

Digital Human Culture of Local Characteristic Cultural Resources

-- Expansion and Construction of Yangzhou Academic School

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ABSTRACT

As a significant regional academic school, the Yangzhou academic School holds considerable humanistic and historical value. With the widespread application of digital humanities technologies, the utilization and importance of data resource repositories have steadily increased. Serving as a distinctive local cultural resource, the Yangzhou University Library has established a Yangzhou academic School resource database. However, the database currently faces shortcomings such as delayed updates, outdated technology, limited content, and lack of classification. From the perspectives of digital humanities and the contemporary context of cultural development, this paper offers personal insights and recommendations on the significance of expanding the Yangzhou academic School data repository and approaches to its enhancement.

KEYWORDS

Digital Humanities; Database; Yangzhou Academic School.

1. OVERVIEW OF THE CONSTRUCTION OF THE YANGZHOU ACADEMIC SCHOOL DATABASE

Yangzhou holds a significant position in China's historical development. Yangzhou culture features distinctive characteristics within China's regional cultures and has made important contributions to the advancement of Chinese civilization. Yangzhou culture embodies profound cultural connotations, integrates regional features from both the north and south, fosters a coexistence of refined and popular cultural environments, and exemplifies a balanced humanistic spirit combining strength and gentleness. Broadly, it can be divided into three forms and three levels. The three forms include: the material form, such as architecture, gardens, and streets; the artistic form, including drama, folk arts, painting, and crafts; and the ideological form, encompassing humanistic spirit and folk customs. The three levels correspond to academia, arts, and technology.

At the academic level, Yangzhou was the birthplace of the important Qing dynasty Han learning school known as the Yangzhou academic School. Besides Han learning, the Yangzhou academic School has also made achievements in history, arts, education, astronomy, medicine, and other fields. For example, in historical research, the Yangzhou academic School not only applied the evidential research methodology of classical Confucian studies to historiography but also expanded the scope of traditional historical studies. Currently, institutions such as the Yangzhou Municipal Library, Museum, Yangzhou University Library, and local memorial halls have made notable progress in organizing materials related to the Yangzhou academic School, including historical documents,

academic achievements, cultural relics, and monographs. However, further improvements are needed in content classification and database expansion.

Yangzhou University Library has established a comprehensive regional cultural database of Yangzhou culture, which comprises 17 sub-databases, including Yangzhou cultural overview, academic culture, religious culture, educational culture, architectural culture, garden culture, ecological culture, tourism culture, commercial culture, culinary culture, and canal culture. Among these, the Yangzhou academic School specialized database is part of the Yangzhou academic culture sub-database. The Yangzhou academic School database contains 89 entries, mainly divided into general research overviews of the Yangzhou academic School, thematic studies of some representative figures, biographies (including entries on Wang Zhong, Wang Niansun, and Wang Yinzi), and anecdotes. The majority of the entries consist of modern scholars' academic research on the Yangzhou academic School.

The full-text bibliography of the Yangzhou academic School includes 24 scholarly works, such as Ruan Yuan's "擘经室集" (Zhonghua Book Company, 1993), Wang Niansun and Wang Yinzi's "高邮王氏四种", "高邮王氏遗书" (Jiangsu Ancient Books Publishing House, 2000), along with 13 monographs, 5 biographical studies, and 3 chronological records on the Yangzhou academic School. Beyond the Yangzhou academic School sub-database, the historical culture sub-database also includes some related materials. For instance, it holds research on representatives of the Yangzhou academic School not included in the sub-database, such as Jiao Xun and Ruan Yuan, including the Japanese scholar Ozawa Fumishiro's "仪征刘孟瞻(文淇)先生年谱" (Wenhai Publishing House, 1972). Importantly, these two sub-databases do not contain overlapping materials. Additionally, the Yangzhou Library's digital resource repository separately houses a biographical database dedicated to Liu Shipai.

Although the Yangzhou academic School database construction has achieved certain results, with ongoing technological advancements and deepening research, several shortcomings have become apparent during recent use. These include delayed updates, outdated technology, limited content, and lack of classification.

1.1. Delayed Updates and Outdated Technology

Delayed updating and insufficient maintenance constitute one of the main problems facing the Yangzhou academic School digital resource database. Currently, the most recent content dates back to 2011. Research achievements and relevant resources produced during the past 12 years remain unincorporated. Notable works such as "清代扬州学派著述总目" [1], "江藩集校注" [2], and "焦循焦廷琥年谱" [3] have not been included. In addition to books, relevant journals and academic papers concerning the Yangzhou academic School have also not been timely collected and updated. Among the existing entries, daily maintenance is lacking, exemplified by the biography entry of Wang Zhong, where the name is incorrectly written as Jiang Zhong and remains uncorrected.

Apart from content update stagnation, the database's technical infrastructure is also outdated. The system supports keyword searches only in titles, not within full content. It lacks sorting functions, so search results are displayed only in a default order, without options to reorder by relevance, date, or other criteria, increasing the complexity of data retrieval.

