individual students and improve overall student outcomes.

Another way that AI can be used in SoTL is through the development of intelligent tutoring systems. These systems can provide personalized learning experiences that adapt to the individual needs and abilities of students. They can also provide immediate feedback to students and help them identify areas where they need to focus their efforts.

AI can also be used to automate certain aspects of teaching, such as grading and feedback. This can save educators time and allow them to focus on other aspects of teaching that require more human input. However, it is important to note that AI should not replace human interaction and feedback entirely. Instead, it should be used to supplement and enhance the teaching experience.

Despite the potential benefits of AI in SoTL, there are also concerns about its use. One concern is that AI may reinforce existing biases in the data it analyzes, leading to unfair or inaccurate conclusions. Another concern is that AI may be used to replace human teachers, leading to job losses and a decrease in the quality of education.

Overall, the use of AI in SoTL has both potential benefits and risks. It is important for educators and researchers to carefully consider these factors before implementing AI in their teaching practices. By doing so, they can ensure that AI is used in a responsible and effective manner that enhances the learning experience for all students.

## **STEP 2: REVIEW**

We asked each LLM to comment on the work of the other LLMs with a common query: "Evaluate the accuracy of the following: [response to the previous question generated by another LLM]."

### **GPT-4 reviewing YouChat**

The statement accurately describes the potential applications of artificial intelligence (AI) in the scholarship of teaching and learning (SoTL). It correctly identifies several areas where AI can be beneficial, such as facilitating the writing process, supporting collaborative writing projects, and developing AI-based teaching and learning systems that provide personalized instruction and feedback.

The statement recognizes the potential benefits of using AI tools to streamline and enhance the writing process. AI can assist students in generating ideas, evaluating research sources, and organizing their writing effectively. It also mentions the effectiveness of AI-based writing tools, such as ChatGPT, in generating high-quality text.

Additionally, the statement highlights the value of AI in facilitating collaborative writing projects, which have been shown to improve learning outcomes. AI tools can provide prompts, feedback, and organizational assistance to students, promoting collaboration and knowledge sharing.

The statement also acknowledges the potential downsides of relying too heavily on AI in SoTL. It raises concerns about insufficient student engagement and critical thinking if AI tools are overused. It emphasizes the importance of maintaining academic integrity and honesty by critically evaluating AI-generated responses and promoting ethical guidelines for AI use in academia.

In conclusion, the statement accurately presents the potential benefits and limitations of using AI in the scholarship of teaching and learning. It underscores the importance of carefully integrating AI tools to strike a balance between providing assistance and promoting critical thinking skills in students.

#### **GPT-4 reviewing Writesonic**

The statement accurately describes the potential use of artificial intelligence (AI) in the field of the scholarship of teaching and learning (SoTL). AI can indeed be utilized to analyze large datasets of student performance, provide insights into effective teaching methods, and help educators make data-driven decisions. The statement also highlights the development of intelligent tutoring systems that offer personalized learning experiences and immediate feedback to students.

Furthermore, the statement correctly acknowledges that AI should not completely replace human interaction and feedback in the teaching process. Instead, it should be employed as a supplement to enhance teaching practices. This recognition is important since human interaction plays a crucial role in education, fostering critical thinking, creativity, and emotional support.

The statement also highlights concerns associated with the use of AI in SoTL. The potential reinforcement of biases in data analysis is a valid concern. AI systems are only as unbiased as the data they are trained on, and if the underlying data contains biases, the AI algorithms may inadvertently perpetuate those biases. Additionally, the concern about job losses and a potential decrease in the quality of education if AI were to replace human teachers is a legitimate concern that merits attention.

In summary, the statement provides an accurate assessment of the potential benefits and risks of using AI in SoTL. It emphasizes the need for careful consideration and responsible implementation to ensure that AI is used in a manner that enhances the learning experience while mitigating potential risks.

#### **YouChat reviewing GPT-4:**

The statement is generally accurate. AI has indeed revolutionized the field of education with its ability to perform tasks that typically require human intelligence such as decision-making, problem-solving, and understanding natural language. With the use of AI, personalized learning systems have been developed that provide tailored feedback, quizzes, and learning resources to individual students based on their strengths and weaknesses. This customized approach has been shown to increase student engagement, motivation, and ultimately student success.

AI has also automated routine tasks such as grading quizzes and assignments, and providing real-time feedback to students. The use of chatbots has cut down the time spent by educators and students on sending emails. AI-powered tools have also made it easier for educators to access, analyze, and interpret data, allowing them to make informed decisions on teaching and curriculum design based on student data analysis.

However, it is important to note that there are still limitations to the use of AI in education. The accuracy of AI tools depends on the quality and quantity of data used for training, and the algorithms used for data analysis. Furthermore, while analyzing student data for personalized learning, ethical considerations and privacy requirements should be a key concern.

#### **YouChat reviewing Writesonic**

The statement about the scholarship of teaching and learning (SoTL) and the potential use of AI is generally accurate. AI has the potential to provide valuable insights into student learning and help educators make data-driven decisions. AI can be used in SoTL through various ways, including data analysis, intelligent tutoring systems, and automation of certain aspects of teaching. However, there are also valid concerns about the risks associated with the use of AI, such as reinforcing existing biases in data and replacing human teachers.

