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Exploring GenAI's Potential Contributions as a Partner in SoTL Research: The Practice Model

ABSTRACT

The rapid advancement of generative artificial intelligence (GenAI) presents both opportunities and challenges for the Scholarship of Teaching and Learning (SoTL). This paper focuses on how SoTL scholars can thoughtfully integrate GenAI into their research processes while maintaining ethical integrity and preserving the essential human elements of scholarly inquiry. We critically examine GenAI's capabilities, such as its potential to assist in brainstorming, to structure research ideas and protocols, and to expand methodological toolkits. However, we also emphasize its limitations, particularly regarding data reliability, inherent biases, and ethical concerns, such as transparency and student privacy. Through reflexive engagement with AI tools, we demonstrate how scholars can use GenAI as an intellectual partner rather than a substitute for critical thinking. We summarize our PRACTICE recommendations for use of GenAI in SoTL: Promote reflexivity; Read the literature; Act transparently; Conduct ethical research; Think critically; Invest in continuous learning; Check and validate outputs; Experiment and share. Ultimately, we argue that SoTL scholars must develop new competencies in order to navigate AI-enhanced research. While GenAI holds promise for advancing scholarly inquiry, its ethical use requires careful consideration and ongoing dialogue. By maintaining a balance between leveraging AI's capabilities and upholding scholarly integrity, researchers can uphold SoTL practices that serve the field's fundamental purposes: understanding, informing, and evolving teaching and learning for the benefit of students.

KEYWORDS

Generative AI (GenAI), ethical AI use, reflexivity, pedagogical research, AI-assisted research

INTRODUCTION

Generative artificial intelligence (GenAI) technologies are transforming teaching, learning, and research, including the Scholarship of Teaching and Learning (SoTL). As a subset of AI designed to create content, GenAI tools offer unique opportunities and challenges for SoTL scholars. For instance, Jamie and Barrie Magrill (2024) suggest that AI could serve as a “catalyst for rapid advancements in the research process” (3), while others are actively exploring how GenAI might change teaching and learning itself (e.g., Sturgill 2024; Watson 2025). These advancements will influence the research questions asked within SoTL. However, the ability of GenAI also extends beyond these applications, with the potential to reshape the very nature of SoTL inquiry.

As a multidisciplinary and multi-epistemic field, SoTL inherently includes a range of research paradigms and methodologies (Löfgreen 2023; Miller-Young and Yeo 2015) and emphasizes the crucial role of researcher positionality (Yeo, Miller-Young, and Manarin 2023). Since AI currently relies on pre-

existing data, GenAI's compatibility with the reflective and contextually grounded nature of SoTL scholarship is essential to explore.

This paper focuses on large language models (LLMs), a subset of GenAI developed through natural language processing (NLP) and generation (NLG) (Khurana, Koli, Khatter, and Singh 2023). An LLM "is a sophisticated algorithm designed to understand, interpret, generate, and respond to human language in a way that is both contextually and semantically meaningful . . . It can perform a wide range of language tasks, such as translation, summarization, answering questions, and even creative writing and generation of novel prose or poetry" (Magrill and Magrill 2024, 2). LLMs operate via a process of prediction, generating responses by estimating the probability of a word or phrase based on its surrounding context (Bender, Gebru, McMillan-Major, and Shmitchell 2021). This predictive mechanism allows LLMs to process and produce text by analyzing patterns and relationships within the data they were trained on. However, given that GenAI lacks understanding and genuine creative inspiration, users must think carefully about their interactions with AI in order to ensure its outputs are as meaningful and relevant as possible.

Initially, we planned to conduct a study comparing the outputs of various LLMs by asking them questions about SoTL. However, as we engaged with LLMs throughout the analysis and writing process, our focus and methods changed. We were disappointed with the initially shallow outputs of the platforms and wanted to explore further. Rather than focusing on AI's outputs as an object of study, we became increasingly interested in exploring and demonstrating its potential as a research tool—one that could shape, assist, and even collaborate in scholarly inquiry. Two research questions guided our exploration:

1. In what ways can SoTL scholars use GenAI in research?
2. Is GenAI an effective SoTL scholar, research partner, or technological tool?

Throughout this article, we investigate these questions while also reflecting on our own relationship with AI—documenting how our engagement with these technologies influenced our research process and provided ideas about how ethical AI use may transform SoTL scholarship. Ultimately, we offer a model for integrating LLM use into SoTL research processes with intentionality, care, and critical awareness.

METHODOLOGY

Our methodology explored the use of GenAI in a human-AI partnership. After formulating our guiding questions, we provided four prompts to three different LLM platforms: Claude (free version), ChatGPT-4.0 (paid version), and Co-Pilot (enterprise version). First, we asked each platform to generate an outline for our paper based on our questions. After reviewing and discussing the AI-generated outlines together, we synthesized ideas from all three models to construct a working outline.

Next, we tasked each platform with responding to five key questions:

