

Research on the Reform of Ancient Literary History Teaching in the Context of "Digital Humanities"

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Abstract: Against the backdrop of the rapid development of digital humanities technology, reforming the teaching of ancient literary history has become particularly urgent. Faced with challenges such as students' lack of interest and compressed class hours, traditional teaching methods urgently require innovation. This study adopts a combined approach of literature review and case analysis to deeply analyze the application of digital humanities technology in ancient literary history teaching. The research results reveal that utilizing technological means such as text mining and immersive scene construction can effectively update teaching methods and restructure course content. The academic contribution of this study lies in enhancing teaching quality and cultivating students' digital literacy. Its innovation lies in deeply integrating digital technology into all stages of the teaching process, thereby promoting the modernization of ancient literary history teaching.

Keywords: Digital humanities, Ancient literary history, Teaching reform, Text mining, Virtual reality.

1. Introduction

1.1. Research Background and Significance

In the current educational environment, the teaching of ancient literary history faces multiple dilemmas. From the students' perspective, ancient literary works are often perceived as distant and linguistically obscure, leading to a lack of interest and low engagement. Additionally, with the ongoing adjustments to higher education curricula, class hours for ancient literary history courses have been significantly compressed. This makes it difficult for teachers to delve deeply into rich literary content within limited time, resulting in students' insufficient absorption and understanding of relevant knowledge. From the perspective of social demands, students trained under traditional teaching models often exhibit weak rational thinking skills, failing to meet the urgent need for interdisciplinary talents in the digital era.^[1]

The rise of digital humanities technology has opened new pathways for reforming ancient literary history teaching. It not only presents teaching content in innovative ways to stimulate students' interest but also breaks through the constraints of time and space, enriches teaching resources, improves teaching efficiency, and meets new societal demands for talent cultivation.

1.2. Literature Review

In recent years, digital humanities has achieved remarkable results in the field of literary research. Internationally, scholars have used text mining technology to conduct word frequency statistics and topic modeling on vast amounts of literary works, deeply analyzing stylistic features and relationships among literary schools. Database construction is also relatively mature; for example, the literary works database in the UK provides abundant resources for literary research. Domestically, relevant research is progressing steadily, with some universities and research institutions establishing ancient book databases to facilitate scholars'

retrieval and research.^[2]

Nevertheless, the application of digital humanities in the teaching practice of ancient literary history remains insufficient. While there are several teaching practice cases abroad, a comprehensive theoretical framework and methodology have yet to be established. Domestic research mostly focuses on theoretical discussions, lacking in-depth exploration of practical teaching applications. This research gap provides a broad space for the current teaching reform study.

2. Current Problems in Ancient Literary History Teaching

2.1. Structural Imbalance in the Curriculum System.

In current ancient literary history teaching practices, the structural imbalance in the curriculum system is particularly prominent. This is mainly manifested in an overemphasis on literary history theories at the expense of in-depth analysis of literary works. Taking the curriculum design of some higher education institutions as an example, literary history courses typically account for over 80% of class hours. During teaching, teachers tend to spend significant time elaborating on the historical context of literary development and literary trends, while devoting less time to interpreting ancient literary works. Although students gain a macro-level understanding of literary development, their profound comprehension and appreciation of specific literary works remain limited, hindering their experience of the true charm of ancient literature.

Furthermore, the fragmentation of textbook content cannot be ignored. To cover as many knowledge points as possible, compilers often disperse literary works and theories across different chapters, resulting in a lack of systematic and coherent organization. Students struggle to build a complete knowledge system, and their understanding of literary works remains superficial, failing to grasp the internal connections between works and the overall trends of literary development.

2.2. Monotonous Teaching Model.

Currently, in the field of ancient literary history education, the "cramming" lecture method still dominates, and the limitations of this teaching model are evident. Under this model, teachers unilaterally deliver knowledge in the classroom, while students remain in a passive state of receiving information, lacking opportunities for active participation and deep thinking. A survey conducted among students enrolled in an ancient literary history course at a certain university revealed that over 70% of respondents reported insufficient classroom interaction and low learning motivation.

