

Research Status and Evolutionary Trends of Student Ideological Education: A Knowledge Mapping Analysis Based on CiteSpace

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Keywords: Student ideological education, ideological and political education, CiteSpace, knowledge map.

Abstract

Student ideological education is a key pathway for shaping students' sound personalities and correct values, which not only concerns individual growth but also serves as an important guarantee for social harmony and development. This paper uses the information visualization software CiteSpace to perform a visual knowledge map analysis of 2,838 papers on student ideological education published between 2000 and 2024 in the CNKI database. The aim is to explore the research overview, hotspots, and trends in this field. The study finds that the overall number of publications follows a trend of increasing and then decreasing, with a large number of authors, but no well-established collaborative network. The main research hotspots focus on four areas: ideological and political education, educational methods, vocational college students, and university counselors. At the same time, seven keyword clusters are generated, with strong connections between them. In terms of emerging terms, "curriculum-based ideological education" and "ideological education" have higher emergence intensity, while "ideological political work" and "university counselors" have longer emergence durations. In terms of research trends, recent studies on student ideological education have placed more emphasis on topics such as the new era and curriculum-based ideological education.

1 Introduction

Students are the future of the nation, and student ideological education is crucial for both the personal development of students and the prosperity of the nation's future [1]. On one hand, student ideological education is an important pathway for cultivating students' core qualities and comprehensive abilities. It not only helps students establish a correct worldview, outlook on life, and values, but also fosters innovative thinking, critical thinking, and problem-solving abilities. On the other hand, student ideological education also helps improve students' interpersonal skills and cultivate their sense of social responsibility and civic awareness.

With the continuous deepening of education reform and the rapid changes in the social environment, research on student ideological education in China has shown a trend of diversification and in-depth development. From early moral education and political education to the recent focus on socialist core

values and mental health education, the research content has expanded and deepened. At the same time, with the innovation of educational concepts and the advancement of educational technologies, the methods and approaches to student ideological education have become increasingly diverse. New educational models such as case teaching, situational teaching, and online education have emerged, injecting new vitality into student ideological education. However, in the rapidly changing social environment, student ideological education also faces numerous challenges and issues. One of the key research topics today is how to accurately grasp students' ideological trends in the context of the new era and effectively respond to the complex and changing social ideologies. Furthermore, as student demographics undergo generational shifts and individualized needs increase, innovating the content and methods of student ideological education to improve its relevance and effectiveness is also an urgent issue to address.

Based on this, this paper uses bibliometric methods to review core literature on student ideological education from 2000 to 2024 indexed in the China National Knowledge Infrastructure (CNKI) database. Using CiteSpace, the paper performs a knowledge map visualization analysis of relevant literature on student ideological education and utilizes its quantitative data analysis functions to examine the historical process, research hotspots, frontier trends, and future development directions of student ideological education in the 21st century, aiming to contribute to future research in this field.

2 Data Sources and Research Methods

2.1 Data Sources

To ensure that the literature sample covers representative research achievements in the field of student ideological education, this paper uses the China National Knowledge Infrastructure (CNKI) database as the search platform and selects advanced search methods. The search query is set to "Student Ideological Education," with the time range set from 2000 to 2024 and the search date set to December 2, 2024, to retrieve Chinese literature on student ideological education published domestically. The next step involves screening the documents, excluding those unrelated to the search topic, duplicate publications, conference abstracts, news reports, advertisements, and other irrelevant information. As a result, 2,838 valid documents are obtained, which are then exported in Refworks format for visualization analysis in this study.

2.2 Research Methods

This paper primarily uses knowledge mapping methods for bibliometric analysis. CiteSpace is a knowledge mapping software developed by Professor Chen Chaomei at Drexel University in the United States. It not only mines knowledge clusters and distributions in citation spaces but also performs co-linearity analysis of knowledge units such as authors and research institutions. CiteSpace, a Java application for visualization analysis, was developed in the context of scientometrics and data visualization, focusing on uncovering potential knowledge contained in scientific analyses. Based on the concept of temporal duality between research frontiers and knowledge repositories in information science, it provides two complementary views: the focus view and the time-zone view. As the structure, patterns, and distribution of scientific knowledge are presented through visualization, the visualized maps generated by this method are also referred to as mapping knowledge domains. Therefore, this paper utilizes CiteSpace (5.5.R2) software to perform a visualization analysis of the literature retrieved from the CNKI database. Through methods such as publication trends and author analysis, keyword co-occurrence, keyword clustering, keyword

emergence, and keyword strategic maps, this paper aims to review the current status, hotspots, and trends of research on student ideological education in China.