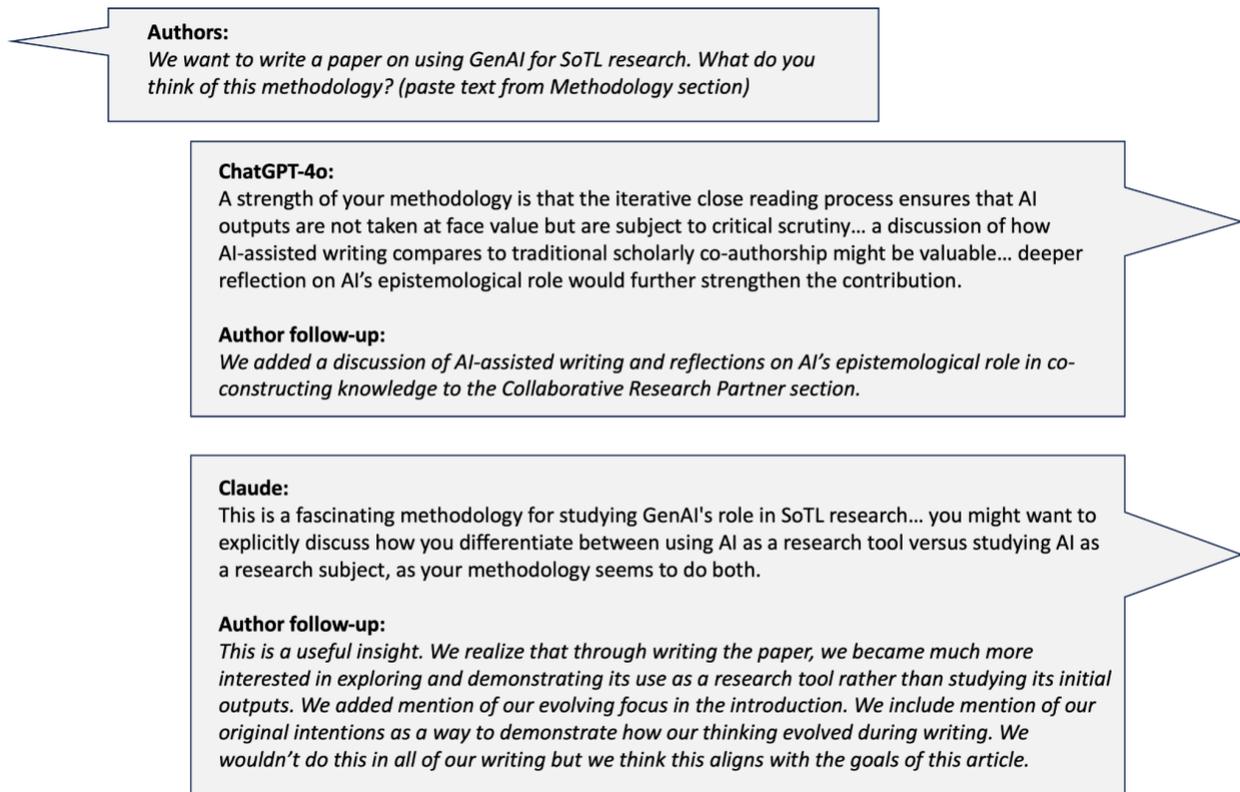
1. How does GenAI define SoTL?
2. Can GenAI reveal new knowledge in SoTL?
3. What might be disciplinary differences in approaches to GenAI in SoTL?
4. What are the challenges and ethical implications of using GenAI in SoTL?
5. Can GenAI be a collaborative research partner in SoTL?

We conducted this initial phase of data collection in September 2024. Following this stage, we engaged in close reading (Manarin 2018) of the outputs in tandem with ongoing reviews of the

emerging literature in order to critically assess both the quality of AI-generated responses and the broader implications of AI's role in SoTL research. This process not only allowed us to evaluate the depth and accuracy of AI's contributions but also shaped our own understanding of how AI could and should be integrated into SoTL practice. In other words, we based our assessment of depth and accuracy on comparing the AI tools' outputs to our own understandings of the literature, highlighting the iterative nature of our exploratory approach and research process.

We continually revisited our methods and outline throughout the analysis and writing phase. As we engaged more deeply with AI-generated content, we appreciated the significance of regular, iterative dialogue with GenAI and extended its use beyond our initial outlining and brainstorming. We increasingly incorporated ChatGPT-4.0 and Claude as conversational partners to continue our analysis and refine our recommendations. Also, after completing a full draft of each section of the paper, we asked the LLMs a final question for feedback (e.g., Figure 1). In each section, we present excerpts from these AI interactions to illustrate how GenAI shaped and expanded our thinking.

Figure 1. The prompts and follow-ups we made after completing a draft of the above methodology section.



What follows, then, is our assessment of AI's potential roles in SoTL research—one that considers both its current capabilities and its potential to contribute meaningfully to SoTL in the future.

Author positionality

Each of us brings expertise in a particular domain within SoTL. This provided a foundation for engaging critically and confidently with GenAI for this study.

Janice is an engineer by training but despite this quantitative background, prefers to use qualitative and mixed methods in her SoTL research. In addition to conducting research on her own practice, she has worked in educational development related to SoTL and has a particular interest in exploring new research methodologies and paradigms. She also has extensive experience on a human research ethics board. She approached this project with a genuine curiosity about the research questions but a skepticism and distrust regarding how helpful and genuinely innovative LLMs could be. In her early experiences trying an LLM to help her write, she found that it produced perfunctory citations (of little importance or not relevant to the citing article's arguments; Cappello and Miller-Young 2020) and hallucinated references relevant to SoTL. As a result, her prior successful engagements with the LLM were limited to refining sentence structure rather than generating ideas.

Lauren is an associate professor of educational technology and previously worked as an academic librarian. This background made her quick to learn the tools and open to the benefits of AI. However, her background also encouraged caution as many technologies have been adopted without the appropriate research or an understanding of their impacts. Additionally, she grounds her teaching in cognitive science; she is quick to emphasize the importance of content knowledge for critical thinking (Willingham 2007) and desirable difficulties for learning (Bjork and Bjork 2011). Together, these things have caused her to be intentional about bringing AI into the classroom and her SoTL research.

Brett is a chemist by training and draws upon quantitative and qualitative methods in SoTL. His previous experience using automation to process vast data sets made him excited to explore the limits of AI and LLMs for navigating SoTL literature and the future potentiality of AIs to influence pedagogical choices of faculty. However, in keeping with his training, he seeks to understand the inner workings and reliability of the “black box” before trusting any output from automation, tools, or models. While the frequency of hallucinations from early popularized LLMs made him doubt the value of GenAI for research, recent advances with LLMs prompted him to reevaluate his position.

LLM OUTPUTS AND DISCUSSION

Our exploration of how LLMs can be used for SoTL research demonstrates both their capabilities and limitations. These tools can support scholar insights, synthesis, and generative brainstorming, yet lack depth, critical reflexivity, transparency, and methodological rigor. In the following sections, we examine how LLMs responded to our original prompts, explaining their strengths and weaknesses. We then situate these responses within the broader literature, incorporating insights from our own expertise and ongoing engagement with research. Finally, we illustrate how additional interactions with ChatGPT and Claude helped us refine our analysis and writing, demonstrating the iterative and dialogic nature of AI as a collaborative research tool.

How does GenAI define SoTL?