This passive learning approach leads students to rely excessively on teachers' explanations, resulting in a lack of independent thinking and analytical skills. When encountering new literary works or research topics, students struggle to propose innovative insights. Prolonged exposure to this teaching model stifles students' creativity and cognitive flexibility, making it difficult to meet the demands for innovative talents in the digital era.

2.3. Superficial Application of Technology.

Although certain progress has been made in the application of digital resources in the field of ancient literary history education, their overall utilization rate remains relatively low. While many universities and research institutions have established digital resource platforms, including ancient book databases, teachers and students generally limit themselves to basic retrieval operations, failing to fully explore the potential value of these resources. For instance, the abundant literary works within these databases are often merely used to locate specific reference materials, lacking in-depth research utilizing advanced technological means such as text mining.

Meanwhile, there exists a significant disconnect between technological tools and teaching objectives. Although some universities have introduced cutting-edge digital teaching equipment and software, these technological tools have not been effectively integrated with teaching content and objectives in actual instructional activities. By comparing digital teaching practices across different universities, it can be observed that despite substantial investments in constructing digital teaching environments by certain institutions, teaching outcomes have not significantly improved as a result. The fundamental reason lies in the lack of appropriate alignment between technology application and teaching objectives.

3. The Application Pathways of Digital Humanities Technologies in Teaching

3.1. Text Mining and Visual Analysis

Text mining and visual analysis play a crucial role in the teaching of ancient literary history. Among them, word frequency statistics and topic modeling, as key techniques of text mining, make significant contributions to the analysis of literary styles. By counting the frequency of vocabulary occurrences in literary works, the linguistic features and common expression patterns of the works can be revealed, thereby deducing their stylistic characteristics. Meanwhile, topic modeling technology can extract latent themes from complex text collections to uncover the core content and ideological tendencies of the works.^[3]

Taking the analysis of the Complete Tang Poems as an example, the operational process can be outlined as follows: First, collect digitized text data of the Complete Tang Poems. Then, use text mining tools to perform word frequency statistics, identifying high-frequency words such as "moon," "wine," and "wild goose," which are often closely related to the emotional expression and imagery in Tang poetry. Subsequently, apply topic modeling algorithms to categorize Tang poems into themes such as frontier life, pastoral scenes, and love. Through in-depth analysis of poems under each theme, the characteristics of different literary styles in the Tang Dynasty can be further understood.

Social network graphs also play an indispensable role in deconstructing relationships among literary schools. By treating poets as nodes in a network and their interactions and stylistic similarities as connecting edges, a social network graph can be constructed. Analyzing the structural features of the network clearly demonstrates the inheritance and integration relationships among literary schools, thereby helping students gain a deeper understanding of the development trajectory of ancient literature.

3.2. Immersive Scenario Construction

Immersive scenario construction can provide students with a brand-new learning experience. Taking the virtual Du Fu Thatched Cottage as an example, VR/AR technology can be utilized to create a highly realistic simulation of the thatched cottage, allowing students to feel as if they are physically present. Within the virtual environment, students can stroll through the scene, admire the architectural features of the cottage and the surrounding natural landscape, and experience the living environment of Du Fu during his time.

During the construction process, it is necessary to integrate multimodal resources, including images, audio, and videos, to enrich the virtual scene with abundant information. For instance, in the virtual Du Fu Thatched Cottage, playing audio recordings of Du Fu's poetry recitations and displaying videos of his life events allows students to understand Du Fu and his works from multiple perspectives.^[4]

The technical implementation path mainly includes data collection, 3D modeling, interactive design, and other steps. First, collect actual data from Du Fu's Thatched Cottage, such as building dimensions and appearance. Then, use 3D modeling software to create a virtual scene. Finally, through interactive design, enable students to interact with the virtual environment. In terms of teaching effectiveness, immersive scenes can stimulate students' learning interest and enhance their understanding and appreciation of ancient literary works.

