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Mapping the terrain: A quantitative and qualitative analysis of digital literacy competencies in Contemporary Literary Studies Scholars

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Abstract

Background & Aim: The pervasive digitization of literary archives, the rise of computational text analysis, and the emergence of new digital-native literary forms have fundamentally reshaped the field of literary studies. This study aims to empirically assess the current state of digital literacy—defined as the suite of technical, analytical, and critical skills required to engage with digital tools and media in literary research and pedagogy—among active scholars. The objective is to map competency levels, identify key skill gaps, and examine the perceived impact of these literacies on research output and teaching practices.

Methodology: A convergent parallel mixed-methods design was employed. Quantitative data were collected via an online survey disseminated globally to scholars in literary studies (n=417), measuring self-reported proficiency across four digital literacy domains: Information & Archival Digitization, Computational Text Analysis, Digital Publishing & Dissemination, and Critical Digital Theory. Qualitative data were obtained through semi-structured interviews (n=28) with a purposively sampled subset of respondents to explore experiential dimensions and institutional challenges.

Key Results: Survey results indicated a significant disparity in proficiency levels across domains. While 78.3% reported high confidence in Information & Archival Digitization skills, only 31.7% reported proficiency in Computational Text Analysis ($p<.001$). A positive correlation was found between computational skill proficiency and higher self-reported research productivity ($r = 0.42$, $p<.01$). Qualitative analysis revealed three central themes: the tension between traditional close reading and distant reading methodologies, institutional support deficits for skill acquisition, and ethical anxieties surrounding algorithmic bias in literary analysis.

Conclusion & Implications: The study concludes that digital literacy in literary studies is currently uneven and domain-specific, creating a de facto divide within the discipline. The findings highlight an urgent need for targeted curricular development in graduate programs and sustained institutional investment in digital humanities training. The research contributes a validated framework for assessing digital literacy and provides evidence-based recommendations for bridging the competency gap to ensure the field's robust engagement with the digital turn.

Keywords: Digital literacy, digital humanities, literary studies, scholarly competencies, mixed-methods research, computational text analysis, academic training

Introduction

The advent of the digital age has precipitated a paradigm shift in the humanities, compelling a re-evaluation of the core competencies required for scholarly practice. Within literary studies, this shift is multifaceted, encompassing the digitization of primary materials, the development of computational analytical methods (such as stylometry, topic modelling, and network analysis), the creation of digital critical editions, and the critical examination of born-digital literature (Burdick et al., 2012) [4]. This evolving landscape necessitates a corresponding evolution in scholarly skill sets, broadly conceptualized as digital literacy. For the purposes of this study, we define digital literacy in literature as the integrated mastery of technical, analytical, evaluative, and ethical capacities required to discover, critique, analyze, and produce literary knowledge in digital contexts.

Traditionally, literary scholarship has prized deep, hermeneutic close reading—a skill that remains indispensable. However, the proliferation of large-scale digital corpora, like the English Corpus of GitHub or HathiTrust Digital Library, has legitimized complementary "distant reading" approaches (Moretti, 2013) [8], which require fluency with specific digital tools and statistical concepts. Prior research has extensively documented the technical infrastructure of the digital humanities (DH) and showcased exemplary computational literary projects (Jockers, 2013; Underwood, 2019) [7, 12]. Yet, a significant gap exists in empirically assessing the penetration and distribution of the requisite skills among the broader population of literary scholars beyond DH centres.

Existing literature tends to fall into two categories: prescriptive accounts of what skills should be taught, or theoretical critiques of the digital turn. Few studies offer a systematic, evidence-based snapshot of the current state of digital literacy across career stages and institutional settings. This omission makes it difficult for departments, funders, and scholarly societies to design effective training and support mechanisms. Furthermore, the subjective experience of literary scholars adapting to these new demands—their motivations, frustrations, and perceived impacts on their work—remains underexplored in a structured manner.

Therefore, this study seeks to address these gaps by asking the following research questions:

1. What are the self-reported proficiency levels of literary studies scholars across key domains of digital literacy?
2. What is the relationship between digital literacy proficiency and perceived research productivity and pedagogical innovation?

3. What are the primary facilitating factors and barriers to the acquisition and application of digital literacies as experienced by scholars?

The novelty of this research lies in its application of a robust mixed-methods approach to a question often debated anecdotally or theoretically. By quantifying competency levels and qualifying the lived experience of scholars, it provides a comprehensive diagnostic of the field's readiness for its digital future. The contribution is both scholarly—offering a new framework for understanding disciplinary change—and practical—yielding actionable data for academic development. The remainder of this article is structured as follows: a detailed Methods section outlining our survey and interview protocol, a presentation of the quantitative and qualitative Results, a Discussion interpreting these findings in light of existing scholarship, and a Conclusion summarizing key implications and future directions.

