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

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Abstract
This article proposes an innovative and practical hybrid model that integrates Artificial Intelligence (AI) tools into the systematic literature review (SLR) process, specifically within the field of literary studies. By blending the computational capabilities of AI with the nuanced interpretative expertise of human researchers, this hybrid approach aims to enhance research accuracy, efficiency, and replicability. The article explores recent developments in AI-assisted research methods and outlines a structured five-step model that promotes critical reading, transparency, and ethical AI use. The approach is intended to benefit both academic researchers and educators by supporting high-quality literary analysis through an augmented methodology.

Keywords: Artificial Intelligence, Systematic Literature Review, Literary Studies, PRISMA, Hybrid Framework, Interpretive Rigor.

Introduction

The Case for a Hybrid Methodology

In recent decades, the landscape of academic research has undergone significant transformations due to technological advancements. One such evolution is the growing importance of Systematic Literature Reviews (SLRs), particularly as they relate to enhancing the transparency and reproducibility of research findings. While SLRs have long been established as a cornerstone in empirical sciences, their adaptation in literary studies remains relatively underdeveloped. The inherent subjectivity and interpretive nature of literary research pose unique challenges that require careful methodological balance.

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The emergence of Artificial Intelligence (AI)—especially Natural Language Processing (NLP) and Large Language Models (LLMs)—has offered promising tools to automate and optimize several aspects of literature reviews. Yet, literary studies require a more nuanced approach than mere automation. Scholars must grapple with questions of meaning, cultural context, and intertextuality, all of which resist reduction to data points or algorithmic outputs. Therefore, integrating AI into SLR methodologies in literary research necessitates a hybrid approach—one that blends computational efficiency with human-centered critical reasoning.

AI Applications in Literature Review Methodology

Artificial Intelligence has demonstrated considerable utility in enhancing the systematic review process in multiple academic disciplines. In literary studies, the integration of AI offers a dual advantage: it facilitates the processing of large volumes of textual data while also allowing researchers to identify patterns, themes, and citation networks that might otherwise remain hidden. Tools such as machine learning classifiers, named entity recognition systems, and domain-specific LLMs contribute to the automation of citation screening, thematic clustering, and content summarization.

Recent research by Bolanos et al. (2024) confirms that AI can effectively handle the initial stages of the literature review process. By assisting in the screening of large databases and extracting metadata, AI enables scholars to focus on the interpretive and theoretical aspects of literary research. Moreover, Susnjak et al. (2024) highlight how PRISMA-compliant processes can be semi-automated through AI, thus improving replicability and transparency. Importantly, AI also provides a scaffold for discovering interdisciplinary connections, which is especially beneficial for literature scholars working across cultural or historical domains.

Human-Centered Oversight in Literary Interpretation

Despite the advancements in AI, literary interpretation remains deeply subjective and context-dependent. Unlike empirical sciences, literary research hinges on critical reading, philosophical perspectives, and cultural analysis—areas where human judgment is irreplaceable. As Osei Arhin et al.

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(2025) argue, human oversight is essential to preserve the validity and authenticity of literary interpretation. Scholars must remain vigilant against the potential pitfalls of over-automation, such as misinterpretation or cultural insensitivity.

Jijeesh (2025) further warns of the risk of dehumanizing the humanities by outsourcing critical inquiry to algorithms. Therefore, AI should be viewed as an augmentation tool rather than a replacement for scholarly reasoning. Literary researchers must continuously evaluate AI outputs, ensuring that insights derived from algorithmic processes align with theoretical frameworks and disciplinary values. This human-AI partnership preserves the richness of interpretive scholarship while leveraging computational support.

A Hybrid Model for Teaching and Research

To effectively incorporate AI into SLR methodologies while preserving the intellectual rigor of literary scholarship, we propose a five-step hybrid model. This approach not only enhances research outcomes but also aligns with educational objectives in teaching research methodology to students of literature.

1. AI-Assisted Search and Screening

Using AI tools for initial literature searches can accelerate the identification of relevant academic sources. Natural language queries fed into AI-powered databases help gather broader and more nuanced sets of references than traditional keyword-based searches.

2. Human Validation and Critical Selection

After the AI has curated a list of potentially relevant works, human researchers critically assess each item for theoretical alignment, methodological soundness, and contextual relevance. This ensures that scholarly criteria, rather than algorithmic biases, guide the selection process.

3. Synthesis and Thematic Coding

AI can support the organization and classification of literature by identifying recurring themes, sentiment, or keywords. However, it is the researcher who interprets these patterns through the lens of literary theory, ensuring scholarly relevance.

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4. Transparent Reporting with PRISMA Guidelines

Utilizing PRISMA flowcharts and documentation structures ensures that the process remains replicable. AI tools can generate PRISMA diagrams and citation maps, which are then refined by human editors.

5. Ethical Documentation of AI Use

As academic standards evolve, transparency regarding AI use becomes essential. Each step of AI intervention should be documented, not only to uphold ethical research practices but also to help future researchers understand the extent and limitations of the AI's involvement.

Challenges and Opportunities

While the integration of AI into literary SLR methodologies is promising, several challenges must be addressed to ensure its responsible and effective use. First, there is a considerable learning curve associated with adopting AI tools, especially among researchers in the humanities who may lack technical training. This creates a digital divide, wherein some scholars benefit from computational tools while others remain excluded due to limited access or training.

Second, the issue of explainability in AI systems remains a concern. Many AI models, particularly deep learning systems, operate as 'black boxes,' providing outputs without transparent rationale. For literature scholars who rely heavily on interpretability and meaning-making, this lack of transparency can hinder adoption.

Moreover, the risk of algorithmic bias must be addressed. AI systems trained on biased datasets can replicate and even amplify those biases, leading to skewed interpretations or exclusion of non-mainstream voices in literary analysis. Researchers must therefore approach AI tools critically, ensuring fairness and inclusivity in source selection and analysis.

However, the opportunities are equally significant. By delegating repetitive and mechanical tasks to AI, scholars can dedicate more energy to interpretive and theoretical analysis.

Additionally, AI expands the scope of research, making it feasible to include larger corpora and cross-linguistic sources that were previously unmanageable. In educational settings, teaching students to collaborate with AI tools fosters digital literacy alongside critical thinking.

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Conclusion

In summary, integrating AI into systematic literature review methodologies within literary studies offers a pathway to enhanced academic rigor, efficiency, and inclusivity. The hybrid model outlined in this paper demonstrates how computational tools and human expertise can coexist, creating a balanced and methodologically sound approach to research. While challenges such as digital literacy, tool transparency, and ethical use must be actively managed, the potential benefits—broader research scope, improved reproducibility, and enhanced learning—are considerable.

As the academic community continues to embrace digital transformation, literary scholars must engage critically and creatively with these technologies. Doing so ensures that the humanities not only adapt to emerging tools but also shape their development in ways that preserve intellectual depth and cultural relevance. Ultimately, AI should be seen not as a replacement for literary insight, but as a partner in the ongoing pursuit of knowledge.

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