3.3. Digital Academic Practice Platform

Collaborative research platforms (such as ancient text annotation systems) play a significant role in promoting cooperative learning and academic exchange among students. In ancient text annotation systems, students can conduct detailed annotations and commentaries on classical texts and share their research findings and academic insights. The system meticulously records students' annotation processes and contributions, providing teachers with convenient management and evaluation tools. The implementation of cross-institutional data-sharing mechanisms further facilitates the integration of resources from various universities, offering students richer research materials. Universities can upload their own classical text databases and research achievements to the shared platform, enabling resource complementarity

and sharing.

4. Core Strategies for Teaching Reform

4.1. Curriculum Content Restructuring

To address the phenomenon of "emphasizing history over literature" in ancient literary history teaching, this reform advocates a "work-centered" teaching model, significantly increasing the proportion of close reading of original texts to 60% in the curriculum structure. As a key approach for students to directly engage with ancient literary works, close reading of original texts helps students deeply experience the thoughts, emotions, and literary beauty of ancient people.

In the revised new curriculum syllabus, there has been a reduction in generalized discussions on the historical development of literature, replaced by an increased focus on in-depth reading and discussion of classic literary works. For instance, when exploring Tang Dynasty literature, less time is now devoted to the periodization and evolution of literary schools, and more emphasis is placed on selected representative works by poets such as Li Bai, Du Fu, and Wang Wei. Students are guided to conduct thorough analyses of these works, examining their linguistic artistry, ideological depth, and creative techniques.^[5]

Moreover, this course has designed interdisciplinary thematic modules to promote integration across different disciplines. Taking the combination of literature and geoinformatics as an example, when teaching Song Dynasty literature, it incorporates the administrative divisions and geographical characteristics of the Song Dynasty to explore the influence of regional cultures on literary creation, while analyzing the stylistic differences between literary works from the Jiangnan and northern regions. Through such interdisciplinary learning approaches, the course aims to broaden students' perspectives and enhance their comprehensive analytical abilities.

Compared with traditional course syllabi, the new syllabus places greater emphasis on students' firsthand experience and comprehension of literary works, focusing on the systematic and comprehensive nature of knowledge, which aids students in constructing a holistic knowledge framework of ancient literature.

4.2. Teaching Method Innovation

Implementing a dual-track teaching model of "problem-based learning + digital experimentation" aims to stimulate students' enthusiasm and initiative. Problem-based learning centers on questions to promote independent thinking and exploration. Teachers pose thought-provoking questions in

class (such as: "How do depictions of war in Tang frontier poetry reflect social realities?"), guiding students to seek answers through methods such as data retrieval and group discussions.

Digital experimental teaching relies on digital humanities technologies to immerse students in the entire process of literary research. For instance, in poetry generation algorithm challenge activities, students apply programming knowledge and text mining techniques to construct poetry generation algorithms. Teachers provide corresponding poetry datasets, and students adjust algorithm parameters to create poems with diverse styles. Subsequently, students engage in evaluation and discussion among themselves, collectively exploring the strengths and weaknesses of the algorithms and potential avenues for improvement.

The specific design of classroom activities is as follows: At the beginning of the course, the teacher poses questions or assigns digital experiment tasks to clarify learning objectives. Students then engage in group discussions and experiments under the teacher's guidance, with the teacher providing timely assistance to resolve encountered issues. Finally, each group presents their research findings, followed by summary and evaluation. This teaching method aims to cultivate students' problem-solving abilities and innovative thinking.

5. Reform of the Teaching Evaluation System

5.1. Multidimensional Evaluation Indicators

To comprehensively evaluate students' learning outcomes in the teaching reform of ancient literary history, it is necessary to establish multi-dimensional evaluation indicators. In addition to traditional knowledge assessments, new dimensions such as "digital literacy" and "cultural interpretation competence" should be emphasized. "Digital literacy" examines students' ability to apply digital humanities technologies in literary research, such as proficiency in text mining tools and effective utilization of database resources. "Cultural interpretation competence" focuses on students' understanding and analytical skills regarding the cultural connotations embedded in ancient literary works.^[6]

At the same time, quantify procedural data, such as students' contribution values in the database, including the quantity and quality of annotations on ancient texts, and their level of activity in discussions. The specific content is shown in Table 1.

