

# Exploring the Path of Digital Humanities Empowering the Teaching Reform of Ancient Chinese Literature

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**Abstract:** *The profound reshaping of educational models by digital technology has presented the course of Ancient Chinese Literature with the dual proposition of upholding traditions and pursuing innovation: it must not only anchor the essential core of literature as the study of humans and safeguard the bottom line of inheriting humanistic spirit but also take digital humanities as methodological support to break through the cognitive boundaries and efficiency bottlenecks of traditional teaching. Based on the core stance of methodological innovation rather than technological dependence, this paper systematically analyzes the theoretical compatibility between digital humanities and ancient Chinese literature teaching, clarifies the progressive logic from digitalization to datafication and then to intelligentization, and directly addresses the dual dilemmas of technical thresholds and humanistic alienation. On this basis, it proposes a three-dimensional integration framework driven by humanistic spirit, empowered by digital methods, and co-constructed by teachers and students, constructing a new teaching paradigm featuring problem orientation, technical adaptation, and value return. This study provides a path reference with both theoretical depth and practical feasibility for the curriculum reform of ancient Chinese literature in the new era, promoting the innovative development of traditional humanities disciplines in the wave of digitalization by taking technology as a tool and humanism as the soul.*

**Keywords:** *Digital Humanities; Ancient Chinese Literature; Teaching Paradigm; Methodological Turn*

## 1. Introduction

As an emerging interdisciplinary field that integrates computer science and the humanities, digital humanities aims to advance the transformation of humanistic research paradigms through digital technology, encompassing digital resource management, computational analysis, and interdisciplinary collaboration <sup>[1]</sup>. With the in-depth advancement of digital technology, the educational ecosystem is experiencing profound transformations <sup>[2]</sup>, presenting both new opportunities and challenges to the time-honored teaching of ancient Chinese literature. Against this backdrop, how to ground itself in the essence of literature as a study of humanity, leverage digital methods to expand cognitive boundaries, and enhance teaching efficiency has emerged as a core proposition with both theoretical value and practical urgency <sup>[3]</sup>. From the basic standpoint of methodological innovation over technological dependence, this paper endeavors to systematically explore the feasible paths for the in-depth integration of digital humanities and ancient Chinese literature teaching. By analyzing the inherent connections between the two from a cognitive logic perspective, it constructs a practical framework centered on humanistic drive, digital empowerment, and collaborative co-construction. This framework aims to advance the creative transformation and innovative development of ancient Chinese literature teaching in the digital context, as well as provide academic references and practical insights for establishing a new teaching paradigm in the new era.

## 2. Logical Starting Point of Digital Humanities Involving Ancient Chinese Literature Teaching

Traditional ancient Chinese literature teaching has long faced two major limitations: in the cognitive dimension, hampered by the linear narrative and static presentation of paper-based texts, students find it challenging to bridge the interpretive gap between words and scenes. For instance, understanding the agricultural scenes in *The Book of Songs·Bin Wind·July* and Li Bai's sword-wielding wandering journeys often remains confined to abstract imagination; in the research dimension, students tend to rely on the

authority of textbooks, lack the ability to critically trace literary facts, and are constrained by their individual reading horizons—rendering it difficult to develop a cross-temporal and interdisciplinary macro-perspective.

The emergence of digital humanities offers methodological support for addressing this issue. As Professor Peter K. Bol of Harvard University notes, its core value resides in reconstructing the research cycle through digital resources, structured data, computational methods, and visual presentation—a process that aligns closely with the cognitive sequence of ancient Chinese literature teaching: from textual interpretation and contextual reconstruction to value explication<sup>[4]</sup>. For example, the *Chronological Map of Tang-Song Literature*, developed by Professor Wang Zhaopeng's team, visually illustrates the itineraries of Li Bai, Su Shi, and other literati, converting abstract literary geography into tangible spatiotemporal trajectories. This not only addresses the experiential gap between textual description and real-world scenarios but also provides data support for cross-period comparisons of literati activities, thereby demonstrating the potential of digital humanities to evolve from tool application to methodological innovation<sup>[5]</sup>.