1.2. Limited Content and Lack of Classification

In terms of both overall volume and individual inclusions, the Yangzhou academic School database established by Yangzhou University remains limited. From the perspective of represented members, Professor Liu Jianzhen's Study of Qing Dynasty Yangzhou academic School Classics lists 40 identifiable representative figures, categorized into early, middle, and late phases based on scholarly

groups, age, and academic characteristics. However, the database covers only a portion of these individuals.

Regarding resource categories, the digital resource database ideally should include biographies, works by Yangzhou academic School figures, related research papers, local histories, manuscripts, correspondence, poetry, family genealogies, diaries, and portraits. However, the database predominantly contains research papers, with fewer original historical materials such as writings, artistic works, and manuscripts. This may be due to the current limitations of digitizing ancient bibliographies, resulting in most original documents being held physically by the Yangzhou Municipal Library.

On content classification, the relatively small volume may explain the absence of detailed sub-categorization. Moreover, there is no clear distinction as to whether related materials belong to the Yangzhou academic School sub-database or the Yangzhou historical figures sub-database. Consequently, materials on some Yangzhou academic School members can be found in the latter but not in the former. From a technical standpoint, if feasible, the two sub-databases could either allow overlap or the Yangzhou academic School database could be organized as a sub-collection under the broader historical figures database.

1.3. Broader Context and Recommendations

The issues identified in the Yangzhou academic School database are not unique and to varying degrees appear in other digital resource repositories. Although the original goals and planning for the Yangzhou academic School database are unclear, its usage rate is evidently low. Furthermore, restricted access permissions limit public awareness of the database's existence.

Building resource repositories should transcend mere preservation and inheritance of documents; emphasis must also be placed on resource development and application. The goal is not only to "rebuild" but also to "reuse" resources effectively.

As a regionally distinctive cultural asset, Yangzhou University Library should leverage its geographic advantage, resource acquisition capabilities, and talent pool to align with national policies emphasizing the protection of historical and cultural heritage and the revitalization of traditional culture. By proactively expanding the existing Yangzhou academic School database, it can enhance its social and contemporary value.

2. THE SIGNIFICANCE OF CONSTRUCTING THE YANGZHOU ACADEMIC SCHOOL DATABASE

2.1. Preserving Local Historical Memory and Inheriting Valuable Cultural Resources

The Yangzhou academic School is a regional academic tradition whose emergence and development reflect not only shifts in government cultural policies and social cultural climate at the time but also mirror the historical processes of economic and cultural development in the Yangzhou region. Leveraging its geographic advantage as part of the Grand Canal, Yangzhou became the most prosperous commercial city in the early Qing dynasty. It was famously said that "Yangzhou is the intersection of north and south, known to all scholars and officials from every direction" [4]. The formation of the Yangzhou academic School was one of the key cultural symbols of Yangzhou's urban prosperity during the Qing period.

Expanding the Yangzhou academic School data repository can, to a considerable extent, provide a comprehensive, three-dimensional, and systematic restoration of the historical culture and social landscape of the time. It thus represents a precious urban historical memory and plays an important role in researching local culture and promoting urban cultural tourism. Moreover, expanding the

database allows for the digitization and systematic classification of original works and research materials related to Yangzhou academic School members, compensating for the limitations of paper-based document preservation. This facilitates the long-term protection and utilization of the Yangzhou academic School's cultural heritage, prevents the loss and deterioration of cultural resources, and promotes the inheritance and development of the Yangzhou academic School culture.

2.2. Improving the Data Resource Platform to Support Historical Research

From an information technology perspective, Xiang Jie divides the existing collaborations between digital humanities and historical research into two types: retrieval and quantitative analysis, pointing out that databases based on digital humanities concepts and technologies provide an exploratory environment and platform for historical research rather than merely offering search results or data. Historical document databases offer rich material sources for historians, enabling in-depth research into historical events, trends, and evolutionary processes, thereby advancing the discipline of history.

As previously analyzed, although cultural resources related to the Yangzhou academic School are abundant, they are scattered. Scholars cannot access all relevant documents on a single platform. Since related materials are dispersed across museums, memorial halls, archives, libraries, and other institutions, the expansion of the Yangzhou academic School database requires collaborative efforts among universities and institutions to unify, process, classify, and centrally publish these scattered resources. This cooperation would build a large-scale, open, and shared digital humanities resource platform specialized in the Yangzhou academic School, providing historians with richer bibliographic references, academic exchange opportunities, and resource access.

2.3. Leveraging Cultural Value to Guide Ideological and Era Transformation

During his 2023 inspection of Jiangsu Province, General Secretary Xi Jinping emphasized the need to strengthen the protection, inheritance, and innovative development of excellent traditional culture, to promote cultural undertakings and industries, and to enhance social modernization. The literary resources of local historical figures, as textual carriers of cultural, artistic, economic, and political evolutions specific to particular periods and regions, embody precious cultural connotations and spiritual wealth. They are vital for interpreting regional literary trends, exploring local historical transformations, and shaping local cultural identities[5].