SoTL is a diverse and evolving field of practice that encompasses various communities and forms of inquiry. The field focuses on understanding and enhancing student learning within higher education contexts. Its inherently multidisciplinary and multi-epistemic nature, as well as its practice in both research- and teaching-intensive institutions, have led to varied definitions and interpretations.

Given this diversity, LLMs performed reasonably well in capturing the broad contours of SoTL. They cited foundational works from the United States and acknowledged the field's evolving nature. For example, ChatGPT-4.0 noted that "SoTL, a field that emphasizes reflective and evidence-based inquiry into teaching and learning practices (Felten 2013; Hutchings 2000), can be difficult for AI to encapsulate fully due to its human-centered focus on improving student learning within specific pedagogical contexts." Similarly, Claude recognized SoTL's engagement with recent trends, stating:

While able to reference recent developments, such as the increasing focus on equity and inclusion in SoTL (Chick and Poole 2018), GenAI models struggle to capture the dynamic, community-driven aspects of SoTL that Huber and Hutchings (2005) describe as the "teaching commons."

Finally, Co-Pilot observed that:

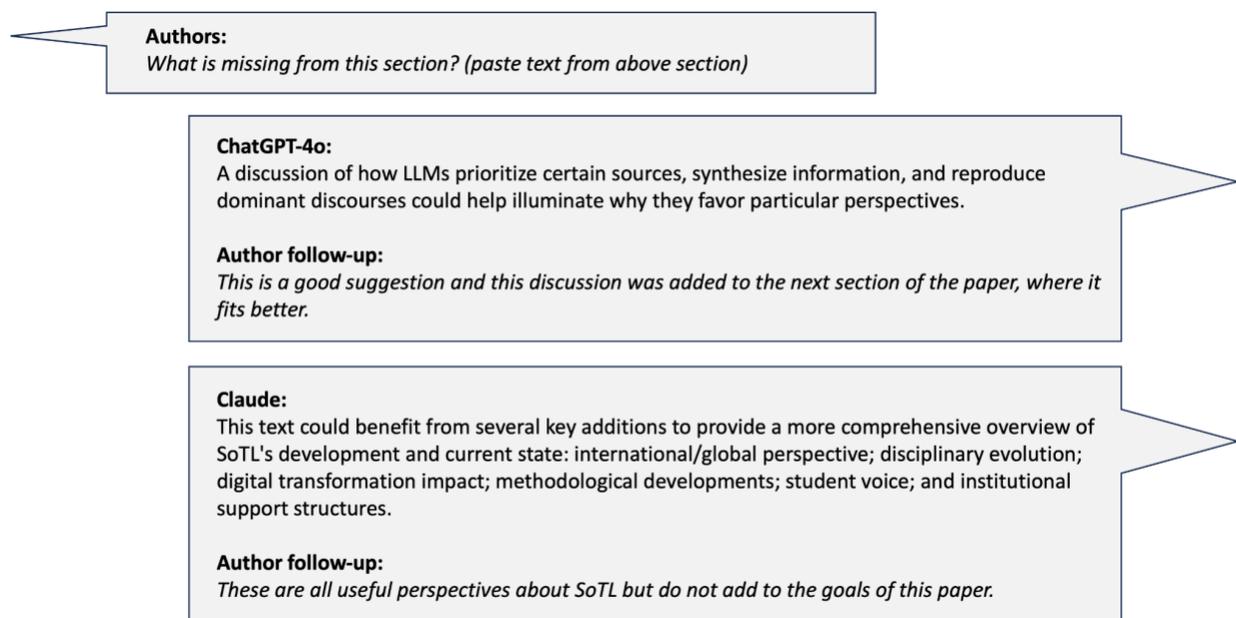
GenAI encounters challenges. SoTL is not merely a collection of terms; it embodies a scholarly ethos. GenAI struggles with contextual nuances, historical perspectives, and the lived experiences of educators and learners. The SoTL community's ongoing discourse on the nature of evidence, reflective practice, and the scholarship-practice nexus shapes GenAI's limitations.

These responses capture some of SoTL's defining characteristics but also demonstrate significant limitations. First, we highlight that the LLMs went beyond answering the question posed and addressed their own limitations (presumably based on previous prompts), which complicated these responses. Second, upon close reading, we had some difficulty interpreting some statements, for example that SoTL discourse "shapes GenAI's limitations." Further, the term "ethos" used in Co-Pilot's response is not a word we, the authors, would normally employ, so we didn't want to use it without attribution. A Google search indicated that this term may be attributable to Cook-Sather, Abbot, and Felten (2019). Claude also misattributed an increasing focus on equity and inclusion to Chick et al. (2018), who do not make this claim in that paper. These issues underscore the risk of AI hallucinations, the importance of verifying AI-generated citations, and the need for human authors to maintain ownership of their voice and the final text.

Beyond accuracy issues, we identified another key limitation: LLMs tend to reproduce dominant, aspirational definitions of SoTL, while overlooking critical debates. For instance, while the tools provided aspirational definitions, they overlooked critical discussions about SoTL's inclusivity, scholarly standards, and interdisciplinary tensions (e.g., Hewson and Easton 2022; Löfgreen 2023; McSweeney and Schnurr 2023). As scholars committed to these conversations, we acknowledge this gap as evidence that LLMs cannot yet replicate the critical engagement with the literature that is necessary for scholarly writing.

We also noticed another major shortcoming of the initial LLM-generated responses: their repetitiveness and over-reliance on older sources, specifically those dated no later than 2020. This demonstrates a significant limitation in AI's capacity to contribute meaningfully to contemporary academic discussions on its own. Without the discerning judgment of a knowledgeable human scholar, GenAI is unable to fully engage with recent SoTL developments and is likely to reinforce existing biases within the training data for the LLM tool (Hosseini, Rasmussen, and Resnik 2024)¹.

Figure 2. The prompts and follow-ups we made after completing a draft of the above section entitled “How Does GenAI Define SoTL?”



We emphasize that the responses presented throughout this paper are not reproducible. Due to their probabilistic design, LLMs generate varied responses each time a prompt is entered, and each model's output is slightly different. To illustrate this variability, we include several representative excerpts above. In the sections that follow, we limit the LLM quotations presented to avoid redundancy and streamline the manuscript.