It is imperative to clarify the fundamental distinction between digital humanities as a field and digital humanities as a methodology. The former centers on the application of technology in humanistic research—such as the digitization of ancient texts and text mining—with enhancing efficiency as its primary goal; the latter conceptualizes digital humanities as a conceptual framework for reconstructing research paradigms and teaching logics, with cognitive innovation as its core objective. This requires that in teaching, educators not only utilize digital tools but also foster students' ability to engage in dialectical thinking about humanistic issues using data. Teachers should not only guide students to master platform functionalities but also prompt them to reflect on how data selection criteria influence the representation of literary facts. Such adaptability is primarily manifested in two aspects: on the one hand, abundant digital achievements in the field of ancient Chinese literature—including Wuhan University's *Digital Dunhuang*, the *Yangtze River Atlas*, and the digitization project of the *Si ku Quanshu*—provide diverse resource support for teaching; on the other hand, the emphasis on exploring in-depth humanistic spirit and reconstructing historical contexts in ancient Chinese literature teaching can counterbalance the potential tech-centric tendency of digital humanities at the value level, thereby truly embodying the fundamental principle that technology serves humanism.

### **3. Theoretical Compatibility: Inherent Logical Resonance Between Digital Humanities and Ancient Chinese Literature Teaching**

The ultimate goal of digital humanities is to deepen humanistic cognition through technology, which is highly consistent with the core objectives of ancient Chinese literature teaching, namely inheriting humanistic spirit and cultivating critical thinking. The charm of digital humanities lies in advocating an equal dialogue between humans and machines. This means that humanists do not need to be programmers, but they should have the ability to understand, use, and reflect on technology<sup>[6]</sup>. This concept can exactly solve the long-standing dilemma in ancient Chinese literature teaching of emphasizing knowledge indoctrination over ability cultivation. For example, in the teaching of *The Book of Songs*, a combination of distant reading and close reading can be adopted: first, visually present the dissemination path of *The Book of Songs* through data visualization (distant reading); then guide students to carefully read the stylistic characteristics of key translations (close reading). This method can not only cultivate students' thinking of macro observation using data but also deepen their ability to interpret specific texts.

The core strength of traditional ancient Chinese literature teaching lies in its in-depth exploration of humanistic spirit, such as the nuanced interpretation of human tragedy in *A Dream of Red Mansions*, yet it is constrained by information asymmetry, leaving students struggling to access niche literary works or interdisciplinary materials. Digital humanities, by contrast, excels at breaking resource barriers and facilitating macro-level understanding; for instance, platforms like the *Yangtze River Atlas* integrate river basin culture with literary works. However, it also risks falling into the trap of data fragmentation. The integration of the two can form effective complementarity. Taking Du Fu's *Three Official Poems and Three Separation Poems* as an example, teaching can not only preserve the traditional focus on in-depth interpreting the poet's patriotic concern for the nation and its people but also leverage digital platforms to retrieve historical, geographical, and livelihood archives from the Anshi Rebellion period. This enables students to grasp the specific historical context of the poems' composition, thereby achieving dual deepening of emotional resonance and rational cognition.

The progressive logic from digitalization to datafication and then to intelligentization is naturally

aligned with the cognitive process of ancient Chinese literature teaching, which proceeds from perception to comprehension and finally to application. At the digitalization stage, technologies such as ancient text scanning and 3D modeling of cultural relics, exemplified by the mural resources in *Digital Dunhuang*, provide students with intuitive cognitive anchors, effectively mitigating comprehension barriers caused by textual abstraction. Entering the datafication stage, transforming literary elements (authors, works, events, etc.) into structured data, such as the author activity datasets in the *Chronological Map of Tang-Song Literature*, fosters students' capacity to identify research questions through data. For example, by comparing the activity regions of poets across different periods, students can explore correlations between literary schools and geographical environments. At the intelligentization stage, with the support of knowledge graph functions, students can deepen their understanding of inherent literary laws through human-machine collaboration while reflecting on how algorithms might impact the diversity of humanistic interpretation.

