

INTEGRATING AI INTO SYSTEMATIC LITERATURE REVIEW METHODOLOGY IN LITERARY STUDIES: A HYBRID FRAMEWORK

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Abstract

This article explores the integration of Artificial Intelligence (AI) into systematic literature review (SLR) methodologies within literary studies. It focuses on combining AI tools with traditional methods to create a hybrid framework that supports interpretive depth and methodological rigor. Benefits, challenges, and implementation strategies are analyzed based on recent scholarly sources. By expanding on the theoretical foundation of SLR, examining case studies of AI integration, and considering ethical and pedagogical implications, this study provides a comprehensive roadmap for researchers and educators seeking to adapt to the digital transformation of research practices.

Keywords: Artificial Intelligence, Systematic Literature Review, Literary Studies, PRISMA, Methodological Rigor, Hybrid Model

Introduction

Why a Hybrid Framework Is Needed?

In the evolving academic landscape, systematic literature reviews (SLRs) have become essential for ensuring transparency, consistency, and reproducibility in research. Unlike narrative reviews, which may reflect the subjective lens of a single scholar, SLRs employ structured methodologies that enhance the reliability of findings. In literary studies—a field traditionally rooted in interpretation and subjectivity—such rigor can seem difficult to achieve. However, the demand for methodological accountability in the humanities has grown alongside broader academic calls for transparency and replicability.

Artificial Intelligence (AI) offers a promising solution. By automating aspects of the review process such as database searching, duplicate removal, and thematic clustering, AI allows scholars to manage vast amounts of literature more efficiently. This efficiency is particularly important in literary studies, where interdisciplinary connections often result in a vast and scattered body of sources. Recent developments [1,2] demonstrate the potential of fine-tuned large language models (LLMs) for semi-automating key SLR phases, from screening abstracts to synthesizing complex themes.

Nonetheless, the adoption of AI cannot replace the interpretive role of the human researcher. As with any digital tool, risks of misclassification, oversimplification, or cultural bias must be carefully managed. Thus, a hybrid framework, where automation and human oversight coexist, emerges as the most sustainable and academically responsible approach.



AI Applications in Literature Review Methodology

The integration of AI into literature review practices is not merely about speed but about expanding the scope of research possibilities. Studies [1] highlight that AI tools can efficiently assist in screening thousands of abstracts, identifying duplicate records, and extracting key variables. This is particularly valuable in literary research, where the diversity of theoretical approaches—structuralism, postcolonialism, feminism, and others—generates a large, fragmented corpus.

Other research [2] further emphasizes the role of domain-specific LLMs in synthesizing literature in accordance with PRISMA standards. By learning discipline-specific vocabularies, these models can generate structured summaries that align with scholarly conventions. For example, an AI tool might identify recurring themes in digital humanities research or highlight methodological trends in narratology studies.

Other Practical Applications Include

Thematic clustering: AI can detect latent semantic connections between works, grouping sources that human readers might overlook.

Citation analysis: Algorithms can map networks of influence, showing how certain theories or scholars dominate a field.

Bias detection: Some emerging tools assess the diversity of sources, flagging imbalances in region, language, or gender representation.

These applications enhance researcher capacity without diminishing the need for human judgment. AI becomes a collaborator, not a replacement.

Human-Centered Oversight in Literary Interpretation

While AI enhances efficiency, it cannot replicate the nuance of human interpretation. Unlike technical disciplines that rely heavily on numerical datasets, literary studies prioritize meaning, symbolism, and cultural context. As noted by researchers [3], the integration of AI into literature reviews must remain human-centered, with scholars acting as validators who ensure interpretive accuracy.

For instance, AI might identify a cluster of texts discussing “identity” in postcolonial literature, but only a human reader can assess whether these discussions align with the theoretical lens of Frantz Fanon or Homi Bhabha. Similarly, AI might highlight frequency patterns in Shakespearean criticism, but only scholars can interpret whether such patterns represent critical consensus or disciplinary bias.

Others [4] warn against overreliance on algorithmic summaries, stressing that interpretive depth requires subjective engagement. A machine can suggest that two texts are thematically similar, but it cannot explain the symbolic resonance of motifs, nor can it evaluate irony, ambiguity, or authorial intent. This is why AI-assisted SLRs in literary studies must be carefully mediated by human expertise.

A Hybrid Model for Teaching and Research

To address both the opportunities and the limitations, a five-step hybrid framework is proposed for use in both teaching and research contexts:



1. AI-assisted search and screening: Tools like LLMs and bibliometric software can identify relevant sources, remove duplicates, and generate initial thematic clusters.
2. Human validation: Researchers manually review AI results, discarding irrelevant material and reintroducing sources that reflect interpretive nuance.
3. Synthesis of findings: AI helps organize data into categories, while scholars integrate theoretical perspectives, cultural contexts, and critical debates.
4. Transparency via PRISMA reporting: Following established protocols ensures methodological rigor and allows others to replicate or critique the process.
5. Ethical AI use documentation: Researchers explicitly state where AI was used, its limitations, and the safeguards applied to ensure integrity.

This model not only improves efficiency but also enhances pedagogy. In classrooms, students can use AI to quickly gather broad overviews of scholarship, while instructors guide them to critically assess outputs. In research, the model ensures balance: AI broadens access while scholars preserve interpretive integrity.

Challenges and Opportunities

Despite its potential, integrating AI into SLRs raises several challenges:

Resource limitations: Not all institutions provide access to advanced AI tools or training programs.

Tool explainability: Many AI systems function as “black boxes,” making it difficult for scholars to understand how outputs are generated.

Researcher familiarity: Humanities scholars may lack technical training, which creates a barrier to adoption.

However, these challenges are counterbalanced by significant opportunities. AI can democratize access to research by enabling early-career scholars and those in under-resourced regions to engage with vast bodies of literature. It can foster interdisciplinary collaboration, connecting literary studies with computational linguistics, information science, and digital humanities. Moreover, by automating labor-intensive tasks, AI frees researchers to focus on higher-order analysis and critical engagement.

Conclusion

The integration of AI in SLR methodologies within literary studies offers promising possibilities. When paired with human interpretive insight, AI enhances methodological quality without sacrificing depth. The proposed hybrid framework demonstrates how efficiency and rigor can coexist with creativity and critical thinking.

By carefully balancing automation with oversight, literary scholars can embrace digital innovation while safeguarding the interpretive richness that defines the humanities [5].

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