

Research on Integrated Labor Education in Primary and Secondary Schools Based on CiteSpace Analysis of CNKI Database

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Abstract: The research uses CiteSpace knowledge visualization analysis tool to conduct an in-depth analysis of 63 academic papers on comprehensive labor education in primary and secondary schools published on the China Knowledge Network (CNKI) from 2016 to 2023. The research results show that in the past eight years, research in this field has mainly focused on core issues such as "integration", "labor education system", "combination of production, learning and research", "compulsory courses", and "overall construction". It is suggested that the integration of labor education in primary and secondary schools should strengthen the construction of goal system, clarify the content requirements, establish a guarantee system, and improve the evaluation system.

Keywords: Primary and Secondary Schools; Labor Education; Integration

1. Introduction

In March 2020, the Central Committee of the Communist Party of China and the State Council issued the "Opinions on Comprehensively Strengthening Labor Education in Primary and Secondary Schools in the New Era" which provided a systematic explanation, overall planning, and coordination of efforts to strengthen labor education in primary and secondary schools in the new era. The opinions emphasize "incorporating labor education throughout the entire process of talent cultivation highlighting the necessity of labor education for adolescent success. [1]

Despite the sustained research interest in labor education in recent years, there has been limited research on integrated labor education, reflecting that labor education has not yet been

consistently implemented in China's educational system. Instead, it is often taught separately in different stages of education, ignoring the continuity of labor education. Current literature mainly focuses on specific measures to promote integrated development, and theoretical research on integrated labor education is still at an exploratory stage. There is insufficient research on the difficulties faced by primary and secondary schools in promoting integrated construction. [2]

Based on the above research background, this article derived a quantitative analysis of the literature on integrated labor education in primary and secondary schools nationwide over the past 8 years (2016-2023) using bibliometrics. Through visualizing the results of knowledge mapping, it systematically explores the research focus trend in this field to provide empirical evidence and insights for future research and practical exploration.

2. Research Methods

2.1 Data Source

The data in this article mainly come from the Database of China National Knowledge Infrastructure (CNKI). In CNKI, select the "Advanced Search" function. Use "Integrated Labor Education in Primary and Secondary Schools" as the search term in journals to search for documents from 2016 to 2023, excluding conference notices, subscription notices, and unrelated articles. Finally, 63 valid documents were determined. According to the reading format requirements of CiteSpace files, the documents were exported by year to form a sample database.

2.2 Methods and Tools

This article is analyzed using the knowledge visualization software CiteSpace. This software adopts the technology of time-varying dynamic and multivariate citation visualization analysis. Therefore, the development of a knowledge domain can be concentrated on one network map of citations, and the literatures related to the knowledge basis and co-citation clusters can be automatically identified. Therefore, CiteSpace is currently one of the widely used tools for mapping knowledge graphs.

3. Research Results

3.1 Distribution of Published Documents with Time

This article analyzes the relevant literature from 2019 to 2023, and finds that the number of documents presents a wave-like trend of

first increasing, then decreasing, and then increasing again. Specifically, since 2020, the number of documents has begun to grow rapidly, reaching its peak in 2021, after temporarily slowing down, and peaking again in 2022 (Figure 1). Documents in 2023 were only counted until March of that year, so there is only one document.