3 Research Results

3.1 Annual Distribution of Research Literature

The change in the number of publications can directly reflect the development speed of a research field. By statistically analyzing the annual publication volume, one can clearly observe the level of research activity and whether there is an upward or downward trend. At the same time, the change in annual publication volume serves as an important reference for assessing the maturity of research in a particular field. Generally speaking, an increase in the number of publications suggests that the field is in a stage of knowledge accumulation, while stable or decreasing publication volumes may indicate that the research has become relatively mature or encountered certain bottlenecks. By analyzing the annual publication volume of literature in the field of student ideological education from the CNKI database, we generated a trend chart of domestic student ideological education research publication changes from 2000 to 2024 (Figure 1), where the year 2024 is an incomplete data year due to the search time limit.

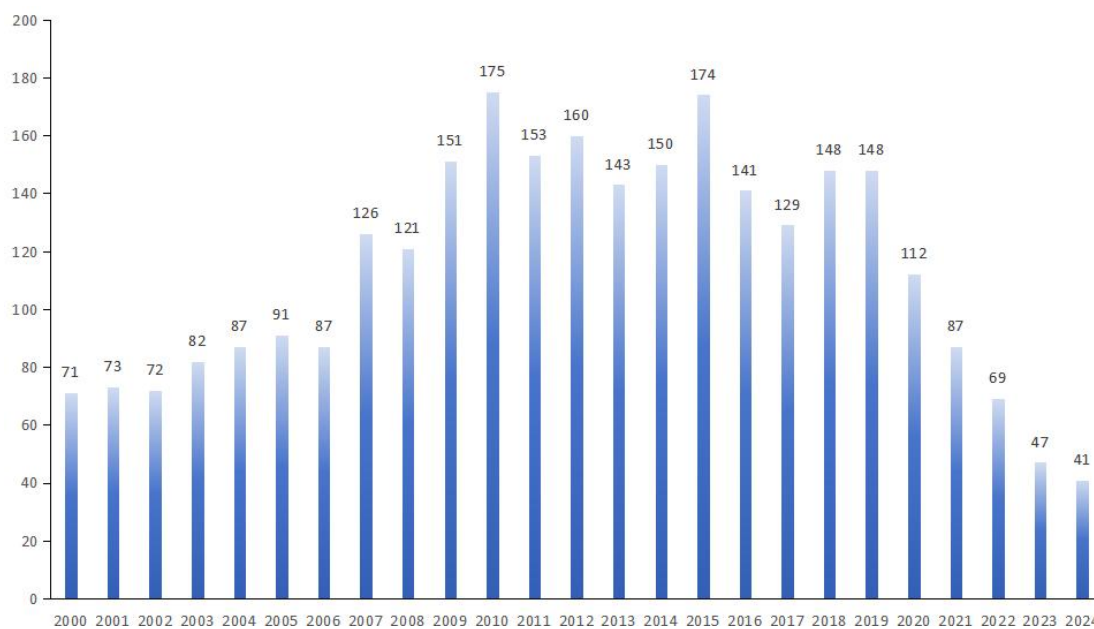


Figure 1. Annual Distribution of Research Literature

From Figure 1, we can observe that the research history of student ideological education in China can be divided into three stages. Between 2000 and 2006, the number of publications using "student ideological education" as a keyword remained relatively stable, with an average annual publication of around 80 papers. The research content included the systematics and operational models of student ideological education work^[2]. This suggests that during this period, scholars were in the initial exploration stage of student ideological education research, with the number of researchers gradually increasing, and the related research paradigm yet to form. From 2007 to 2019, the number of publications on student ideological education research showed a rapid upward trend, marking a prosperous period for the field. As research volume increased, this area gradually demonstrated significant academic, commercial, and social value. Scholars' interest in student ideological education grew, and collaborative efforts became more frequent. Research content covered multiple

areas, such as ideological education for intern students^[3], ideological education for vocational college students^[4], and ideological education in the new context^[5]. However, from 2020 to 2024, the publication volume began to decline, especially in the last two years. The possible reason is the relative lack of new research topics and innovations in recent years, leading to a gradual decline in publication volume. Additionally, after the research in this field matured, researchers began to shift their focus to other related areas or more in-depth studies.