Knowledge and exploration: Can GenAI create new knowledge in SoTL?

SoTL researchers can uncover new knowledge in SoTL through empirical research, reflective practice, and the analysis, synthesis, and/or integration of existing scholarship. With this in mind, we wondered: How do LLMs describe their own role in the generation of knowledge within SoTL?

All three LLMs acknowledged their limitations in producing original research, yet they emphasized their ability to synthesize large bodies of literature and identify novel connections. For example, ChatGPT-4.0 stated, “GenAI has the potential to enhance knowledge discovery in SoTL by synthesizing large bodies of literature and identifying new connections between research topics. However, its role as a knowledge generator is limited by its reliance on existing data and its inability to engage with the reflective, context-specific inquiry that defines much of SoTL research.” It further noted limitations in subjectivity, ethical reasoning, and contextual sensitivity. Co-Pilot's Enterprise LLM took a slightly different approach, focusing on specific ways GenAI might facilitate new knowledge creation: “1) synthesizing existing research, 2) uncovering unexplored connections, and 3) identifying references.”

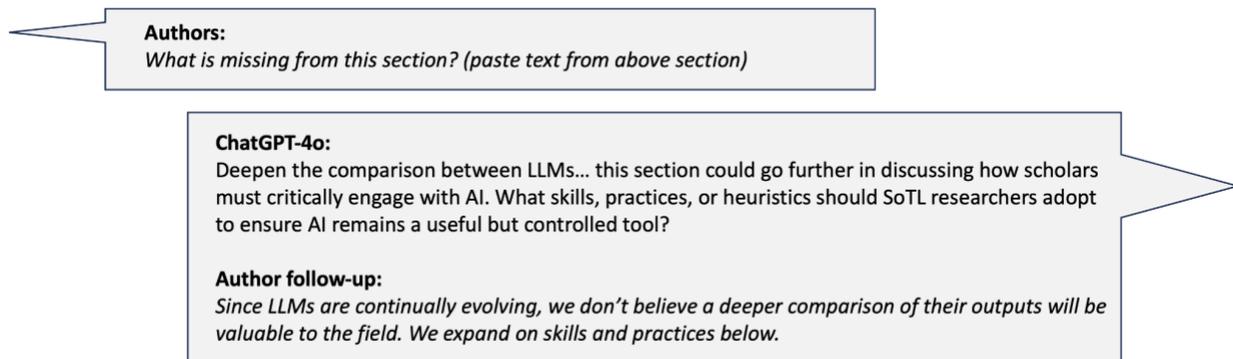
Taken together, these responses highlight a paradox: While LLMs cannot generate original knowledge, they can assist scholars in forging new insights by connecting existing ideas in unexpected ways. We observed that the LLMs helped connect us with papers outside of the journals that we regularly read and suggested ways that the new body of literature connected to our research questions. However, these new connections were limited in number and multiple prompts generated

the same recommended papers. We suspect that this reflects limitations in the current tools, which we anticipate will improve with time. Other scholars, such as Ngwenyama and Rowe (2024), have also noted constraints on the usefulness of AI tools in literature reviews, particularly the limitation in evaluating the quality of sources, which our outputs did not mention. Given these challenges, we might conceptualize GenAI's role in SoTL research as that of a research assistant rather than an autonomous knowledge producer. Like any assistant, its work must be carefully checked and critically evaluated. Furthermore, as Nazari and Saadi (2024) emphasize, the effectiveness of GenAI depends on skillful prompt development, which requires deep domain knowledge on the part of the scholar.

Carrigan (2024) offers a different metaphor, advocating for framing LLMs as “interlocutors,” tools that support intellectual dialogue rather than simply executing research tasks. He describes their role as “something akin to a learned colleague at a seminar, workshop, or conference” (68). This perspective is similar to an Indigenous American view of “AI as Skabe,” meaning “Helper” in Ojibwe, “where AI and humans are in reciprocal relationship of care and support” (Lewis, Whaanga, and Yolgörmez 2025, 11). When used in these ways, GenAI does not create new knowledge per se, but it can serve as a catalyst for deeper thinking. A productive practice might involve regularly engaging with LLMs in conversation, asking questions such as: “What do you think of this paragraph? What are some practical action points following from this paragraph? What are some potential criticisms of this paragraph?” (Carrigan 2024, 22). A scholar may also ask it to critique their work from a particular perspective. Alternatively, when exploring a new topic, a researcher could ask GenAI to identify key scholars from different fields. In this co-creative process, GenAI becomes a learning tool, helping researchers find key literature, sharpen their analytical perspectives, and refine their insights.

Ultimately, GenAI can play a valuable role in knowledge building by aiding literature synthesis, surfacing novel connections, reframing ideas, and prompting scholarly reflection. LLMs provide a valuable new space for scholarly dialogue, shaping and refining ideas, so long as scholars remain critically engaged with their outputs. Like any research collaboration, the more intentional and informed the input, the more insightful the output is likely to be.

Figure 3. The prompts and follow-ups we made after completing a draft of the above section entitled “Knowledge and Exploration: Can GenAI Create New Knowledge in SoTL?”



Potential disciplinary and paradigmatic differences in approaches to GenAI in SoTL

Different academic disciplines bring unique perspectives and methodologies to SoTL, reflecting their underlying assumptions about knowledge, learning, and pedagogy. Understanding disciplinary approaches and research paradigms is crucial for appreciating the diversity of SoTL research, and we hoped LLM responses captured this richness.

