

ChatGPT as a Cognitive Tool in Sociology: Students' Perceptions and Its Impact on Academic Writing Practices

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Abstract

This study examines how undergraduate sociology students perceive and use ChatGPT as a cognitive tool in their academic writing, focusing on its influence on reasoning, writing strategies, and ethical judgment. Using a qualitative case study design, data were collected from 18 sociology students through in-depth semi-structured interviews and comparative analysis of writing samples produced with and without ChatGPT. Thematic analysis generated three key findings. First, students described ChatGPT as cognitive scaffolding that helped them clarify abstract sociological concepts, generate ideas, and articulate theoretical explanations more coherently. Many viewed the tool as a “thinking companion” that reduced conceptual barriers when engaging with complex theories. Second, ChatGPT contributed to shifts in writing strategies, with students moving from unstructured drafting to more systematic practices such as outlining, coherence checking, and iterative refinement. These changes were evident in writing samples, which demonstrated clearer argumentation and improved organization after AI-assisted drafting. Third, students negotiated a tension between assistance and dependence. While recognizing the tool's benefits, they expressed concerns about losing their academic voice, weakening critical thinking, or relying too heavily on AI-generated structures. Consequently, they adopted selective strategies, including verifying theoretical content and revising AI-generated text. ChatGPT emerged as a supplementary cognitive partner rather than a replacement for sociological reasoning. The findings underscore the need to integrate AI literacy into sociology curricula to promote critical and ethical AI use in academic writing.

Keywords: *ChatGPT; cognitive tool; academic writing; sociology students*

Introduction

Academic writing remains central to the development of sociological reasoning, shaping how students construct arguments, interpret theory, and articulate analytical insights. Strong writing skills are essential for demonstrating sociological imagination and critically examining social structures. However, as scholarly expectations rise and academic tasks become more complex, students are increasingly required to engage in higher-order thinking, including synthesizing theories and integrating empirical evidence. This makes writing not only a communicative act but also a cognitive process that demands clarity, coherence, and reflexivity (Malik et al., 2023; Becker & Park, 2022; Mills, 2021).

Research consistently shows that many undergraduate sociology students experience significant difficulties in academic writing, ranging from structuring arguments to linking theoretical frameworks with real-world phenomena. Studies have identified common issues such as fragmented reasoning, limited conceptual depth, and inadequate source integration (Rahman & Idris, 2023; Tan & Wibowo, 2022). Other findings point to

writing anxiety, low confidence, and linguistic struggles that inhibit students from producing rigorous sociological texts (Sanderson & Lee, 2024). These recurring challenges highlight the urgent need for pedagogical support systems that can scaffold students' cognitive processes throughout the writing stages.

The rapid emergence of artificial intelligence, especially large language models like ChatGPT, has transformed learning practices globally and introduced new forms of cognitive assistance. AI tools are increasingly conceptualized not only as writing aids but as external cognitive partners that can scaffold reasoning, enhance conceptual clarity, and support iterative drafting (Liu & Zheng, 2023; Dwivedi et al., 2023). Scholars argue that AI can facilitate distributed cognition by extending students' ability to analyze, reflect, and articulate ideas, especially in disciplines that require abstract thinking such as sociology (Kumar & Patel, 2024). This global shift signals profound implications for academic writing practices across higher education.

Recent studies have begun examining ChatGPT's role in higher education, producing mixed but insightful findings. Several investigations reveal that ChatGPT can improve coherence, organization, and citation accuracy in students' academic papers (Huang & Santos, 2023; Jang & Lee, 2024). Other studies show that AI-assisted writing enhances critical engagement when used as a reflective dialogue partner rather than a text generator (Müller, 2024; Putri & Hamzah, 2023; Malik et al, 2025). Nevertheless, concerns remain regarding overdependence, reduced originality, and the superficial adoption of AI-generated arguments (Sutton, 2023; Wen & Zhao, 2024). Importantly, the majority of these studies focus on STEM, language learning, and generic academic skills, with limited attention to discipline-specific contexts such as sociological writing.

In Indonesia, the integration of AI in academic activities is rising rapidly, yet sociological writing presents its own set of pedagogical challenges. Students often navigate limited access to high-quality scholarly sources, uneven preparation in theory comprehension, and multilingual constraints that influence writing fluency (Aisyah, 2023; Nugroho & Sari, 2024). Despite growing anecdotal evidence that Indonesian university students are turning to ChatGPT for drafting essays, reviewing literature, and formulating conceptual arguments, empirical investigations into how sociology students perceive this tool remain minimal. Understanding these perceptions is crucial, given the centrality of academic writing in shaping sociological identity and analytical competence.