3.2 Distribution of Research Authors

The total number of publications in academic journals can partially indicate an author's academic standing in the field of student ideological education. CiteSpace knowledge mapping software can create a collaborative knowledge map of authors in student ideological education research, revealing which influential authors are conducting research in the field. Therefore, this paper sets the map type to "Author," the time span to 2000-2024, the time interval to one year, and the Top value to 50, with all other values left by default, to generate a collaborative knowledge map of authors in student ideological education research. In this map, the thickness of the connecting lines is positively correlated with the collaboration intensity between authors, while the size of the author names is significantly positively correlated with the number of their publications. The larger the name font, the more publications the author has.

This research shows 78 nodes and 17 connecting lines, with a network density of 0.0057, indicating that 78 researchers have participated in the study. However, most authors conducted their research independently, with 10 small-scale research collaboration groups identified. Among them, the research team led by Zhao Zhiyong is the largest, consisting of 4 authors. This team believes that ideological education within courses is an important practical activity for universities to enhance student ideological education. They have carried out ideological education practices through various aspects, including the development of data chain technology, summarizing key technologies, improving anti-interference capabilities, and experimental group setups. Their approach integrates ideological education throughout the entire process of implementing professional courses, improving the quality of university teaching while simultaneously focusing on character development^[6]. The second-largest research team, led by Ma Dan, includes 3 authors. They argue that class student leaders in universities play a critical role in the student ideological education and daily management work. Furthermore, by drawing on the leadership life cycle theory, they summarized the unique growth patterns of university class student leaders and adopted management strategies based on the maturity of class leaders, thereby more effectively cultivating their management abilities^[7]. Other research groups are smaller, each consisting of two researchers.

Regarding the publication volume, the number of publications per author is relatively low, with minimal differences in publication volume. Authors who have published more than three papers in the field of student ideological education include Xiang Yinhuan, Deng Xin, Liang Xue, and Chen Ximing. Among them, the most productive author is Xiang Yinhuan, with 4 publications. Deng Xin has published 3 papers, where he discusses the growing phenomenon of students renting off-campus housing and commuting, which has caused significant difficulties in university student management and ideological education. Therefore, he emphasizes the need to strengthen education and management regarding student housing, while also enhancing ideological education and daily management, adopting a human-centered approach to managing and educating students renting off-campus^[8].

3.3 Research Hotspot Analysis

Keywords reflect the main themes of the research literature and can briefly summarize the key content of the papers. Keyword co-occurrence is used to describe the research intensity of keywords and the interconnections between them. By analyzing the frequency of keyword occurrences, we can identify the research hotspots and directions in the field of student ideological education. In the Citespace visualization software, we selected "Keywords" as the node type, set the time slice threshold to Top 50, and used the minimum spanning tree algorithm for network pruning. The visualization method chosen was a static view. Running Citespace on the relevant literature generated the knowledge map of keyword co-occurrence in student ideological education.

Firstly, regarding ideological and political education, the keywords include "ideological and political education," "ideological and political work," and others. The importance of ideological and political education is self-evident. It can guide students to establish the correct values and cultivate their awareness of social responsibility. By understanding social issues and development trends, students are better able to pay attention to societal problems, actively participate in public welfare activities, and form a positive and forward-looking attitude toward life. Secondly, regarding vocational college students, the keywords include "college students," "students," "vocational college students," and "university students." At present, vocational colleges have recognized the importance of student ideological education and have integrated it into their overall development plans. Vocational colleges have formulated relevant rules and regulations, clearly outlining the goals and tasks of ideological education. Additionally, efforts have been made to strengthen the training and recruitment of faculty, improving their educational level and professional competence, thus providing a solid foundation and guarantee for ideological education in vocational colleges^[9].