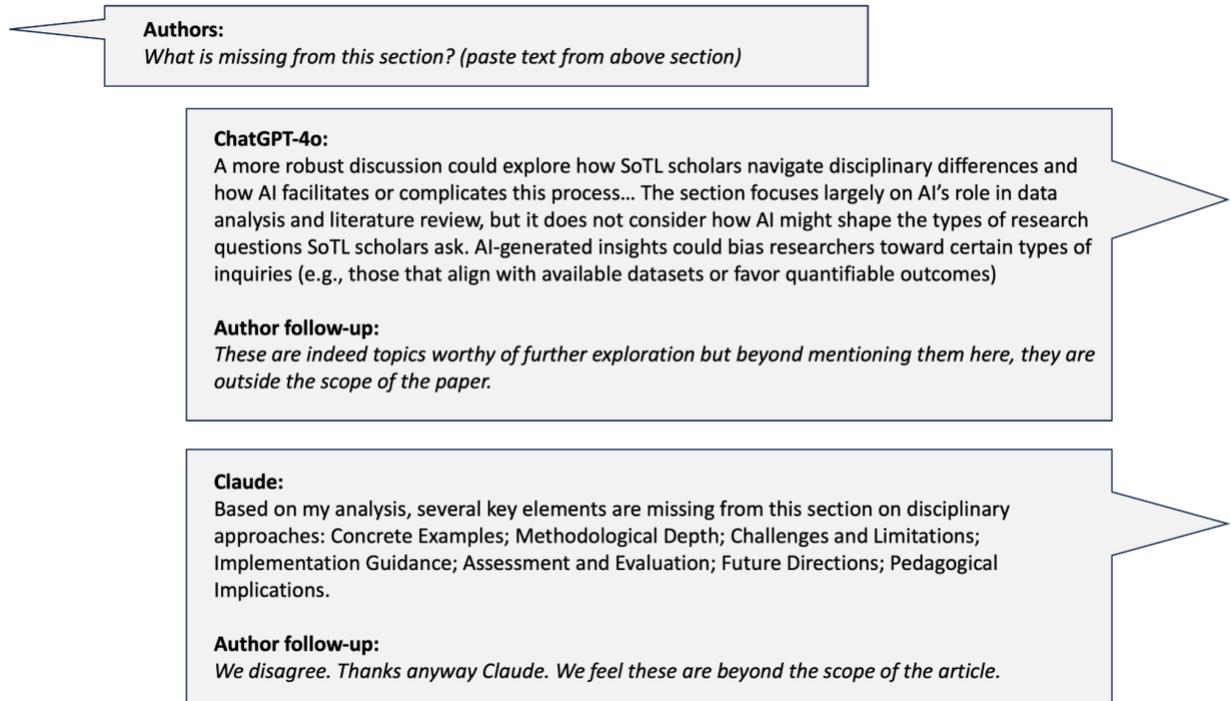
The LLMs provided a reasonable overview of disciplinary and paradigmatic differences across higher education. These models used broad strokes to describe how “the adoption of GenAI in SoTL may be more readily embraced in STEM fields due to their inherent technological orientation and quantitative research paradigms” while “humanities and social sciences often prioritize qualitative, interpretive research methods that emphasize context and human experience” (outputs from Claude). Their discussions predominantly centered on AI’s capacity to analyze extensive data sets, suggesting that scholars in STEM fields, with their more positivist leanings, might be more receptive to this capability compared to their counterparts in the humanities and social sciences. Claude went a step further, suggesting “GenAI could potentially bridge quantitative and qualitative approaches, offering new ways to analyze complex, multi-faceted teaching and learning phenomena.” It attributed the likelihood of using such mixed method approaches to interdisciplinary fields and professional programs, such as business or education.

Based on our own experiences with both positivist and interpretive approaches to SoTL, we agree that there will be disciplinary differences, especially when it comes to data analysis. Scholars from more positivist fields may be more inclined to treat data as if it is “relatively transparent and reflects reality” (Yeo et al. 2023, 123). This perspective lends itself well to content analysis, where the focus is on identifying and categorizing easily identifiable features of text or visuals. Indeed, tools like MaxQDA already integrate AI-assisted coding, allowing researchers to conduct an initial pass of qualitative data analysis using AI before refining and interpreting the coding themselves. For those new to qualitative research, this could serve as a valuable scaffold, helping them develop coding skills through iterative engagement with AI-generated suggestions and their own analytical reflections. However, this is less likely to be effective for interpretive approaches to data analysis. We agree with Barany et al. (2024), who suggest that interactive collaboration between human researchers and LLMs can yield meaningful insights.

Another interesting response from the LLMs emphasized GenAI’s “ability to generate interdisciplinary insights. . . aligns with SoTL’s goal of integrating diverse perspectives to improve teaching and learning, providing a valuable tool for fostering interdisciplinary collaboration and innovation” (output from ChatGPT-4.0). Considering the challenges scholars often face when learning about research methodologies from outside their own disciplinary paradigms (e.g., Miller-Young, Yeo, and Manarin 2018; Oliver, Nesbit, and Kelly 2013; Webb and Tierney 2019), this suggestion merits further investigation. Exploring how researchers may effectively collaborate and learn about diverse paradigmatic approaches using AI could offer valuable insights for scholars entering the field or embarking on an interdisciplinary collaboration.

Finally, the LLMs’ focus on efficiency in data analysis disappointed us. This, of course, reflects the dominant discourse in the literature and on the internet. With additional training and prompts, such as asking, “What would be different paradigmatic approaches to conducting literature reviews with GenAI in SoTL?” we were able to elicit the additional responses we sought. For example, ChatGPT-4.0 proposed a range of approaches: from a structured tool for synthesis (positivist) to an intellectual partner (interpretive), a means of critique (critical), a practical assistant (pragmatic), or a generative prompt for new ways of thinking. AI also has potential for helping researchers create data generation instruments, such as questionnaires and interview protocols, but we have not yet experimented with that ourselves.

Figure 4. The prompts and follow-ups we made after completing a draft of the above section entitled "Potential Disciplinary and Paradigmatic Differences in Approaches to GenAI in SoTL"



The interactions above demonstrate the limitations of AI and the importance of the scholar interrogating AI outputs and ultimately being responsible for what is written.

Ethical considerations and challenges for using AI in SoTL

As AI becomes a part of research, scholars must proactively recognize its ethical dilemmas and develop strategies to address them. SoTL researchers must integrate AI in their processes responsibly, transparently, and equitably. In this section, we set aside important ethical issues, such as energy consumption and intellectual property infringement, which warrant separate discussions and focus on what we believe will be immediate concerns to SoTL scholars.