#### **4. Practical Dilemmas: Challenges and Reflections on Digital Humanities Involving Ancient Chinese Literature Teaching**

The technical barriers of digital humanities, such as data cleaning and the use of visualization tools, pose practical challenges to both teachers and students. On the one hand, some teachers lack sufficient ability in applying digital tools, making it difficult to organically integrate methods such as knowledge graphs and spatiotemporal analysis into teaching; on the other hand, students are prone to technological dependence, for example, judging the aesthetic value of literary works only based on algorithm-generated emotional values while ignoring the depth and complexity of the texts' own emotions. This gap in ability and understanding may lead to the formalization of digital humanities teaching in practice, for example, merely using digital platforms to display ancient book images without guiding students to reflect on how to preserve the historical context of documents during the digitalization process.

We must guard against the risk of humanistic flattening that digital humanities may bring<sup>[7]</sup>. For example, mechanically disassembling the character relationships in *Romance of the Three Kingdoms* only through network analysis graphs may ignore the emotional bonds embodied in the Oath of the Peach Garden; simply quantifying the bold style of Li Bai's poetry through word frequency statistics may also sever the overall aesthetic imagination evoked by The waterfall plummets three thousand feet. As scholar Xiao Shuang noted, the limitation of machine learning technology is that it can only discover similarity but hardly explain causality. Although digital tools can reveal certain laws in literary phenomena, they often struggle to deeply interpret the humanistic significance behind these laws, which creates a certain tension with the inherent demand of ancient Chinese literature for focusing on human nature, emotions, and values.

In addition, current high-quality digital resources, such as Wuhan University's *Yangtze River Atlas* and Harvard University's *China Biographical Database*, are mostly research-oriented and lack adaptive design for teaching scenarios. For example, database functions are often complex, requiring students to spend a lot of time learning operations, which instead affects teaching efficiency; some resources only stay at the level of information presentation, such as providing scanned copies of ancient books, without being transformed into exploitable teaching questions. This disconnection between design and demand restricts the effective application of digital resources in teaching.

#### **5. Path Construction: A Three-Dimensional Integration Framework for Digital Humanities Empowering Ancient Chinese Literature Teaching**

Constructing a trinity core literacy system helps avoid the one-sided tendency of emphasizing technology over humanism or vice versa in teaching practice. In this system, humanistic literacy is the foundation, and teaching must always focus on the core of literature as the study of humans. For example, even when interpreting *A Dream of Red Mansions* with digital tools, the focus should be on the work's profound revelation of human tragedy, rather than merely focusing on the data-based presentation of character relationships. Digital literacy is an important support, focusing on cultivating students' ability to acquire, analyze, and reflect on data. For instance, when using the *Chronological Map of Tang-Song Literature*, students should be guided to actively question the authority of data sources and the accuracy of spatiotemporal annotations, avoiding blind trust in digital achievements. Critical literacy is the soul, requiring efforts to strengthen students' awareness of distinguishing facts from opinions. For example, targeting the classic assertion in textbooks that Li Bai is a romantic poet, students can be guided to retrieve data on Li Bai's works from different periods through digital platforms and independently

explore whether the romantic style runs through his creative career, thereby breaking the simplistic worship of textbook authority.

The innovation of teaching concepts should adhere to replacing a technology-driven approach with a problem-oriented one and always uphold the value orientation with humanism as the soul. From the perspective of problem orientation, the selection of digital tools must serve specific teaching problems, rather than using technology for the sake of technology. For example, when explaining Tang Dynasty frontier poems, centering on the core question: What is the relationship between the geographical distribution of frontier poems and military systems, GIS technology can be used to dynamically present the overlap between poets' activity trajectories and the Tang Dynasty's border defense system, making technology a real means to solve problems rather than an object of display. From the perspective of upholding humanism as the soul, when using intelligent functions such as automatic annotation of knowledge graphs, students need to be guided to reflect on technology from a humanistic perspective. For example, AI's automatic translation of Guan! Guan! Cry the fishhawks in *The Book of Songs* may simplify its rich emotional connotations. Teachers can organize students to compare the differences between AI translations and traditional annotations, and jointly discuss the limitations of machine translation in conveying humanistic contexts, thereby strengthening the fundamental cognition that technology should serve humanistic understanding.