Next, regarding educational methods, the keywords include "new media," "educational management," "quality education," "online education," and "educational models." With the rapid development of network technology, the approaches to ideological and political education have been constantly innovating and evolving, driving the continuous advancement of online ideological and political education^[10]. Based on big data technology, online ideological and political education now benefits from more advanced information data collection methods, enabling a more comprehensive and objective analysis of the educational targets and outcomes. Finally, regarding university counselors, the keywords include "counselor," "class advisor," "university counselors," and "counselor work." These four categories of high-frequency keywords overlap and intersect, collectively building the research hotspots and framework in the field of student ideological education.

Table 1. Keyword Frequency Table

No.	Keywords	Frequency	Centrality	No.	Keywords	Frequency	Centrality
1	Ideological Education	599	0.6	16	High School Students	36	0.06
2	Colleges and Universities	226	0.78	17	Class Teachers	35	0

3	Ideological and Political Education	222	0.15	18	Student Ideological Education	34	0.24
4	College Students	210	0.09	19	Management	32	0.15
5	Higher Vocational Colleges and Universities	167	0.04	20	Higher Education	30	0.15
6	Counselor	138	0.19	21	Higher Education Counselor	29	0.27
7	Countermeasures	126	0.54	22	Network	28	0.47
8	Students	125	0.58	23	Issues	28	0.13
9	Higher Vocational Students	83	0.41	24	Ideological and political work	23	0.08
10	Education	60	0.22	25	New Media	22	0
11	Student Management	43	0.18	26	Pathway	20	0
12	Ideological Education Work	38	0.04	27	Student Work	19	0.47
13	Curriculum Civics	37	0.08	28	Ideological and Political Education	19	0.06
14	Innovation	37	0.36	29	Education Management	17	0.25
15	Ideological Politics	36	0.08	30	Mental Health	15	0.02

In the keyword co-occurrence knowledge map, keyword centrality is an indicator that measures the importance of nodes within a network. As intermediaries between keywords in the literature, these keywords play a pivotal role. The higher the centrality of a keyword, the greater its influence within the literature. From the perspective of centrality (Table 1), keywords such as "university," "ideological education," "students," and "countermeasures" have higher centrality, indicating that they are more closely linked with other keywords and have a positive impact on the inter-citation relationships between the literature.

3.4 Keyword Cluster Analysis

Building upon the keyword co-occurrence network, cluster analysis can group semantically similar keywords into different modules and assign labels to facilitate understanding of the different categories of student ideological education research. In this analysis, the log-likelihood ratio (LLR) algorithm was used to cluster keywords, grouping those with strong relationships into a single cluster for identifying and analyzing the main research themes. Figure 4 shows the keyword clustering knowledge map. The clustering order ranges from 0 to 6, with smaller numbers indicating more keywords included in the cluster. Each cluster consists of multiple closely related keywords. The cluster modularity value Q is 0.7308, which is significantly higher than 0.7, indicating that the clustering effect is good and that it effectively reveals the current state and development trends of student ideological education research. Additionally, the average silhouette value S is 0.9461, which is significantly higher than 0.9, indicating that the clustering effect is highly reliable.

Furthermore, we can observe that in the field of student ideological education research, a total of 7 clusters of keywords have been generated, each representing a distinct research direction. These 7 clusters are: #0 Education, #1 Campus Culture, #2 Cultivation, #3 Vocational College Students, #4 Professionalization, #5 Issues, and #6 Secondary Vocational Education. The average year of the emergence of these clusters is between 2008 and 2012, indicating that related research began to mature during this period.

Among them, the largest cluster is #0 Education, which includes 18 keywords such as ideological education work, college student ideological education, and management work, and first appeared in 2008. Ideological education aims to help students grasp the concepts of life views and worldviews, as well as related system knowledge. Guided by certain perspectives and beliefs, it helps students form specific life attitudes and ideals in real life. The second largest cluster is #1 Campus Culture, which emerged in 2012 and includes 17 keywords such as team building, vocational college students, educational management, and moral education. Campus culture is ubiquitous in universities and is unique to each institution. It plays a crucial role in students' ideological education. The campus environment serves as a highly influential educational resource that reflects the overall value orientation of a university, allowing both teachers and students to feel their role in the construction of campus culture^[11]. The third cluster is #2 Cultivation, which emerged in 2011 and includes 14 keywords such as scientific development outlook, student work, and student cadres.

