

# *Analysis of the current status and cutting-edge trends of “new liberal arts” research*

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**Abstract:** The construction of "new liberal arts" is a new liberal arts education model that improves on the shortcomings of traditional liberal arts teaching. The construction of "new liberal arts" can promote the integration of traditional liberal arts teaching and contemporary information technology, thereby cultivating compound talents with cross-disciplinary knowledge of liberal arts and science. This study aims to use the bibliometric software Citespace and VOSviewer to analysis the relevant journal papers in HowNet for comprehensive analysis. Through quantitative research, intuitive results such as the research status, research clustering, and research frontiers of the "new liberal arts" are obtained. Through comprehensive analysis, it is found that digital literacy, digital design, and digital economy are the current research frontiers of the "new liberal arts" construction. The conclusions of this study provide objective reference materials for the current construction of the "new liberal arts".

## **1. Introduction**

The concept of “new liberal arts” was first proposed by Hiram College in 2017, and the school began to implement the “new liberal arts construction plan” in that year [1]. In 2018, the Ministry of Education of China issued the “Opinions on the Implementation of the Basic Discipline Outstanding Students Training Plan 2.0” [2]. This opinion first proposed to promote the “four new” construction of new engineering, new medicine, new agriculture and new liberal arts. In 2019, the Ministry of Education issued the “Opinions on Accelerating the High-Quality Development of Undergraduate Education in the New Era”, which clearly proposed to build new liberal arts. The document puts forward the importance of cultivating innovative talents, emphasizes the integration and cross-integration of arts and sciences, and gradually forms a distinctive new liberal arts talent training system. In 2020, the “New Liberal Arts” Construction Steering Committee was established. It further clarified the direction and focus of the construction of the new liberal arts, and proposed to reform the curriculum, faculty, teaching content and other aspects. Since then, the construction of the new

liberal arts has set off a new round of teaching reforms in colleges and universities. The construction and research of the “new liberal arts” has become one of the important research directions in the current education field.

In order to keep abreast of the progress of the construction and practice of the "new liberal arts", many scholars have conducted follow-up analysis on the construction of the "new liberal arts" and published review articles. Related papers include a review of the research history and frontiers of the "new liberal arts" using bibliometric software [1]. In view of the characteristics of the "new liberal arts" teaching reform, scholars have reviewed the teaching system, curriculum construction, and cross-disciplinary talent training of the "new liberal arts" [3]. Scholars have conducted comparative studies on the "new liberal arts" and traditional liberal arts, and conducted research reviews from the aspects of discipline development path, problem exploration, and talent training [4]. Although the academic community has conducted useful review studies on the construction of the "new liberal arts", there are still problems such as insufficient comprehensiveness and insufficient disciplinary research characteristics. Based on this, this paper intends to use the bibliometric software CiteSpace and VOSviewer for visual analysis based on previous research. By conducting a bibliometric analysis of a total of 5,400 relevant journal articles in the China National Knowledge Infrastructure (CNKI) database from 2018 to 2023, the research results are comprehensively and systematically sorted out and summarized, intuitively presenting the research dynamics and hot topics in this field, and exploring the future development trend of the "new liberal arts" research.

## **2. Data Sources and Research Methods**

### **2.1 Data Source**

The literature data of this article comes from the CNKI journal database. "New liberal arts" is used as the search keyword, and the search time range is from 2018 to 2023. Through manual screening of papers and elimination of irrelevant papers, about 5,400 valid papers were finally obtained. The qualified literature after screening was downloaded and exported in the "Refworks" format, and the "Refworks" data was used as the research data of this article.

### **2.2 Research Methods**

This paper uses Citespace and VOSviewer [5] software to draw maps and realize data visualization. The software is used to understand research hotspots and research frontiers and to identify the cooperation relationships between different authors and institutions in the research field. The specific operation steps are to import the data after cleaning and preprocessing into the software, and then perform data conversion. After importing the data, keyword co-occurrence analysis, keyword clustering analysis, keyword timeline analysis, keyword prominence analysis, and author and institution cooperation map analysis are performed to clarify the main research direction in the field and identify research hotspots and their evolution trends.