Methods

Research Design

A convergent parallel mixed-methods design (Creswell & Plano Clark, 2017) [5] was employed to provide a comprehensive analysis. Quantitative and qualitative data were collected concurrently during the same phase of the research, analyzed independently, and then integrated during the interpretation stage to derive a more complete understanding of the research problem.

Population and Sampling

The target population was active scholars in literary studies (including faculty, postdoctoral researchers, and advanced doctoral candidates). A non-probability purposive and snowball sampling strategy was used. Invitations to participate in the online survey were distributed via major professional listservs (e.g., MLA Commons, SHARP-L), and relevant social media groups (Twitter, LinkedIn). A total of 417 completed survey responses were retained for analysis after data cleaning, which exceeded the minimum sample size of 385 required for a population size >100,000 with a 95% confidence level and ±5% margin of error.

From the survey respondents who indicated willingness for a follow-up, 28 were purposively selected for semi-structured interviews to ensure diversity in career stage (early, mid, late), geographical region (North America, Europe, Asia-Pacific), and self-reported digital proficiency (low, medium, high).

Data Collection Tools and Procedures

Quantitative Instrument: A structured online survey was developed after a review of DH competency frameworks (e.g., European Association for Digital Humanities core competencies). It consisted of: (a) demographic and professional background questions; (b) a 24-item Digital Literacy in Literature (DLL) scale, where respondents rated their proficiency from 1 (No Proficiency) to 5 (Advanced Proficiency) across four domains derived from factor analysis (Information & Archival Digitization, Computational Text Analysis, Digital Publishing & Dissemination, Critical Digital Theory); (c) questions on frequency of tool use; and (d) self-assessed measures of research output and teaching innovation over the past three years.

Qualitative Instrument: A semi-structured interview guide was designed to explore themes of skill acquisition, institutional support, epistemological conflicts, and perceived career impact. Interviews averaged 45 minutes, were conducted via videoconference, audio-recorded, and transcribed verbatim.

Data Analysis

Quantitative Analysis: Survey data were analyzed using SPSS version 28. Descriptive statistics (means, standard deviations, frequencies) were calculated for all items. Scale reliability was assessed using Cronbach's alpha (α =.89 for the full DLL scale). Independent samples t-tests and one-way ANOVA were used to compare proficiency means across demographic groups. Pearson's correlation coefficients were calculated to examine relationships between DLL domain scores and outcome variables (research productivity, teaching innovation). Statistical significance was set at $p < .05$.

Qualitative Analysis: Interview transcripts were analyzed using thematic analysis (Braun & Clarke, 2006) [3] following a six-phase process: familiarization, initial code generation, theme search, theme review, theme definition, and report production. NVivo 12 software was used for data management.

Ethical Considerations

The study received approval from the Institutional Review Board. All participants provided informed consent electronically (survey) or verbally (interview). Survey data were anonymized. Interview participants were assigned pseudonyms, and transcripts were de-identified. Data were stored on a secure, password-protected server.

Results

Quantitative Findings

The demographic profile of survey respondents (n=417) indicated a representative spread: 42% early-career, 38% mid-career, 20% senior; 58% from North America, 27% from Europe, 15% from other regions.

The mean proficiency scores for the four digital literacy domains revealed significant variation (One-way ANOVA, $F(3, 1664) = 112.7$, $p < .001$). Information & Archival Digitization (e.g., using digital archives, understanding metadata) scored highest ($M = 4.12$, $SD = 0.78$), followed by Digital Publishing & Dissemination ($M = 3.45$, $SD = 1.01$) and Critical Digital Theory ($M = 3.20$, $SD = 1.12$). Computational Text Analysis (e.g., using Voyant Tools, AntConc, or Python for textual analysis) scored the lowest ($M = 2.31$, $SD = 1.21$). Post-hoc tests confirmed all pairwise comparisons were significant ($p < .01$).

A significant positive correlation was found between the Computational Text Analysis domain score and self-reported research productivity (number of peer-reviewed articles/chapters) in the past three years ($r = 0.42$, $p < .01$). This correlation was weaker for other domains. Furthermore, 67% of respondents with high computational proficiency (>4.0) reported incorporating digital methods into their teaching, compared to only 22% of those with low proficiency (<2.0) ($\chi^2(1) = 35.8$, $p < .001$).