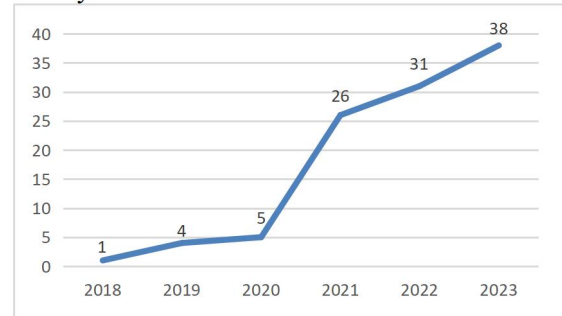


Figure 1. Variation of the Number of Published Documents Over Time

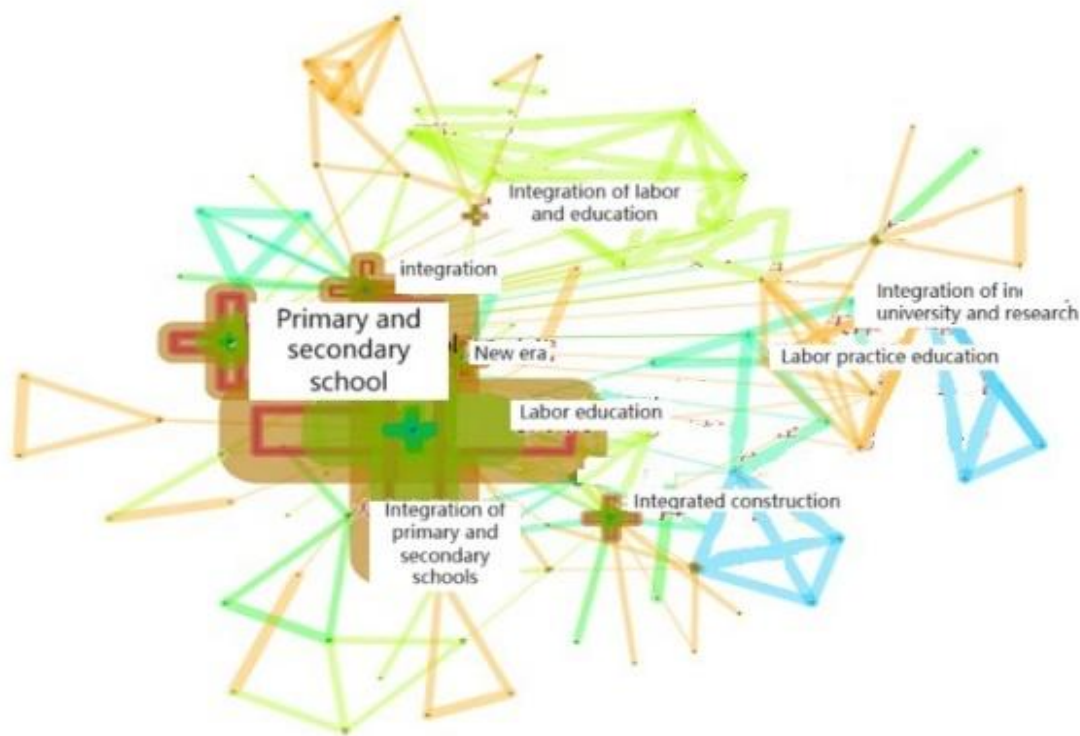


Figure 2: Keyword Co-Occurrence Network Diagram

3.2 Research Hotspots

Keywords are the embodiment of a literature's theme. High-frequency keywords are usually used to identify research hotspots in a certain field. The analysis time slice selected for this study is one year, and the analysis method selected is "Top N=50". The network reduction

algorithm reduces each slice network, generating a keyword co-appearance network (Figure 2). Each node is represented by a symbol, representing a keyword. The larger the symbol, the higher the frequency of the keyword occurrence. The higher the concentration of the symbol indicates the higher frequency of the keyword occurrence in

that year. The more connections there are, the higher the relevance between keywords. the more connections represent greater mutual connectivity between keywords [3]. It is evident that hotspot keywords include "labor education" "primary and secondary schools" "integrated construction" "integrated teachers" "training models" "education systems"

"combination of industry and academia" etc [4]. For a more detailed understanding of research hotspots, as shown in Table 1, keywords with frequencies greater than or equal to four are selected as high-frequency keywords, and the top 11 high-frequency keywords are extracted according to frequency.

Table 1: Frequency of High Frequency Keywords and Ranking of Keywords

Serial number	Top 11 for high frequency keyword	frequency	Serial number	Top 11 in high school keyword	centrality
1	Labor education	84	1	Primary and secondary school	0.67
2	Primary and secondary school	35	2	Labor education	0.48
3	integration	25	3	New era	0.32
4	New era	18	4	integration	0.29
5	Integrated construction	16	5	Integrated construction	0.24
6	Integration of labor and education	7	6	Education system	0.19
7	Labor course	6	7	Practical exploration	0.19
8	Mechanism innovation	6	8	Integration of labor and education	0.18
9	College student	5	9	Primary and secondary school	0.14
10	Primary and secondary school	4	10	Content of labor education	0.13
11	Higher vocational college	4	11	Integration of primary and secondary schools	0.11

3.3 Research Fields

Keyword clustering analysis is a co-occurrence analysis that utilizes statistical clustering methods to simplify the process of co-occurrence network relationships into a relatively small number of clusters[5]. This article selects the Log-likelihood ratio (LIR) algorithm to automatically identify each cluster, as shown in Figure 3, forming a knowledge graph with 150 nodes, 244 connections, and 8 clusters.