## **3. Research results**

### **3.1 Time distribution of literature**

According to the theory of bibliometrics, the change in the number of annual publications can reflect the development process of the field to a certain extent. In order to explore the overall trend of the number of publications on the "new liberal arts" over time, this paper collects about 5,400 articles on the "new liberal arts" collected in the CNKI database each year. The progress of the annual

publication volume of literature related to the "new liberal arts" research can be roughly divided into three stages: the initial stage (2018-2019), during this period, the Ministry of Education proposed the "four new" construction strategy, pioneered the construction of the "new liberal arts", and corresponding literature began to appear. The number of documents showed an initial growth trend, and the number of documents increased from 0 to 130. Rapid growth stage (2019-2022). During this period, the new liberal arts developed rapidly, and related research results showed a high-speed growth stage. The construction of the "new liberal arts" became a new field of educational research, and the number of published documents also increased rapidly. By 2022, the number of published documents reached a peak of 2,428, of which a total of 839 were published in core journals. Steady growth stage (2022-2023). During this period, the "new liberal arts" research entered a stable stage, and the number of published documents showed a slow growth trend. In summary, the research literature on the "new liberal arts" has shown an overall growth trend since 2018, among which the growth rate of literature published in ordinary journals is higher than the number of literatures published in core journals. The literature growth trend is still in an upward stage. In the future, the research literature on the "new liberal arts" will continue to grow. This also shows that the construction and research of the "new liberal arts" has become one of the current research hotspots in the field of educational research.

### 3.2 Research field distribution

The field distribution of the research literature on the construction of "new liberal arts" by statistically analyzing the downloaded documents. According to the subject distribution, the research on the literature related to "new liberal arts" is mainly concentrated in the fields of foreign languages and literature (779 articles), Chinese languages and characters (588 articles), news and media (476 articles), computer software and computers (344 articles), literary theory (333 articles), fine arts, calligraphy, sculpture and photography (318 articles). The scope of disciplines included in the research of "new liberal arts" is very wide, including not only literature, history, philosophy and so on, but also library information and digital library, etc. Therefore, in order to better promote the development of "new liberal arts" and meet the new needs of liberal arts education in the new era, in the process of promoting the research and construction of "new liberal arts", there should be a comprehensive thinking that integrates liberal arts and science disciplines, so as to better improve the comprehensiveness and cutting-edge nature of research results.

### 3.3 Research author collaboration

The cooperative relationship between authors of research papers is very important for disciplinary cooperation, resource sharing and academic promotion. Therefore, this section uses VOSviewer software to analysis by selecting the co-author analysis option. Authors who have published more than the set number of papers are selected for mapping. From the map, it can be found that Zhou Xing, Zhang Yan and Hu Zhifeng have the most collaborations, and the three of them constitute an author collaboration group. The research content of this collaboration group is to study how art disciplines can build new liberal arts, improve the comprehensiveness of humanities and theoretical logic, and learn from the experience of other disciplines to adapt to the development of the new liberal arts in the new era. In addition, Wang Na, Li Fengliang, Liu Jie and Chen Tao are another author collaboration group. Their main research content is the importance of laboratory construction in the context of new liberal arts construction and its possible development direction. However, looking at the entire map, although the cooperation points can be seen, the concentration is low and the overall dispersion is present. Through the data, it is found that the top ten authors in terms of the number of publications are Zhou Xing, Wang Ning, Zhang Yan, Liu Dan, Wu Yan, Zhang Beibei, Tang Yanjun,

Zhang Jing, Fan Liming, and Wang Na. Zhou Xing published 31 articles from 2019 to 2023. The author proposed that in the process of building the "new liberal arts", it is necessary to improve the comprehensiveness of humanities and theoretical logic. It is recommended to learn from the experience of other disciplines to adapt to the development of the new era, and emphasize that in the specific practice process, there are problems such as curriculum system, teacher resources, and dual innovation environment [6-8]. Wu Yan published a total of ten articles related to the new liberal arts from 2019 to 2022, mainly pointing out the importance and reform and development trends of higher foreign language education, new liberal arts construction, and liberal arts education in the context of the new era [9-11].