3.5 Keyword Burst Analysis

Burst terms represent keywords whose frequency of citation or mention increases sharply over a certain period, providing a direct means to identify current research hotspots in student ideological education. In this study, we used Citespace visualization software to detect burst terms in the field of student ideological education research. We extracted keywords with a high frequency growth rate and displayed their start and end times. This allows us to observe the research hotspots of student ideological education in different time periods and identify burst terms for each period. The specific burst occurrences are shown in this research ^[12].

21 burst terms with the most significant citation increases are displayed. In the map, "Strength" represents the burst strength of a term during a specific period, "Begin" indicates the initial year of the burst, and "End" marks the year the burst ceased. In terms of burst strength, "curriculum-based ideological education" ranks the highest with a burst strength of 20.584, indicating its strong research value in the field of student ideological education. Under the new historical conditions and context, curriculum-based ideological education integrates ideological and political education into

professional courses. This teaching concept and model aim to subtly instill ideological education into students through professional course learning, cultivating their correct worldview, outlook on life, and values^[13]. The term "students" has a burst strength of 16.2868, ranking second, while "ideological education" ranks third with a burst strength of 11.2676.

In terms of burst duration, there is a significant difference between terms. "Ideological political work" has the longest duration, lasting 9 years from 2002 to 2010, and has been a consistent research hotspot in the field of student ideological education during this extended period. This is followed by "university counselors" and "ideological politics," both with a duration of 8 years.

From the perspective of research trends, between 2000 and 2006, the content of student ideological education research mainly focused on "ideological education" and "quality education." From 2007 to 2019, the focus shifted to "college students," "vocational education," and "university counselors." In recent years, the research progress has paid more attention to topics such as the "new era" and "curriculum-based ideological education."

3.6 Keyword Strategic Analysis

The keyword strategic map further evaluates research hotspots and trends in student ideological education. Following existing studies, this paper uses keyword occurrence frequency as the X-axis and keyword centrality as the Y-axis, distributing keywords in the field of student ideological education across four quadrants, each reflecting different development characteristics. The strategic map of keywords in student ideological education research from 2000 to 2024 is shown in Figure 2.