Table 1. Evaluation Dimensions, Content, and Weight Comparison Table

Numble	Evaluation Dimension	Weight	Evaluation Content
1	Digital Literacy	30%	Proficiency in text mining tools, database usage, etc.
2	Cultural Interpretation Ability	30%	Depth and accuracy of interpreting cultural connotations
3	Process-Oriented Data	20%	Database contribution value, class participation, etc.
4	Traditional Knowledge Assessment	20%	Written exams, assignment grades, etc.

5.2. Dynamic Feedback Mechanism

Using online education platforms, a learning behavior analysis system with a dynamic feedback mechanism is constructed. This system collects students' behavioral data in classroom learning, online discussions, digital experiments,

and other activities, such as learning duration, content viewed, and frequency of questions. AI algorithms are then applied for analysis.

The AI diagnostic model plays a key role in this process. It accurately identifies students' learning challenges and potential, providing teachers with detailed diagnostic reports.

Through practical application, this mechanism allows timely adjustments to teaching strategies, meets students' personalized needs, and improves learning outcomes.

6. Challenges and Future Development Directions

6.1. Existing Technical Bottlenecks

In the teaching reform of ancient literary history under the "Digital Humanities" framework, the existing technical bottlenecks cannot be overlooked. These are primarily reflected in two aspects: OCR recognition errors and insufficient computational power. Due to the diverse fonts and varying writing styles of ancient texts, OCR technology struggles to achieve precise recognition, leading to errors in text conversion that compromise the accuracy and usability of teaching resources.^[8] Insufficient computational power further restricts the processing of large-scale data and the execution of complex algorithms, hindering the efficient application of advanced digital humanities technologies in teaching.^[7]

To address these issues, phased solutions can be implemented. For OCR recognition errors, manual proofreading and optimization of recognition algorithms can improve accuracy; regarding insufficient computing power, technologies such as cloud computing can be adopted to leverage external computational resources.

6.2. Long-term Development Pathway

To achieve sustainable development in the teaching reform of ancient literary history, a dual-core-driven model of "technology-humanities" should be advocated. On one hand, continuous advancement in the application of digital humanities technology in teaching should be pursued, innovating teaching methods and tools to enhance teaching efficiency and quality. On the other hand, adherence to humanistic values must be upheld, emphasizing the cultivation of students' passion for ancient literature and their awareness of traditional cultural heritage, while avoiding excessive reliance on technology at the expense of humanistic depth.^[8]

Planning a nationwide digital literature education network is a crucial measure for long-term development. By integrating high-quality teaching resources across regions, resource sharing and collaborative exchanges can be realized, breaking geographical barriers and enabling more students to benefit.

7. Summary

Digital humanities has brought three major transformations to ancient literature teaching: Knowledge Transmission: Transitioning from traditional teacher-centered lectures to the use of text mining, visual analysis, and other technologies to present knowledge in more intuitive and diverse ways. Students actively participate in knowledge exploration,

enhancing learning interest and effectiveness. Academic Training Model: Establishing collaborative research platforms to encourage cross-institutional data sharing and collaborative research. This cultivates students' teamwork skills and innovative thinking, making academic training more scientific and efficient. Cultural Heritage Pathway: Through immersive scene construction, such as virtual Du Fu's Thatched Cottage, students experience ancient cultural atmospheres firsthand, strengthening their sense of identity with and awareness of traditional cultural heritage.

This study focuses on addressing the challenges faced in ancient literature teaching and proposes a series of reform strategies through the application of digital humanities technology. In the future, with continuous technological advancements and deeper teaching practices, the application of digital humanities in ancient literature teaching will become more extensive and profound, further promoting the modernization of ancient literature teaching and cultivating more talents with profound cultural literacy and innovative capabilities.

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