### 3.4 Cooperation with research institutions

With the increasing complexity of many scientific problems, interdisciplinary research has become one of the development trends of current scientific research. In addition to the disciplinary cooperation of the unit, interdisciplinary research also involves collaboration between different units. Through the analysis of the status of cooperative units, research resources can be shared, the quality of papers can be improved, and policy support can be increased. This paper uses VOSviewer software to visualize the cooperative institutions of the literature, so as to find out the closeness and mode of cooperation between the cooperative units of "new liberal arts" research. VOSviewer software can draw an institutional cooperation map. The number of institutional articles published in the map is represented by the size of the node. The larger the node, the more articles are published, and vice versa. The research results show that, except for the School of Art and Media of Beijing Normal University, China Conservatory of Music, and Jilin University, the cooperation network between other institutions is relatively scattered, and there is less academic exchange between institutions. Through the analysis of the data, the School of Art and Media of Beijing Normal University ranks first with 36 articles published, followed by Nanjing University of the Arts with 20 articles published. It can be seen that art colleges and universities have the most positive response to the new liberal arts research. The information resource management colleges of comprehensive universities such as Heilongjiang University, Renmin University of China, Sichuan University, Shanghai Jiaotong University, Nanjing University, and Wuhan University also have outstanding research in the context of the new liberal arts.

### 3.5 Study cluster analysis

#### 1) Keyword co-occurrence analysis

The basic principle of keyword co-occurrence analysis is that if two keywords often appear in the same document, there may be some semantic or research content relationship between them. By analyzing the co-occurrence relationship of keywords in a large number of documents, we can identify the topic clusters of the documents and their mutual relationships [12,13]. This paper uses VOSviewer software to perform keyword co-occurrence analysis.

By summarizing and analyzing the calculation results, we can get the number of keyword occurrences, the year of occurrence, and the centrality, etc. The top ten keywords ranked by the number of occurrences are: new liberal arts, talent cultivation, curriculum ideological and political education, teaching reform, discipline construction, curriculum system, practical teaching, interdisciplinary, teaching model, and college English.

#### 2) Keyword clustering and timeline analysis

This section uses Citespace software for clustering and timeline analysis. The results of cluster analysis show that the research literature can be divided into 7 categories, namely #0 new liberal arts, #1 curriculum ideological and political education, #2 innovation, #3 cross-integration, #4 talent

training, #5 practical teaching, and #6 interdisciplinary. In cluster 0, the top three keywords are integration, digitalization, and art disciplines. In cluster 1, the top three keywords are teaching reform, curriculum reform, and teaching model. In cluster 2, the top three keywords are new integration, path, and aesthetic education. In cluster 3, the top three keywords are new era, interdisciplinary, and teaching humanities. In cluster 4, the top three keywords are data literacy, experimental teaching, and innovation and entrepreneurship. In cluster 5, the top three keywords are local universities, curriculum system, and curriculum construction. In cluster 6, the top three keywords are cross-disciplinary, environmental design, and industry-education integration.

The keyword timeline map can clearly show the internal connection between each keyword node. This maps can help researchers intuitively observe the development trends of research topics, the appearance time of keywords, and their evolution paths within a particular field [12].

Research on the new liberal arts is mainly carried out around seven themes. These themes clusters can be divided into three processes. (1) Exploration and definition of the new liberal arts. The keywords "curriculum ideology and politics" and "interdisciplinary" appear, mainly focusing on traditional liberal arts teaching, identifying modern social needs and development trends, and defining the scope and methods of new liberal arts research. (2) Focus on innovation and interdisciplinary. The keywords "innovation" and "interdisciplinary integration" have become the focus of research. "Talent training" and "practical teaching" have also gradually become research hotspots. (3) New liberal arts research pays more attention to discipline construction and social responsibility.