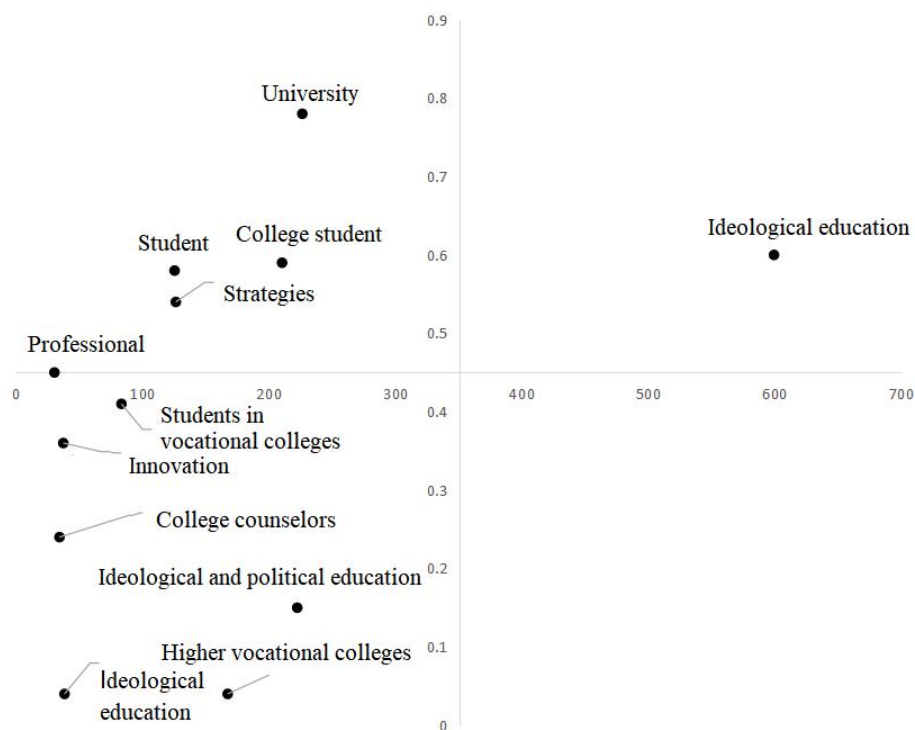


Figure 2. Keyword Strategic Map

First Quadrant: Keywords in this quadrant exhibit high frequency and high centrality, representing the mainstream areas of this research. The hotspot keyword "ideological education" appears in this quadrant, showing a strong connection with other keywords.

Second Quadrant: Keywords in this quadrant exhibit low frequency and high centrality, representing potential mainstream areas of research. These include keywords such as "higher education institutions," "students," and "countermeasures." Although the frequency of keywords in this quadrant is lower and the number of studies is fewer, the high centrality indicates strong connections with other keywords, suggesting that these keywords have the potential to become emerging research hotspots. With the development of international and domestic circumstances, the country and society have raised higher demands for the quality of technical and skilled talents, particularly emphasizing the importance of moral education. Therefore, higher vocational colleges should focus on ideological education, integrating it into various aspects of teaching to promote the comprehensive development of students^[14].

Third Quadrant: Keywords in this quadrant exhibit low frequency and low centrality. Generally, this quadrant contains the highest number of keywords. While keywords in this quadrant may appear less important on the surface, they should not be dismissed entirely. Some keywords, such as "student management," "ideological education work," and "counselors," may potentially become research focuses. University counselors, as key members of both teaching and management teams, play a dual role as teachers and administrators. Their value in student management is highlighted through daily management practices, shaping students' values, guiding student behavior with orderly management methods, and creating an educational atmosphere through daily activities^[15].

Fourth Quadrant: Keywords in this quadrant exhibit high frequency but low centrality. Research topics in this quadrant show a gradual decrease in importance, and no keywords from this paper appear in this quadrant.

4 Conclusion

This study uses CiteSpace visualization software to analyze 2,838 papers on student ideological education published from 2000 to 2024 in the China National Knowledge Infrastructure (CNKI) database. The analysis includes author collaboration networks, keyword co-occurrence, keyword clustering, burst detection, and strategic keyword analysis, with the aim of providing a reference for future research on student ideological education. The following conclusions can be drawn:

From a publication characteristic perspective, the number of publications on student ideological education generally shows an upward trend followed by a decline. Specifically, publications were stable from 2000 to 2006, rapidly increased from 2007 to 2019, and declined from 2020 to 2024. In terms of author collaboration networks, although there are many domestic authors researching student ideological education, collaboration among authors is still insufficient, and deep cooperative networks have yet to be formed.

In terms of research hotspots, the main directions of student ideological education research focus on ideological and political education, educational methods, vocational college students, and university counselors. Frequently occurring keywords include ideological education, higher education institutions, ideological and political education, and college students. In terms of research clusters, student ideological education research is mainly organized around seven clusters, including #0

Education, #1 Campus Culture, and #2 Cultivation. These clusters primarily emerged between 2008 and 2012.

From the burst detection perspective, 21 burst terms appeared in the student ideological education research field. The burst strength of "curriculum-based ideological education," "students," and "ideological education" was notably high, while the terms "ideological political work," "university counselors," and "ideological politics" had longer burst durations.

From the strategic keyword map perspective, most keywords are in the third quadrant of low frequency and low centrality. "Ideological education" appears in the first quadrant, characterized by high frequency and high centrality, while "higher education institutions," "students," and "countermeasures" are found in the second quadrant, characterized by low frequency but high centrality.

In conclusion, the research content in the field of student ideological education is rich and represents a currently popular research area. Future potential research may focus on utilizing digital technology for more detailed analysis of student ideological education and related fields to deepen the research in this area.

Author Contributions

Q.Z completed all the work independently. All authors agree to be accountable for the content of the work.

Funding

This research received no external funding.

Institutional Review Board Statement

Not applicable.

Informed Consent Statement

Not applicable.

Data Availability Statement

The data can be obtained by contacting the corresponding author of this paper.

Conflict of Interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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