Although global discussions highlight the promise and risks of AI in higher education, the specific role of ChatGPT as a *cognitive tool* for sociology students has not been empirically examined. The literature lacks discipline-oriented research exploring how students evaluate ChatGPT's usefulness, limitations, and ethical implications in constructing sociological arguments, engaging with theories, and developing reflexive insights. This gap raises important questions about whether AI meaningfully enhances cognitive engagement or merely accelerates mechanical writing tasks. Therefore, the present study aims to explore sociology students' perceptions of ChatGPT and examine its impact on their academic writing practices, offering novel contributions to AI literacy and the pedagogy of sociological writing.

Method

This study employed a qualitative case study design to explore how sociology students perceive ChatGPT as a cognitive tool and how it shapes their academic writing practices. A case study was chosen because the phenomenon under investigation students' interaction with an AI writing tool in a specific disciplinary and institutional context is bounded, contextual, and complex. The "case" in this research is defined as a group of undergraduate sociology students who actively use (or are beginning to use) ChatGPT to support their academic writing tasks (e.g., essays, reflection papers, term papers, and research reports). The design emphasizes depth rather than breadth, allowing the researcher to capture nuanced experiences, perceptions, and writing behaviours through multiple data sources.

Participants were 18 undergraduate sociology students recruited from one sociology study program at a public university. They were selected using purposive sampling with the following criteria: (1) currently enrolled in the sociology program; (2) have completed at least one course with substantial academic writing requirements; and (3) have used or at least experimented with ChatGPT in the context of academic writing. The demographic profile of the participants is summarized in Table 1.

Table 1. Demographic Participant

Participant	Gender	Age	Semester	Self-Reported Writing Proficiency	Frequency of Using ChatGPT for Academic Writing
T-1	Female	19	3	Moderate	Occasionally
T-2	Male	20	3	Moderate	Frequently
T-3	Female	21	5	High	Occasionally
T-4	Female	20	4	Moderate	Rarely
T-5	Male	22	7	High	Frequently
T-6	Female	21	6	Moderate	Occasionally
T-7	Male	19	3	Low	Rarely
T-8	Female	20	4	Moderate	Frequently
T-9	Female	22	7	High	Occasionally
T-10	Male	21	3	Moderate	Occasionally
T-11	Female	20	4	Low	Rarely
T-12	Male	23	7	High	Frequently
T-13	Female	21	6	Moderate	Occasionally
T-14	Male	20	4	Moderate	Occasionally
T-15	Female	19	3	Low	Rarely
T-16	Male	22	6	High	Frequently
T-17	Female	21	5	Moderate	Occasionally
T-18	Female	23	7	High	Frequently

This composition reflects a mix of junior and senior students, varied levels of self-reported writing proficiency (low, moderate, high), and different frequencies of ChatGPT use. Such variation is intended to capture diverse patterns of perception and usage.

Data for this case study were collected through semi-structured interviews, document analysis, and a short reflective questionnaire. All eighteen sociology students (T-1 to T-18) participated in individual interviews lasting 40–60 minutes, focusing on their writing challenges, their experiences using ChatGPT, and their perceptions of its benefits and limitations. To complement the interviews, each participant submitted two writing samples: one produced without ChatGPT and one developed at a stage in which ChatGPT had been used, enabling comparison of changes in structure, clarity, and

argumentation. After the interviews, students completed a brief reflective questionnaire capturing their frequency of use, motivations, perceived impact on writing, and ethical considerations. These three sources provided triangulated and context-rich data on how students engage with ChatGPT as a cognitive tool.

The data were analyzed using a thematic analysis approach. The researcher began by familiarizing themselves with the interview transcripts, writing samples, and questionnaire responses, followed by open coding of recurring ideas related to the use of ChatGPT in academic writing. Codes were then grouped into broader categories and refined into themes such as cognitive scaffolding, changes in writing strategies, perceived dependence, and concerns about originality. Writing samples were examined through qualitative content analysis to identify shifts in coherence, conceptual clarity, and theoretical engagement before and after using ChatGPT. Questionnaire responses were summarized descriptively to support or contrast emerging themes. Through iterative comparison and triangulation, the final themes were constructed to represent students' authentic experiences and perceptions.

Results

ChatGPT as Cognitive Scaffolding for Sociological Reasoning

Students consistently positioned ChatGPT as a supportive cognitive agent that helps them clarify sociological concepts, generate ideas, and reduce the cognitive load involved in starting and organizing academic writing. For many participants, the tool functioned as a "thinking companion" that provided alternative explanations, simplified complex theories, or helped them identify conceptual relationships they had previously overlooked.