(1) Cluster #0 "Integration" is the largest cluster, including keywords such as "Education and Training", "Labour Education Norms", "Innovation of Mechanism". In this category, the path of mechanism innovation cultivation and innovative Labour education reform is discussed, forming a special Chinese Labour education model. [6]

(2) Cluster #1 includes keywords such as "Five Education Integration" and "Innovation of Mechanism". This category mainly focuses on the integration of Labour education teaching in primary and secondary schools.

(3) Cluster #2 includes keywords such as "Integration of Industry and Education" and "Comprehensive Evaluation System". This category mainly focuses on the discussion of the components of Labour education system construction, practical requirements and implementation methods, requiring cooperation from schools, families, and society. [7]

(4) Cluster #3 "Integration of Industry, Learning and Research" includes keywords such as "Labour Practice Education" and "Labour Skills". This category mainly focuses on the combination of Labour education in Tianjin universities with industry and learning research, discussing the integration of university-level Labour and professional fields in the combination of industry, learning, and research to implement Labour values. [8]

(5) Cluster #4 "Compulsory Courses" includes keywords such as "Educational Context". It is necessary to promote the integration construction of primary and secondary school Labour education in aspects such as platform construction, system construction, educational resource construction, Labour culture

propaganda position construction, and Labour education research. [9]

(6) Cluster #5 "Integration Construction" includes keywords such as "Regional Characteristics" and "Education Integration". It provides theoretical support and practical guarantees for the full play of Labour education and the improvement of quality. [10]

(7) Cluster #6 focuses on the implementation of work-based education in practical teaching, exploring new ways of work in educational

teaching measures such as organizing symposiums, advocating writing practice, conducting comprehensive learning, etc.

(8) Cluster #7 "Integration of Primary and Secondary Schools" includes keywords such as "Big Ideas". It is an inherent need to improve the university's Labour education system and an action path to promote the integration construction of primary and secondary school Labour education. It guides students to grow healthily through thinking and practice.