The innovation of teaching models can explore a dual-track path that combines teacher-student collaborative co-construction and human-machine interactive exploration. In terms of teacher-student collaborative co-construction, breaking away from the tradition where teachers unilaterally provide resources, educators should guide students to participate in the co-construction of teaching data. For example, in the unit Research on Song Dynasty Ci Poets, teachers and students can jointly collect data on poets' life experiences, works, and social interactions, and build a small-scale knowledge graph using tools such as Neo4j. This process not only cultivates students' digital literacy and ensures the generated data better aligns with specific teaching requirements such as the impact of poets' interactions on their creations, but also exercises their knowledge construction ability. For instance, when inputting data, students need to judge whether there is controversy over the creation time of a certain ci poem, thereby deepening their critical understanding of literary facts.

In terms of human-machine interactive exploration, teaching can be designed with reference to the process of macro distant reading, micro close reading, and dialectical reflection. At the macro distant reading stage, tools such as the Yangtze River Atlas are used to compare literary works of the Yangtze River Basin across different dynasties, explore the connection between the natural environment and literary themes, and establish a cross-temporal macro perspective. At the micro close reading stage, students are guided to return to detailed textual analysis. For example, after distant reading reveals that Tang Dynasty landscape poems are mostly concentrated in the Jiangnan region, students can specifically analyze how the imagery choices in relevant poems by Wang Wei and Meng Haoran reflect regional culture. Finally, at the dialectical reflection stage, students are organized to discuss the inherent limitations of digital tools, such as whether the data selection of the Yangtze River Atlas has omitted non-mainstream writers and whether distant reading analysis may overlook the individual uniqueness of literary works, thereby cultivating students' habit of examining technology through a humanistic lens.

## **6. Practical Application: Specific Operational Paths of Digital Humanities Tools in Ancient Chinese Literature Teaching**

Ancient book digitalization platforms provide unprecedented resource support for ancient Chinese literature teaching. For example, the Shidian Ancient Books platform developed by Peking University uses deep learning technology to realize the complete transition of ancient books from paper-based carriers to digital formats. The platform mainly has three core functions: text recognition, automatic punctuation, and entity recognition. Its library browsing interface is designed simply, adopting the traditional four-part classification method — Classics, History, Philosophy, and Literature — with the addition of Taoism and Buddhism sections, basically covering all categories of ancient books. The platform adopts an image-text comparison feature for users to verify, effectively ensuring the reliability and usability of the texts. In teaching practice, taking the teaching of agricultural culture in *The Book of Songs*: July as an example, teachers can fully utilize its intelligent analysis functions: first, display the differences in punctuation among different versions through the automatic punctuation function, guiding students to reflect on how punctuation affects the understanding of poetic meaning; second, use entity recognition technology to extract key words such as agricultural tools, crops, and seasons involved in the poem and generate structured data tables; finally, analyze the distribution rules of agricultural vocabulary

through the word frequency analysis function, allowing students to intuitively grasp the core position of the agriculture theme in the poem. The built-in Ancient Book Intelligent Assistant function of the platform is also quite practical. Students only need to select difficult original texts, click Ask AI to obtain vernacular explanations, and can also chat with the assistant to let it summarize the text content or put forward research questions for discussion.

Among spatiotemporal analysis tools, the Chronological Map of Tang-Song Literature is one of the exemplary cases of digital humanities applied to ancient Chinese literature teaching. Developed by Professor Wang Zhaopeng's team, this platform integrates five elements — time, location, characters, events, and works — and intuitively presents the spatiotemporal context of Tang and Song literature in the form of a map. It supports cross-overlay queries from four dimensions: geography, writers, time, and works, and has been widely used in research and teaching. For example, in the teaching of Li Bai's poetry, teachers can guide students to: first, check Li Bai on the map to view the prefectures, counties, and famous mountains he visited throughout his life; second, use the timeline function to locate 759 AD, when *Leaving Baidi City at Dawn* was created, and observe the poet's specific location and movement route at that time; finally, combine the work dimension to associate other poems of the same period on the map, forming a three-dimensional map of geography-time-works. This visualization process not only helps students understand the geographical context of leaving Baidi City at dawn, clouds floating above the city but also deeply explores the impact of the geographical environment on his poetic style.