Several students described how ChatGPT improved their conceptual clarity

"When I get confused explaining Goffman's perspective, I ask ChatGPT first not to copy the answer, but to make sure I understand the logic." (T-4)

"Sometimes I struggle to connect theories. ChatGPT helps me see how concepts relate, and that gives me confidence to keep writing." (T-7)

"The way ChatGPT breaks down abstract concepts helps me think more clearly, especially in theory-heavy assignments." (T-15)

"It really helps me start writing. After reading its explanation, I feel more prepared to build my own argument." (T-11)

These reflections indicate that ChatGPT supports students' cognitive engagement by lowering barriers to understanding abstract sociological ideas. Writing samples corroborated these narratives: texts written after AI use demonstrated clearer thesis statements, more coherent conceptual explanations, and stronger transitions between ideas.

Shifts in Writing Strategies and Workflow

The second theme captures substantial changes in students' writing processes after integrating ChatGPT into their workflow. Rather than writing spontaneously or with minimal planning, students developed more structured approaches involving outlining, checking coherence, and refining arguments with the assistance of the tool. ChatGPT

became embedded in multiple stages of their writing cycle—from brainstorming to revision.

Students described various strategic shifts

“Before using ChatGPT, I often wrote without structure. Now I start with an outline generated together with the tool, and it makes my writing more systematic.” (T-2)

“When I asked it to check the coherence of my draft, it pointed out overlapping sections. I didn’t realize that before.” (T-13)

“I use ChatGPT to check whether my arguments jump around too much. Sometimes it suggests a clearer order of ideas.” (T-9)

“I use it for structuring long assignments. For example, when writing about social change, it helped me build a logical sequence of sections.” (T-16)

Students also used ChatGPT to refine tone and language, but not without their own agency

“I often ask it to reformulate my sentences in a more academic tone, and then I edit them again so the voice is still mine.” (T-6)

“As someone who writes a lot, I use ChatGPT to experiment with alternative formulations of concepts. It pushes me to think more critically.” (T-5)

Reflective questionnaires showed that students used the tool at different writing stages: 61% primarily during early drafting, 39% during revision. Writing samples reflected noticeable improvements in organization, convergence between theory and evidence, and clearer paragraph progression.

Negotiating Assistance, Dependence, and Academic Integrity

Although students appreciated the cognitive and procedural support offered by ChatGPT, they also expressed concerns about overreliance, loss of personal voice, inaccuracies in theoretical explanations, and potential threats to academic integrity. This tension formed a central theme across interviews.

Students articulated this ambivalence clearly

“If I use it too often, I’m afraid I’ll stop being critical. So I choose very carefully which parts to keep.” (T-18)

“There’s always some anxiety—like my writing might lose my personal voice if I follow the AI too closely.” (T-3)

“ChatGPT is helpful, but I always cross-check the sociological theories it provides. Some explanations are not fully accurate.” (T-14)

“I feel like there has to be a boundary. AI can support me, but the final decisions must come from me as the writer.” (T-1)

In addition, several participants described a deliberate effort to maintain autonomy

“I rely on it mostly for brainstorming. It gives direction without dictating the whole essay.” (T-8)

“I don’t use it frequently, but when I do, it’s usually to simplify complicated explanations.” (T-10)

Others expressed concerns related to authenticity and identity

"My worry is losing my academic voice. Sometimes the AI's suggestions sound too polished, so I always rewrite them." (T-3)

Still, students emphasized agency and control:

"It helps me see gaps, but I don't let it decide the argument. I adjust everything based on my own understanding." (T-1 again)

Taken together, these insights reflect a dynamic process of negotiation in which students balance the benefits of AI assistance with the responsibility to maintain critical engagement, originality, and disciplinary accuracy.

Discussion

The findings of this study demonstrate that sociology students perceive ChatGPT as a significant cognitive scaffold that assists them in understanding abstract sociological concepts and initiating academic writing. This aligns with the broader literature suggesting that AI-driven language models can function as cognitive extensions that support human reasoning and reduce cognitive load during complex academic tasks (Holmes et al., 2023; Liu & Zheng, 2023; Arsyad et al., 2024). Students' accounts of using ChatGPT to clarify theories resonate with earlier research in higher education showing that AI tools can enhance conceptual comprehension and facilitate deeper engagement with disciplinary knowledge (Kasneci et al., 2023). Within the context of sociology where theoretical abstraction is central, ChatGPT appears to play a meaningful role in lowering conceptual barriers and enabling students to enter academic discourse more confidently.