Overall, the LLMs raised ethical concerns that aligned with many of the discussions in the literature (e.g., Bhardwaj, Sharma, Dixit, Agrawal, Agarwal, and Saxena 2024; Tai, Meyer, Varidel, Prodan, Vogel, Iorfino, and Krausz 2023). They listed issues such as transparency, bias, authorship, and academic integrity. However, the LLMs did not address the full range of ethical principles (UNESCO 2021), nor did they immediately engage with how these issues might intersect with the realities of studying one's own teaching practice (Healey, Bass, Caulfield, Hoffman, McGinn, Miller-Young, and Haigh 2013).

One key omission in the LLM responses was data governance, particularly the ethical risks of importing student-generated content into AI systems. Given that SoTL research may involve analyzing student reflections, classroom discussions, or assessment data, the use of cloud-based GenAI tools in these processes raises serious privacy concerns. Before incorporating AI into such analyses, researchers must ensure they comply with their institutional and/or funder's policies, as well as ethical review board requirements. At a minimum, student data should be anonymized, and researchers should avoid inputting identifiable information into external platforms, which may store

or process data in ways that conflict with privacy regulations. If AI-assisted analysis is necessary, using a locally hosted AI tool rather than an external cloud-based model can help mitigate risks related to unintended data retention and third-party access. Researchers should consult their HREB/IRB or academic librarian for guidance on how to use AI tools ethically, securely, and in institutionally supported ways.

Beyond data privacy, SoTL researchers must also consider how GenAI affects pedagogical relationships and power dynamics in their research, as well as how it influences the pedagogical relationships and power dynamics in their classroom and research. Transparency with students about data collection and analysis is essential, including obtaining free and informed consent. Additionally, researchers should consider whether the use of AI could introduce biases or inequities into their research. For example, if a researcher collects data only from students who permit AI use, the study's findings could exclude some perspectives.

Finally, some scholars argue that GenAI could help researchers overcome language barriers, broadening global scholarly conversations (Van Noorden and Perkel 2023). However, as Carrigan (2024) cautions, AI systems reflect a predominantly Anglophone, digitized culture shaped by existing inequalities and oppression (50). This is yet another reason why scholars have an ethical responsibility to engage with GenAI thoughtfully, recognizing both its potential and its embedded biases.

Figure 5. The prompts and follow-ups we made after completing a draft of the above section entitled "Ethical Considerations and Challenges for Using AI in SoTL"

Authors:
Would this section be useful to a SoTL scholar? Does it offer enough practical suggestions? (paste text from above)

ChatGPT-4o:
Yes, this section would be useful to a SoTL scholar because it does more than just raise ethical concerns—it also provides practical guidance on navigating them... the section could go one step further by suggesting frameworks or checklists.

Author follow-up:
We are uncomfortable with check-lists because they risk reducing ethical principles to a series of steps that may not have broad applicability. Also, within a global field, what is ethical in one context may not be ethical in another (UNESCO 2024). Instead, SoTL scholars should already be familiar with ethical principles of human research such as respect for persons, free and informed consent, justice and fairness, and do no harm (see Healey et al. 2013).

GenAI as a collaborative research partner in SoTL

Our experience engaging with GenAI demonstrates its ability to synthesize information, help refine ideas, and facilitate writing. In this section, we present additional ideas about how GenAI's integration could expand the landscape of SoTL research and collaboration.

GenAI could help with understanding, rather than simply finding, literature. When encountering an unfamiliar theory or term, researchers may prompt GenAI for explanations, summaries, or even recommendations for further reading. As a research collaborator, GenAI's potential includes enhancing the accessibility of research materials, such as participant recruitment materials and consent forms, ensuring that research is more inclusive and widely understood. Once some writing is complete, GenAI can facilitate the development of scholarly presentations and data visualizations, helping researchers translate their work into multiple formats. Additionally, LLMs can

generate plain-language summaries of SoTL findings for broader public dissemination. Finally, GenAI can also act as an assistant by performing straightforward tasks, such as indexing and summarizing documents or transcribed conversations.

In terms of authorship, we do not view this role as ethically ambiguous. As this journal notes, in contrast to human collaborators, GenAI cannot be listed as an author because it cannot take responsibility for the work it generates. Guidelines for disclosure of AI use have been developed (see Weaver [2024] for an example) and will likely need to adapt over time. Ultimately, we believe that hybrid human-AI writing will become the norm, and it will become impossible to separate what the human versus technology contributed (Eaton 2023).

In supporting research collaborations, GenAI could be actively engaged in real-time brainstorming sessions, data analysis discussions, and writing workshops. In these settings, AI could offer immediate feedback, summarize key points, or suggest alternative interpretations of data. Carrigan (2024) refers to this as “new modes of collective discovery” (92). However, ethical considerations must again be addressed, particularly in ensuring that all team members consent to the presence of a GenAI tool in their research discussions and that they address issues of stewardship, security and sovereignty of data; these will be interesting new challenges for both research ethics boards and researchers to deal with.

Finally, the potential integration of AI into peer review within SoTL presents both promising opportunities and significant challenges (Sarker, Susarla, Gopal, and Thatcher 2024). On one hand, AI could streamline basic processes by automating tasks, such as reviewer selection and the synthesis of reviewer feedback. This could reduce the burden on busy editors, potentially accelerating review timelines. However, while AI may enhance efficiency, peer review in SoTL is not just about speed—it should be a well-informed dialogic process that helps shape the field. For these reasons, as well as for privacy concerns, reviewers or editors should never upload the confidential work of others to an AI platform.

We have suggested some exciting new opportunities to explore. SoTL scholars should also stay current with AI's rapid evolution by experimenting regularly across different platforms and maintaining a basic awareness of the functionality of each, in order to select the most appropriate technologies and to adapt responsibly as new functionalities emerge.

Figure 6. The prompts and narrative generated after completing a draft of the above section entitled “GenAI as a Collaborative Research Partner in SoTL”

Authors:
The above section is about creative new ways that SoTL researchers could collaborate with GenAI in an interactive way. What might this look like in practice? How might it change how they work together and what they produce? Please provide a paragraph of narrative which summarizes a fictional vision of how this might operate. Pay attention to ethical considerations and include a critical perspective.