The material and spiritual wealth created by members of the Yangzhou academic School combine historical tradition and contemporary influence. For example, the Yangzhou academic School's distinctive feature in classical studies is its integration with social realities. Wang Zhong emphasized practical relevance in classical scholarship, aiming to guide contemporary social life. In works such as *Discussion on Women's Betrothal and Following Their Husbands in Death* and *Explanation of the Thirty-Nine*, he offered profound insights into ritual issues in daily life with strong contemporary significance[6]. Jiao Xun advocated adaptive measures to rescue the perceived "declining age" around the Qianlong and Jiaqing reigns, while Ruan Yuan stated in *Great Yuan Ge Wu Theory* that "the way of sages is nothing but practice." The Yangzhou academic School's academic philosophy of "applying learning for practical governance" offers important implications for modern scholarship. Contemporary scholars should focus on practice, interdisciplinary cooperation, social issues, and responsibility, combining academic research with social practice to contribute positively to social progress and human well-being.

Furthermore, the moral conduct, life experience, and values of Yangzhou academic School members provide spiritual inspiration and proper value guidance for later generations. For example, Ruan Yuan's famous saying, "One should aspire to genuine character and study diligently," emphasizes the importance of establishing correct values and life outlooks, as well as diligence, offering crucial guidance for personal life planning.

Additionally, the database can provide educators with rich teaching resources, aiding students' understanding of historical knowledge and the cultivation of historical consciousness, inspiring their interest and curiosity in history, enhancing cultural identity, and strengthening cultural confidence.

3. EXPANSION AND APPLICATION OF THE YANGZHOU ACADEMIC SCHOOL RESOURCE DATABASE

Digital humanities is an interdisciplinary field combining digital technology and humanities disciplines. It employs digital tools and methods to study humanities content and phenomena, such as digitized archives, data visualization, and digital mapping. The integration of digital humanities and history helps scholars better understand historical subjects and broadens the scope and depth of historical research. Local historical figures' resources are crucial collections documenting regional evolution, historical changes, folk culture, and religious beliefs, and are key priorities in libraries' digital humanities memory projects[7].

The expansion and application of the Yangzhou academic School resource database can be approached from the following aspects:

3.1. Collection and Organization of the Database:

Digital humanities can assist historians in digitizing traditional literature and archives to facilitate easier access and searchability, enabling faster retrieval and analysis. Currently, the Yangzhou academic School data repository lacks comprehensive content and is fragmented and isolated. University libraries should collaborate with relevant departments to form specialized teams to unify the collection of Yangzhou academic School materials, applying text mining and natural language processing to extract useful information from large volumes of historical texts. On this basis, the new database framework can reorganize and integrate resources into an improved data repository.

Libraries should also utilize big data and intelligent analysis technologies to link scattered resource information, constructing a Yangzhou academic School humanities knowledge graph. Such a knowledge graph reconstructs knowledge by deeply mining local historical figures' information, revealing implicit knowledge connections, aggregating related resources, and discovering new historical insights.

3.2. Database Updating and Maintenance:

The Yangzhou academic School database requires ongoing maintenance beyond its initial construction. Libraries need to regularly update its content to ensure accuracy and completeness and actively track related research developments to timely incorporate new literature. Beyond content updates, libraries must collaborate with IT departments to enhance and optimize database functionalities, improve retrieval efficiency, and ensure user-friendly access. Regular user feedback collection and analysis are essential for continuous improvement of features and interface design.

3.3. Promotion and Utilization of the Database:

Libraries can leverage the Yangzhou academic School resource database to support related research, uncovering the school's social value and contemporary relevance. By integrating with local cultural tourism, the database can be promoted through websites, applications, memorial hall exhibitions, and tourism publicity to expand its user base. Since database construction is inherently a public welfare endeavor, relying solely on university library efforts is insufficient to cover substantial costs. Therefore, libraries should actively engage in cooperation with related institutions, academia, and cultural sectors, mobilizing societal support for joint maintenance and enhancement of the Yangzhou academic School database.

Regarding utilization, with rapid technological advancement, Yangzhou University Library can apply modern digital and virtual technologies to deepen the exploration and multidimensional presentation of the database, broadening researchers' perspectives. For example, combining geographic information system (GIS) technology allows spatial analysis of Yangzhou academic School members' travel footprints, historical events, and social activities, offering innovative visualizations for the study of specific individuals or events.

4. CONCLUSION

As an important regional academic school, the Yangzhou academic School holds significant humanistic and historical value. With the application of digital humanities in interdisciplinary fields, traditional humanities disciplines are encountering new developments and opportunities. In history, digital humanities techniques enable historians to analyze and understand historical events, trends, and cultures more deeply. The establishment of data resource repositories aids historians in managing vast historical data, documents, and materials, facilitating the discovery of new insights and patterns. Furthermore, digital humanities provide modern visualization tools that enhance the interactivity and appeal of historical research, enriching content and achievements. Against this backdrop, universities should seize the opportunity to use database construction as a foundation to explore the broader domain of digital humanities.

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