The shift in students' writing strategies further underscores the transformative impact of AI on academic workflows. Participants described a transition from unstructured writing to more systematic practices involving outlining, reorganizing arguments, and refining drafts with AI assistance. This pattern echoes findings from previous studies indicating that AI tools can enhance students' planning, coherence, and structural awareness in academic writing (Dwivedi et al., 2023; Jang & Lee, 2024). Scholars have argued that LLMs can promote metacognitive engagement by encouraging students to reflect on argument flow and linguistic clarity (Lim et al., 2024). The results of this study expand this argument into the sociological domain, suggesting that ChatGPT not only improves students' writing organization but also helps them articulate complex theoretical relationships with greater precision.

However, the findings also reveal an underlying tension between assistance and dependence. While ChatGPT supports students' cognitive work, many expressed concerns about losing their academic voice, diminishing their critical thinking skills, or relying too heavily on AI-generated structures. This ambivalence mirrors previous concerns raised in the literature regarding the risk of reduced originality and critical evaluation when students interact with generative AI (Sutton, 2023; Wen & Zhao, 2024). In sociology, where reflexivity and independent analytical reasoning are core disciplinary values, such dependence may undermine the development of sociological imagination. The students' deliberate strategies such as rephrasing AI-generated text, cross-checking theoretical claims, and filtering suggestions demonstrate their active negotiation of academic integrity, echoing similar findings in studies on AI use in humanities education (Müller, 2024).

The ethical dimension of AI-assisted writing also emerged strongly from students' reflections. Concerns about accuracy, misalignment with disciplinary theory, and the authenticity of writing highlight broader debates on the ethical integration of AI in higher education (Williamson & Piattoeva, 2023; Zawacki-Richter, 2023). Scholars caution that AI systems may inadvertently reproduce inaccuracies or biases, making critical user evaluation essential (Bender et al., 2021). The students' insistence on verifying ChatGPT's explanations especially those involving classical sociological theories suggests that disciplinary accuracy cannot be outsourced to AI and remains the responsibility of the learner. This finding reinforces arguments that academic integrity in the age of AI depends on intentional, informed, and critically reflective engagement (Cotton et al., 2023).

Another implication that emerges from this study is the importance of AI literacy as part of contemporary sociology education. As students integrate ChatGPT into their writing processes, they require guidance on how to use AI responsibly, critically, and creatively. This is consistent with calls from researchers who advocate for embedding AI literacy into the curriculum to equip students with evaluative and ethical competencies (Perkins & Lowenthal, 2023; Holmes et al., 2023). The results show that students are already negotiating complex cognitive and ethical decisions, suggesting that integrating AI literacy into academic writing courses in sociology would not only support responsible AI use but also strengthen students' disciplinary competencies.

Collectively, these findings position ChatGPT as both an opportunity and a challenge for sociology pedagogy. On one hand, the tool lowers barriers to conceptual understanding, supports structured academic writing, and enhances students' confidence. On the other hand, it raises unresolved questions about critical autonomy, authenticity, and the long-term development of sociological reasoning. As higher education continues to integrate AI tools, educators must remain attentive to how these tools reshape disciplinary learning practices, especially in fields that depend heavily on theoretical depth and reflexive writing. Further research is needed to explore long-term patterns of AI use, its impact on disciplinary identity, and how students' cognitive engagement evolves as AI becomes increasingly embedded in academic life.

Conclusion

This study examined how sociology students perceive and use ChatGPT as a cognitive tool in their academic writing, revealing a nuanced interplay between support, strategy, and self-regulation. The findings demonstrate that ChatGPT provides meaningful cognitive scaffolding by helping students clarify abstract sociological concepts, generate initial ideas, and structure their arguments more coherently. It also contributes to shifts in their writing workflow, encouraging more systematic planning, coherence checking, and iterative revision. These benefits suggest that ChatGPT can function as a productive extension of students' analytical and writing capacities when used intentionally.

At the same time, the results highlight ambivalent attitudes toward the tool, particularly regarding concerns about overreliance, erosion of personal voice, and the accuracy of AI-generated theoretical explanations. Students' cautious engagement such as verifying information, revising AI-generated text, and maintaining autonomy in decision-making reflects an ongoing negotiation between leveraging AI assistance and preserving academic integrity. This tension underscores the importance of developing

critical AI literacy, especially in disciplines like sociology where reflexivity, theoretical precision, and independent reasoning are central.

ChatGPT emerges not as a replacement for sociological thinking but as a supplementary cognitive partner that reshapes how students initiate, organize, and refine academic writing. The study suggests that integrating AI literacy into sociology curricula may strengthen students' ability to use AI responsibly while sustaining their analytical depth. Future research may explore the long-term impact of generative AI on disciplinary identity, writing development, and the evolving nature of academic authorship in an increasingly AI-mediated educational landscape.

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