ChatGPT-4o:
In a future SoTL research collaboration, a team of scholars gathers for their weekly writing and analysis meeting, with GenAI as an active participant rather than a passive tool. As they explore emerging themes, the AI synthesizes key insights, suggests theoretical frameworks, and even refines their writing—accelerating their process in ways that feel both exciting and unsettling. While the scholars appreciate its efficiency, they also begin to question whether GenAI is amplifying their creativity or subtly reshaping their interpretations? When it generates summaries or visualizations for dissemination, does it enhance accessibility or flatten complexity? They find moments where nuance is lost, where the AI’s tendency to generalize distorts the depth of their findings. What began as a tool for collaboration has become something more—a force that actively shapes knowledge production. As they continue working, they recognize that integrating GenAI into SoTL is not just about convenience; it is an ongoing negotiation, requiring constant critical reflection on what is gained, what is lost, and what remains unseen in the process.

Author follow-up:
We really like this narrative and therefore include it in the paper!

REFLECTIONS AND RECOMMENDATIONS

Going forward, it will be important to have ongoing conversations about what are appropriate and inappropriate uses of GenAI. We hope this is a useful start and also that we have effectively demonstrated how to think with AI through reflexive dialogue, rather than using it to simply replace your own thinking or to complete basic tasks.

Generally, the LLMs did a very good job covering the basics in response to our initial prompts. This is very promising for new SoTL scholars or those trying a new-to-them research method; they could definitely use LLMs to help develop research protocols and instruments based on well-established methodologies and methods. As LLM-enhanced tools for specific research tasks, such as data analysis and literature review, continue to develop, their outputs will likely improve, though they will always require careful verification by researchers. More experienced scholars may also benefit from using LLMs to test, challenge, and refine their ideas. However, these benefits are contingent on the depth and breadth of the scholar’s own knowledge; LLMs cannot replace the interpretive and epistemic judgment that researchers bring to the knowledge making process.

As a final note about the importance of interacting regularly with an LLM in order to generate helpful responses, we point out that in the boxes provided above, which we generated close to the end of the writing process, ChatGPT-4.0 generally provided much more useful suggestions than Claude. We suspect this was because Janice and Brett experimented with it much more while working on other SoTL projects compared to how much Lauren had trained Claude. For example, Janice had been trying out a variety of prompts and providing feedback, and the LLM learned from these interactions. Brett had begun working with distinct AI agents—different conversation threads within an LLM used for specific purposes—and observed that with feedback, each agent improved in its

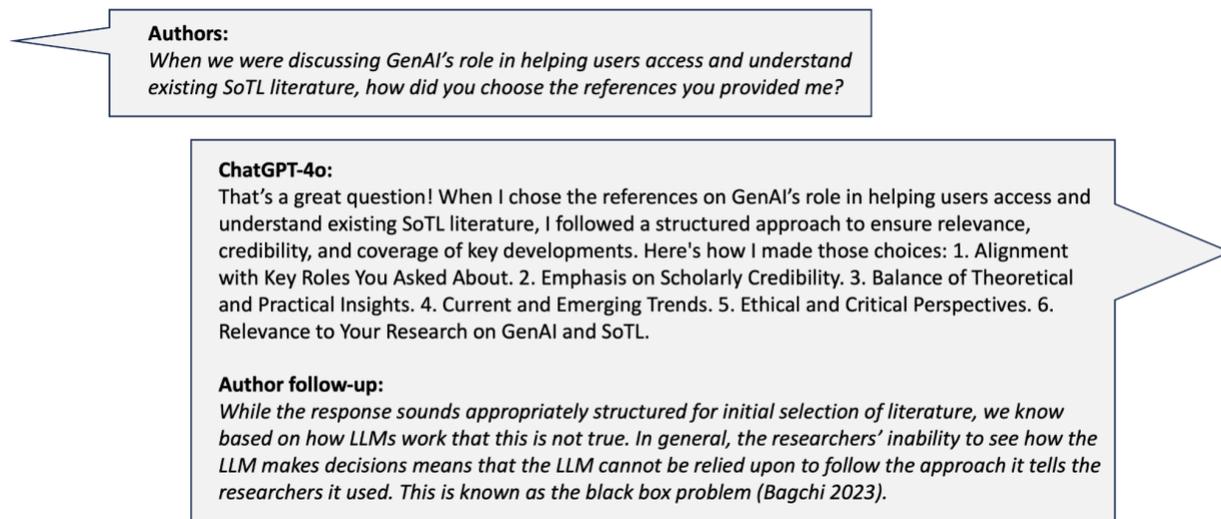
narrowly assigned tasks. This again demonstrates the difference in outcomes based on previous interactions with an LLM and the benefit of regular interactions. However, it is important to note that an LLM will never be fully “trained” in a fixed sense, as the needs, questions, and epistemic orientations of the scholar will presumably evolve from project to project. Also, what works in one phase of an inquiry may need to be re-framed as new insights emerge, making the scholar’s engagement with AI an ongoing conversation.

In the end, despite her initial skepticism, the utility of the LLMs impressed and excited Janice, especially once she had started training ChatGPT-4.0 as a regular part of her writing practice. She now expects that the effectiveness of her interactions with it will increase over time. While the LLMs were initially effective in helping to brainstorm and organize her writing ideas, they became true “interlocutors” as she experimented further with using them. Some of the references they provided also intrigued her, as they were from outside SoTL; Janice recognized the potential for LLMs to help scholars make connections across fields. Recently, in working on a program redesign and evaluation plan, she used ChatGPT to help brainstorm new interventions and research questions using various theories of change. She plans to make interacting with GenAI platforms a regular part of her research practice.

Overall, Lauren’s experience adhered to her expectations, with one notable exception. Defining the role GenAI would take was not a strategy she had employed when collaborating with AI previously, and she was pleasantly surprised at how well that worked. She will continue to use AI with the same cautions as before—triple-checking references, using different LLMs, and primarily using AI for topics she is familiar with so that she can more easily assess the outputs. While Lauren does plan to use different LLMs to compare outputs, this project has made the value of training a specific LLM to her areas of interest more apparent. Therefore, she plans to increase her use of a specific LLM in order to train it, even when she may not end up using the output.