### 3.6 Analysis of research frontier trends

The burst analysis in CiteSpace software is a technique for identifying the sudden increase in the frequency of keywords, documents, authors, etc. within a specific time period. This analysis can help researchers capture emerging hot spots, trends, or important academic breakthroughs in the research field. The emergence of burst words usually means that a certain topic has received widespread attention from the academic community within a specific period of time, so it can be used to reveal the dynamic changes in the research field [12,13]. The keyword burst analysis can find nodes with sudden changes, which are displayed in dark red. This change reflects the sudden increase or decrease in the number of articles within a period of time. The burst analysis function of Citespace is used to detect the results of keyword burstiness and export the knowledge graph of the top 20 keyword bursts.

This article uses citespace software to calculate the "top 20 most emergent keywords between 2018 and 2024". In summary, the changes in the research frontier can be divided into three stages: (1) New Era (2019): The highest emergence intensity reached 5.35, and the emergence time was 2019-2021. This means that the keyword "New Era" received great attention between 2019 and 2021. (2) Keywords such as general education (2020), integrated media (2020), and knowledge production (2020). The emergence time of these keywords is concentrated around 2020, with an intensity of around 2.58, indicating that they have been widely studied and discussed during this period. (3) Art disciplines (2020), undergraduate education (2020), etc. The emergence time of these keywords is later, but they are still concentrated in 2020-2021, indicating that education-related topics have become research hotspots during this period. (4) Core literacy (2021), digital design (2021), curriculum (2021), etc. These words appeared in 2021 and reached their peak of emergence around 2021. In particular, "core literacy" and "curriculum" have emergence intensities of 1.72 and 1.21 respectively, indicating critical discussions in the field of education. (5) Digital economy (2022). As the latest keyword, its emergence time is 2022-2024, and its emergence intensity is 0.34, indicating that this topic has gradually emerged in recent years and may continue to be a research hotspot in the future.

In summary, the change in research hotspots from "new era" to "digital economy" shows that the



research topic has gradually shifted from focusing on education and social background to the field of digitalization and technology. The time span shows that the emergence time of many keywords is relatively concentrated, especially in 2020 and 2021, which may reflect the promotion of academic research by certain events or policies at that time. As for the continuity of research, some keywords have a shorter duration of emergence (such as "new era"), while others show a longer attention time (such as "digital economy"), suggesting differences in the stability of research hotspots.

#### 4. Conclusion

This paper uses the bibliometric visualization software Citespace and Vosviewer to conduct a comprehensive analysis of the research results on the construction and practice of the "new liberal arts". The article collects about 5,400 "new liberal arts" journal papers from CNKI from 2018 to 2023 for analysis. Research conclusions: (1) Time series analysis shows that the research on "new liberal arts" has shown an increasing trend year by year and is still increasing. (2) The research field of "new liberal arts" is mainly concentrated in discipline construction and teaching practice exploration. (3) There are few multi-person collaborative research results in the field of "new liberal arts" research. (4) The research results of "new liberal arts" show that the degree of institutional cooperation is not high. (5) The research clusters of "new liberal arts" are mainly concentrated in new liberal arts, talent training, and curriculum ideological and political education. (6) The recent research frontiers of "new liberal arts" are the integrated research of digital literacy, digital design, and digital economy.

With the widespread application of generative artificial intelligence technology in recent years, traditional liberal arts teaching has been greatly impacted. In order to cope with the changing demand for talents in the new generation of information technology, it is urgent to change traditional liberal arts education. Based on this, the "new liberal arts" teaching reform has been carried out since 2018. This paper summarizes the connotation and extension of the construction of "new liberal arts" by sorting out the temporal and spatial development trends of existing research results. The research conclusions of this paper provide reference materials for the sustainable development of liberal arts education.

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