Another comprehensive tool, the *Yangtze River Civilization Time Machine*, provides a broader perspective for spatiotemporal analysis. Integrating digitalization, intelligence, and visualization, this platform uses big data, artificial intelligence, virtual reality, and other technologies to digitally reconstruct and display Yangtze River cultural heritage. In the teaching of Du Fu's *Three Gorges Poems*, teachers can use its VR function to let students immersively experience the precipitous landforms of the Three Gorges, and combine Du Fu's poems during his stay in Kui Prefecture to understand the relationship between the geographical environment and the poet's creative mood. The platform also integrates various resources such as artifacts, poems, grottoes, and sites from three dimensions: natural, humanistic, and social, providing rich materials for interdisciplinary teaching.

In terms of intelligent analysis tools, sentiment analysis technology provides a new path for interpreting literary works. Sentiment analysis systems based on the BERT model can capture subtle emotional changes in texts. For example, in the teaching of *Memorial on Filial Piety*, algorithms can be used to deeply explore the emotional dimensions of the text, revealing Li Mi's inner world and the characteristics of the times; in the research on *A Dream of Red Mansions*, using NLP technology for sentiment analysis and character relationship network construction can clearly present the complex emotional curves and the detailed tension of character interactions in the work.

The teaching application of knowledge graph technology is more innovative. For example, a research team systematically analyzed the connection between the poems in *A Dream of Red Mansions* and Tang poetry by calculating text similarity, and found that Cao Xueqin's adaptation of Tang poetry is a creative contextual migration. This analysis method can be directly applied to teaching: when explaining the poems in *A Dream of Red Mansions*, the inheritance relationship between them and Tang poetry is visually displayed through knowledge graphs, helping students understand the inheritance and innovation of classical literature.

Finally, taking *The Book of Songs: July* as an example, a complete digital teaching process can be designed. The first stage is digital preparation (pre-class preview): students preview the original text through the Shidian Ancient Books platform and use its intelligent assistant to understand the meaning of the text; view ancient agricultural production images through *Digital Dunhuang* to establish an intuitive cognition; use Yangtze River Atlas to learn about the geographical and agricultural background of the Yellow River Basin during the Western Zhou Dynasty. The second stage is datafication analysis (in-class interaction): teachers use the SikuBERT model to intelligently analyze the poem, generate word frequency tables, and guide students to discover the high-frequency rule of agricultural vocabulary; display the relationship between seasons and geographical locations in the poem with GIS; analyze the emotional fluctuations of each chapter using sentiment analysis technology. The third stage is intelligent exploration (after-class expansion): students are divided into groups to build a knowledge graph of agricultural activities in *July* using Neo4j, structuring elements such as time, location, activities, and artifacts; compare its similarities and differences with Tang and Song agricultural poems through the *Chronological Map of Tang-Song Literature* to explore the evolution of agricultural civilization; finally, write a research report reflecting on the assistance and limitations of digital humanities tools in literary understanding.

## 7. Conclusions

The empowerment of digital humanities to ancient Chinese literature teaching is essentially not replacing humanism with technology, but activating the inherent vitality of traditional disciplines through methodological innovation. It should always serve the exploration of humanistic depth, and its core lies in expanding cognitive boundaries with digital methods rather than simplifying or replacing the perception and interpretation of literature itself. Future teaching needs to integrate digital methodology into courses, promote the transformation of scientific research resources into teaching resources, and establish an evaluation system that balances technical application and humanistic depth. Thus, with the help of technology to expand cognitive boundaries, we can achieve the innovation while upholding traditions on the basis of adhering to the humanistic core, and ultimately promote the leapfrog development of ancient Chinese literature teaching in the digital age to deepen cognition and inherit culture.

## Acknowledgements

Hubei Teaching Research Project, Project No.2022461: Research on Ecological Situational Teaching Mode of Classical Poetry in the Digital Humanities Era.

2024 School-Level Teaching Reform Research Project of Hanjiang Normal University, Project No. 2024A01: Research on the Path of Integrating Curriculum Ideological and Political Education into the Entire Process of Classroom Teaching in Chinese Literature Disciplines Based on BOPPPS — A Case Study of the Course A History of Ancient Chinese Literature.

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