Brett appreciated the ability to use prompts to probe the inner workings of the LLMs, providing insights into the structural thinking and biases embedded in responses. He noted the significant difference in quality of output from the various LLM tools. As demonstrated by our results and discussion, Co-Pilot (Enterprise Version) consistently yielded more generic responses and thus may be a less useful research collaborator than ChatGPT-4.0 or Claude. As new tools continue to emerge and current tools’ capabilities expand, he plans to continuously reevaluate the potential for meaningful partnership with available AI systems.

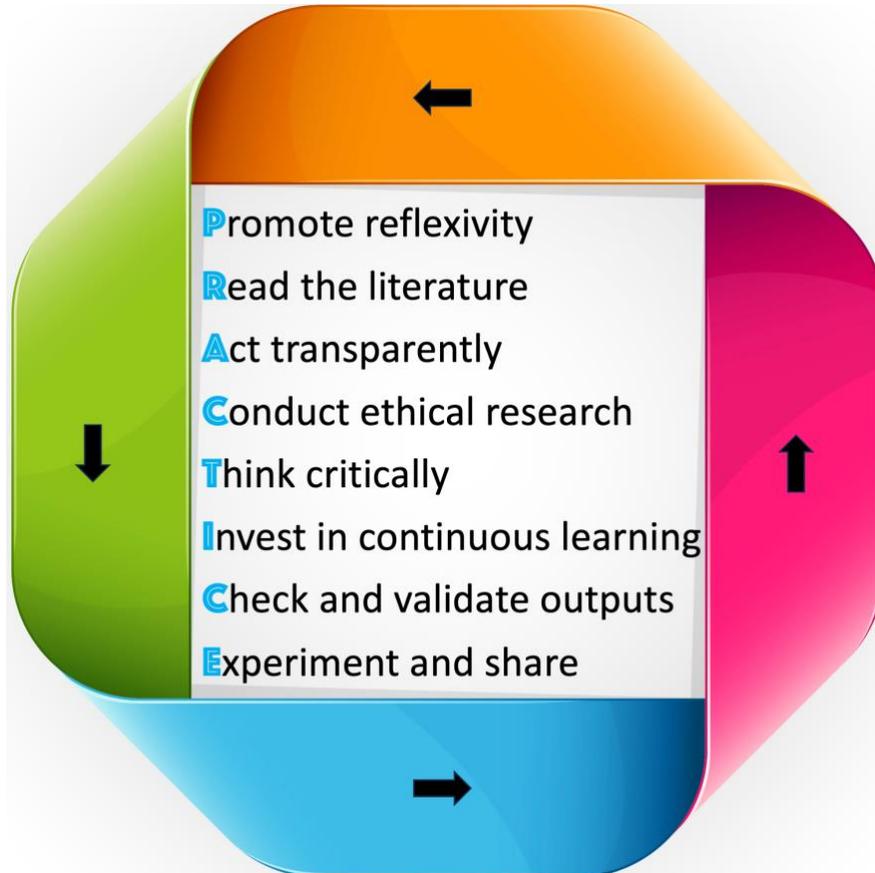
Figure 7. The prompts and follow-ups we made after completing a draft of the above section entitled “Reflections and Recommendations”



Based on our discussions above, we summarize our PRACTICE recommendations:

- **Promote reflexivity:** GenAI can be a powerful tool for reflection rather than a replacement for critical thinking. Engaging in reflexive dialogue with AI can enhance research depth and creativity while ensuring that human insight remains central to the process. Due to the environmental impacts of AI, we also suggest being intentional in one's use.
- **Read the literature:** GenAI can help generate insights, but it cannot replace deep engagement with scholarly work. Researchers must actively read and analyze academic literature in and beyond their areas of interest in order to contextualize, correct, and/or enrich AI-generated outputs, discover new ideas, and ultimately make scholarly contributions to their field.
- **Act transparently:** Clearly document how GenAI has been used in research. Transparency fosters academic integrity and allows others to critically evaluate your research process. This openness builds trust and sets a precedent for responsible AI use in SoTL.
- **Conduct ethical research:** AI tools reflect biases embedded in the data they process. SoTL researchers must be aware of these biases and work with AI to write, analyze, and interpret results rather than let anything happen in a black box. Ethical AI use means ensuring that AI supports, rather than distorts, scholarly contributions.
- **Think critically:** Researchers must verify the accuracy of claims and citations, assess the relevance of AI-generated insights, and critically evaluate AI-generated text. AI should serve as a partner in scholarly inquiry rather than an unquestioned authority.
- **Invest in continuous learning:** GenAI is evolving rapidly, and staying informed about its advancements is crucial. Engaging regularly with AI tools allows researchers to refine their understanding of how AI can support their scholarly work and will result in better outputs.
- **Check and validate outputs:** Researchers must verify AI-generated content against reputable sources. Ultimately, the human scholar is responsible for what is produced.
- **Experiment and share:** GenAI's effectiveness improves with thoughtful, creative, and iterative use. Sharing insights and strategies with colleagues can further enhance AI's role in scholarly inquiry.

Figure 8. The PRACTICE model for the use of GenAI in SoTL research begins with reflexivity and is encompassed by a continuous loop of learning.



By following these recommendations, researchers can better use GenAI to support and enrich SoTL research while ensuring that their use complements, rather than replaces, the human elements of scholarly inquiry.

CONCLUSIONS

This exploration of GenAI's potential role in SoTL research processes suggests that, while it is not an effective SoTL scholar in its own right, it can serve as both a useful technological tool and a collaborative research partner if used critically and reflexively. SoTL scholars can use GenAI to assist with literature exploration, ideation, research design, writing support, developing research methods, and more. However, its outputs require significant human oversight and interpretation. Our PRACTICE model offers guidance on how to integrate GenAI with care. We conclude that GenAI's greatest value lies not in automation or efficiency, but in dialogue.

NOTES

1. During the time this article was under review, LLM platforms started to offer the “Deep Research” option, i.e., integrated academic search capabilities (Shiri 2025). These developments improve the scholarly utility of GenAI, particularly for literature reviews, by offering more transparency about sources and giving the scholar more control over the search process. However, our central arguments remain unchanged, and we believe the principles outlined in our PRACTICE model will remain essential despite any future advancements in technology.

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DISCLOSURE

Beyond the uses of LLMs that we have described above, we used ChatGPT-4.0 and Claude for some sentence-level editing in our final revisions.

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