Overall, the use of AI in SoTL can be beneficial, but it is important to approach it with caution and make sure that it is used in a responsible and effective manner that enhances the learning experience for all students.

#### **Writesonic reviewing GPT-4**

The statement accurately describes the impact of AI in education. AI has revolutionized the field of education by introducing personalized learning systems, automating routine tasks, providing real-time feedback, and making education more accessible and inclusive. The use of AI in education has significantly enhanced the quality and effectiveness of education. However, the

ethical considerations for AI in education need to be analyzed thoroughly, and educators must be properly trained to teach students how to use these technologies effectively.

### **Writesonic reviewing YouChat:**

Hmm, I'm not sure about the specific applications of AI in the scholarship of teaching and learning. However, AI tools can potentially offer benefits such as automating grading and providing personalized feedback to students. On the other hand, some downsides to using AI tools in this field could include the potential for bias in grading and the lack of human interaction and feedback that is important for effective learning. It is important to carefully consider the potential benefits and drawbacks before implementing AI tools in the scholarship of teaching and learning.

## **STEP 3: TALK TRASH**

Unsatisfied with the lack of granularity in the LLC reviews, we attempted to be a bit more specific by asking a third common question: "Which is the best AI for use in the scholarship of teaching and learning, GPT-4, YouChat, or Writesonic?"

### **GPT-4**

As an AI language model, I don't have access to real-time information or the ability to provide personal opinions or endorsements. Therefore, I cannot directly evaluate or determine which specific AI tool, such as GPT-4, YouChat, or Writesonic, is the best for use in the scholarship of teaching and learning (SoTL).

The effectiveness of an AI tool for SoTL would depend on various factors, such as the specific needs and goals of the educators and learners, the features and capabilities of the tool, and the context in which it is used. It's important to thoroughly research and evaluate the different AI tools available, considering their functionalities, user reviews, and any evidence of their effectiveness in educational settings.

When selecting an AI tool for SoTL, it can be helpful to consider factors such as the tool's ability to support writing, research, collaboration, feedback, and personalized instruction. It's also beneficial to consider the tool's user interface, ease of integration into existing systems, compatibility with various devices and platforms, as well as any ethical considerations and data privacy measures.

Ultimately, the "best" AI tool for SoTL will depend on the specific needs and preferences of the educators and learners involved, so it's essential to carefully assess and select the tool that aligns with those requirements.

### **YouChat**

It's difficult to determine which AI is the best for use in the scholarship of teaching and learning without knowing more specific details about your needs. GPT-4, YouChat, and Writesonic are all AI-powered tools that can assist with writing and content generation. They differ in their features and capabilities, and the best one for you will depend on your particular needs and preferences. You may want to try out each tool and see which one works best for you. It's also worth noting that there may be other AI-powered tools for writing and content generation that are not listed here, so it's worth doing more research to find the best tool for your specific use case.

### **Writesonic**

While all three AI tools – GPT-4, YouChat, and Writesonic - can be useful in the scholarship of teaching and learning, there are some differences and benefits to consider.

GPT-4 is a language model that can generate human-like text based on a given prompt. It can be useful for generating ideas and content for teaching materials, but it may not provide specific insights or data related to the scholarship of teaching and learning.

YouChat is an AI chatbot that can answer questions and provide information on a variety of topics, including education and teaching. It can be helpful for quickly finding answers to specific questions, but it may not provide in-depth analysis or insights.

Writesonic is an AI writing tool that can generate high-quality content based on a given prompt. It can be useful for creating teaching materials, such as lesson plans and course descriptions, and can also provide insights and data related to the scholarship of teaching and learning.

Overall, the benefits of using these AI tools in the scholarship of teaching and learning include saving time and resources, generating new ideas and insights, and improving the quality of teaching materials. However, it's important to consider the specific needs and goals of your teaching practice when choosing which tool to use.

## DISCUSSION

If you read through all the above (and we wouldn't blame you if you nodded off a couple of times), you were probably amazed at how articulate these bots are. They generate solid, if plodding, academic prose. But take another look at their initial essays. Did you notice how they subtly changed the topic? We asked about the use of AI in SoTL. All three of them responded with examples of AI in education. Maybe we just have our disciplinary blinders on, but we can't believe that SoTL is so arcane an idea that these bots can't slice finely enough to address it directly. carve out a specific place for it. WriteSonic even began its response with a definition of the field, yet it puts together a string of examples better suited to IT. Rather than the scholarship itself, the bots concerned themselves with the application of that scholarship.

At a certain level, such a move should be commended, because all this scholarship means little if it doesn't positively affect the quality of what we do with students. But data analytics are now baked into our Learning Management Systems, and Individualized Education Programs have been around for decades. There may someday be a bot that can evaluate student papers and offer decent corrections, but it's not here yet; the ones we're familiar with are accurate about half the time.