Table 1: Mean Proficiency Scores and Correlations with Research Output

Digital Literacy Domain	Mean (SD)	Correlation with Research Output (r)
Information & Archival Digitization	4.12 (0.78)	0.18*
Computational Text Analysis	2.31 (1.21)	0.42**
Digital Publishing & Dissemination	3.45 (1.01)	0.22*
Critical Digital Theory	3.20 (1.12)	0.15

p <.05, ** p <.01

Qualitative Findings

Thematic analysis of interview data (n=28) produced three central themes:

1. **The Hermeneutic-Metric Tension:** Many interviewees articulated a perceived conflict between traditional close reading and computational methods. As one professor noted, "I worry that teaching students to run a topic model might come at the expense of teaching them to parse a complex metaphor. They're different muscles, and we have limited time." Others saw them as complementary but struggled with integration.

2. **The Institutional Support Chasm:** Participants consistently identified a lack of structured, discipline-specific training as the primary barrier. Early-career researchers often described learning skills "in a haphazard way, through YouTube tutorials and peer advice" (Postdoctoral Fellow). The absence of formal recognition for the labor of skill acquisition in tenure and promotion cases was a recurring concern.

3. **Ethical and Epistemological Anxiety:** Beyond technical challenges, scholars expressed critical concerns about the "black box" nature of some tools and the potential for algorithmic bias to reinforce canonical biases. One interviewee specializing in postcolonial literature asked, "How do I trust a classification model trained predominantly on a Western literary corpus to categorize my primary texts from Southeast Asia?"

Discussion

This study provides the first comprehensive, empirical mapping of digital literacy competencies among literary scholars, confirming a pronounced and uneven skills landscape. The high proficiency in Information & Archival Digitization aligns with the now-mainstream nature of digital library use, a foundational layer of the digital turn (Dalbello, 2011) [6]. Conversely, the stark deficit in Computational Text Analysis proficiency underscores that, despite high-profile advocacy (Jockers, 2013; Underwood, 2019) [7, 12], these methods remain niche rather than normative for the majority of literary scholars.

The strong correlation between computational proficiency and research output (r = 0.42) is a critical finding. It suggests that these skills, once acquired, may act as significant accelerants for scholarly production, potentially by enabling analysis at scales previously impossible. This lends empirical weight to arguments about the transformative potential of DH. However, the qualitative data temper this optimism by revealing the Hermeneutic-Metric Tension. This echoes longstanding debates about the compatibility of quantitative and qualitative paradigms in literary study (Bode, 2017) [2], indicating that technical training alone is insufficient without parallel pedagogical work on methodological integration and epistemological reconciliation.

The Institutional Support Chasm theme directly addresses the gap in prior literature. While infrastructure for large DH projects exists, our findings indicate a systemic failure in supporting individual skill acquisition at the grassroots level. This creates an access divide, potentially privileging scholars at well-resourced institutions and disadvantaging those without such networks. The expressed Ethical and Epistemological Anxiety further complicates the picture, moving beyond skill acquisition to critical engagement. It shows that scholars are not merely passive recipients of tools but are actively and rightly concerned with their limitations and ideological implications, a sign of sophisticated critical digital literacy (Bennett & Maton, 2010) [1].

A limitation of this study is its reliance on self-reported proficiency measures, which may not perfectly align with objective skill assessments. Furthermore, while the sample was international, it may over-represent scholars already engaged with digital discourse due to the recruitment channels. The convergent design, however, strengthens validity by triangulating the survey data with rich qualitative testimony.

Future research should employ longitudinal designs to track changes in the literacy landscape and conduct experimental studies on the efficacy of different training interventions. Research is also needed to develop robust, critical pedagogies that successfully integrate close and distant reading for undergraduate and graduate students.

Conclusion

This research demonstrates that digital literacy in literary studies is not a monolithic competency but a stratified and contested terrain. The field exhibits high comfort with the digital consumption of archives but significant hesitancy and skill gaps in computational creation and analysis. The perceived correlation between computational skills and research productivity highlights a tangible reward for this literacy, yet institutional structures and lingering epistemological tensions act as powerful brakes on its widespread adoption.

The practical significance of this study is twofold. First, it provides a diagnostic framework for departments and scholarly organizations to audit their members' needs and design targeted, tiered training programs—from basic data literacy to advanced coding for literary analysis. Second, it argues that addressing the digital literacy gap requires more than technical workshops; it necessitates open discussions about evaluative metrics in hiring and promotion, funding for collaborative learning, and the development of a shared critical language for assessing digital methodologies.

To ensure literary studies remains a vibrant and relevant discipline in the 21st century, a concerted, field-wide effort to bridge this literacy divide is not merely advantageous—it is imperative. The path forward must be both skilful and

critical, embracing new digital tools while rigorously interrogating their role in shaping the questions we ask and the stories we tell about literature.

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