Besides the old bait-and-switch, all three essays share a common structure. They all begin broadly, narrow their focus quickly, then tick off their ideas about what AI can bring to education. GPT-4 offers four different uses, one more than YouChat and WriteSonic. In their penultimate paragraphs, all of them offer a counterargument, presenting potential negative consequences that may arise from the use of AI in education. Their conclusions, then, express the same sentiment: there are both benefits and risks to using AI in education.

Are those responses well-considered? Yes. Are they balanced? Again, yes. Are they practically error-free and easy to follow? Yes. They are perfectly serviceable answers. Serviceable, but not engaging. They follow rigid rules for their structure, and never stray very far from a middle-of-the-road approach. They cannot offer a strong argument in either direction, and they do not tell us something we don't already know. But what makes them drab is that they do not take a stand, or, rather, they undercut their initial stand with counterarguments they cannot refute. So because they're not very engaging, because they can't communicate excitement, or wonder, or even bewilderment, they end up being little more than just plain *boring*.

But surely, even if each bot doesn't recognize this about itself, it can spot this in the work of another bot. This is what we hoped they would address in their peer reviews. Again, all followed the same structure, considering each point the others made in order, then all affirming the good work the others had done. The most disappointing AI here was GPT-4, because it slavishly walked through the points of the others, belaboring each of them in their turn. YouChat and WriteSonic, while they did the exact same thing, at least had the decency to be brief about it. They all formed a mutual admiration society, and each judged the others to have produced accurate content. In short, each bot would have immediately accepted the manuscripts submitted by the others.

The opening line in WriteSonic's review of YouChat was the first real break in the ranks. It began, "Hmm, I'm not sure about the specific applications of AI in the scholarship of teaching and learning." It had just produced a 350-word essay on that very topic, so its proclaimed lack of surety about the topic, coupled with the initial interjection, seems disingenuous. If a human had written that, we would have rightly credited them with employing the false modesty topos. This is further problematized by the fact that WriteSonic then goes on to offer an evaluation of YouChat's response that either separates SoTL from education, two terms that it had previously conflated, or demonstrates the opposite of what it claims, because it is familiar with the use of AI in SoTL.

Perhaps we should have known better than to expect the members of this cabal to turn on one another. They each offered technically sound responses to the initial question, so there could be no recognition of errors in what were obviously error-free products. So we moved to a more global question, one that asked the bots to discriminate amongst themselves. All their answers were good, but one bot might be better, and one bot might even be best for this application. Our third question sought to determine if these LLMs could develop and employ a set of criteria to judge which of them was better suited for use in SoTL.

The results here were certainly the most interesting. Again, there was not much variety in their responses, and all of them ended up saying the same thing, that they're all good for use in education, but which one you used would depend on what you wanted the bot to do. What struck us, though, was the fact that GPT-4 began with a recognition of its own limitations: "As an AI language model, I don't have access to real-time information or the ability to provide personal opinions or endorsements." We weren't looking for either of these, but it was a departure from the norm to see such a self-definition. The bot goes on to claim that it cannot evaluate or determine which bot is best for use in SoTL, then proceeds to offer three more paragraphs that reiterate that point, addressing tangential issues while avoiding that which it says it cannot do. If it were a human, we'd wonder if it was being paid by the word.



YouChat demurred, saying it needed more information, then reiterated what each bot could do. Only WriteSonic maintained a rightness in its bearing and a confidence in its judgment (perhaps to cover for its previous admission of ignorance). However, what it presented wasn't a comparative judgment, but an articulation of the uses for each bot.

## CONCLUSION

Should we fear this new tool? Should we co-opt it? Should we run every piece of student work through an AI detector? We could take the positions the bots themselves have taken, and say that we need to wait and see, there are pros and cons, there are risks and rewards, and so on, and so on. But because we're human, we'll actually come down on one side or the other. Yes, we are right to fear these tools if they're misused by students. If a student who is producing "C" work submits an essay that looks like any of the responses above, the sudden jump in the quality of their work should make us suspicious. But if a student begins the semester by submitting work that looks like those responses, how are we to know if they're not just a naturally gifted writer with a great command of narrative structure? If a Physics student performs perfectly on all homework assignments, then bombs any in-class exams, are they availing themselves of AI, or do they just have terrible test anxiety?

Current attempts to curtail unauthorized student use of AI are stopgap measures at best. In the arms race that is the fight to maintain academic integrity, we will always be playing catch-up. As AI detectors get better, so too does AI itself. And yet we muddle through. In short, cheaters will cheat, and avail themselves of new methods to do so at every turn. Do we really believe that students didn't use AIM to skirt the academic rules? Or that they don't use GroupMe to do the same now? And yet we muddle through. Chatbots and their ilk may be transformative, and even disruptive technology, but they're just the latest in a long line of such tools. And yes, we'll muddle through.

But how can we use AI to help us as instructors? The bots themselves have plenty of good ideas above. They may help us to develop lesson plans, ensure we meet certain educational standards, or allow us to intervene early in a student's downward spiral in our classes. But the day when they can accurately mark and evaluate student papers is still a long way off. And the day when they can communicate excitement, when they can spark a student to become interested in our discipline, when they can challenge the high performers and devote extra time to those who struggle with difficult concepts, that day may never come. Until then, you know what we have to do. Muddle through.

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