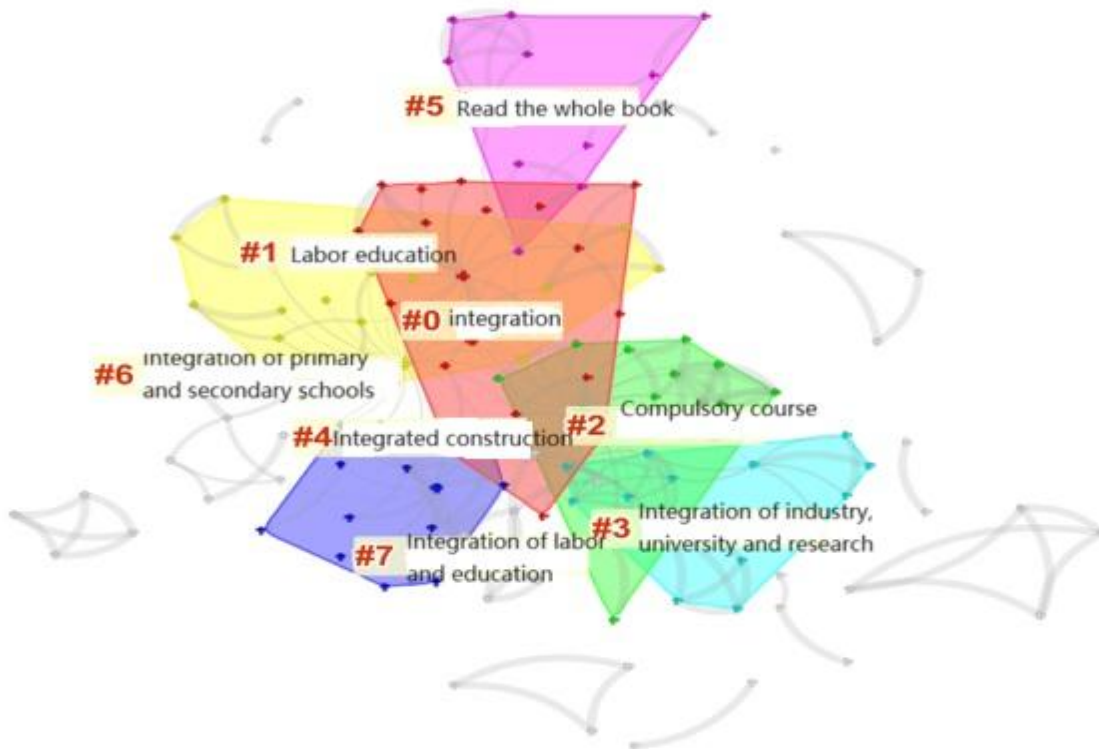


Figure 3: Keyword Clustering Network Diagram

Top 5 Keywords with the Strongest Citation Bursts

Keywords	Year	Strength	Begin	End	2016 - 2023
机制创新	2016	1.9173	2016	2020	
新时代	2016	0.452	2016	2018	
实践探索	2016	1.1165	2018	2019	
劳动教育课程	2016	0.6456	2020	2021	
大中小学一体化	2016	1.3006	2020	2021	

Figure 4: Keyword Prominence rate

3.4 Research Trends

Burst keywords are words that appear more frequently or are more commonly used in a specific time period, which can help identify the frontiers of research fields. Emerging keywords refer to words that are used more frequently and more frequently in a given time period, and can be used to determine the

boundaries of research fields. Figure 4 shows the top 5 burst keywords from 2016 to 2021. the burst keyword from 2016 to 2018 was "New Era"[11]; the burst keyword from 2016 to 2020 was "Innovation"; the burst keyword from 2018 to 2019 was "Practical Exploration"; and the burst keywords from 2020 to 2021 were "Labor Education Curriculum" and "Integration of Primary and Secondary Schools". Based on the clustering map, the trend chart of leading-edge keywords in each time segment is plotted, as shown in Figure 5. "Innovation" and other keywords connect with several small nodes within the time zone and are the foundation and support of the entire time zone. the following analyzes the four stages from 2000 to 2023: New Era stage

(2000-2017), focusing on cross-school labor education; preliminary development stage (2017-2018); upsurge stage (2018-2020); prosperity stage (2020-2023). In this stage,

attention is paid to keywords such as "Labor Curriculum" and other keywords are focused on.

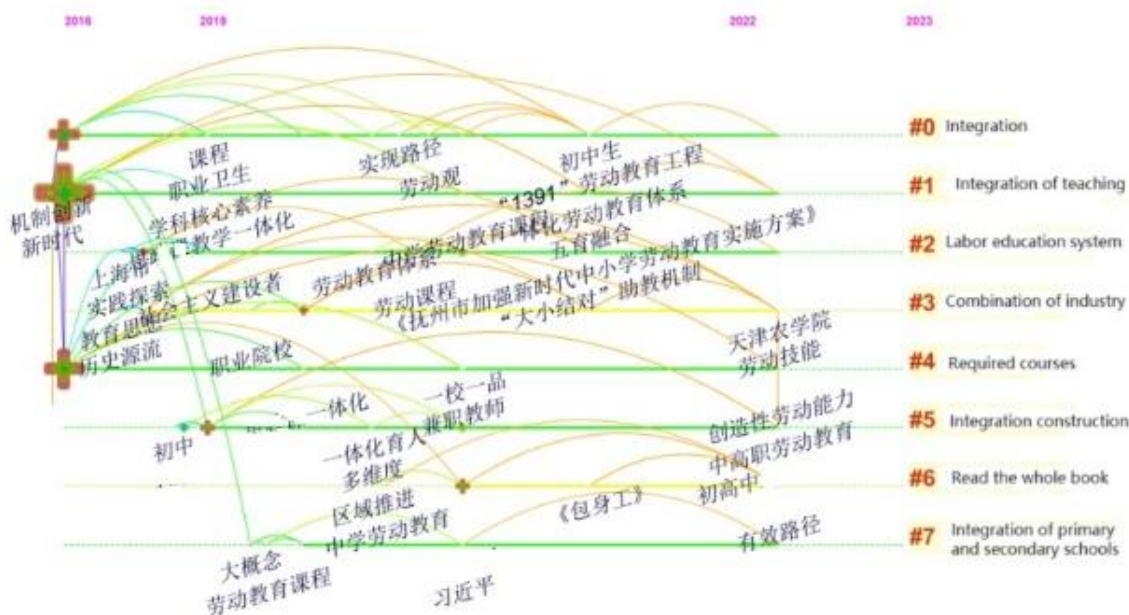


Figure 5: Keyword Timing Map

4. Suggestions and Prospects

4.1 Strengthen the Establishment of an Integrated Goal System for Primary and Secondary School Labor Education.

Establishing an integrated goal system for primary and secondary school labor education is conducive to coherent labor education training programs to form an integrated labor education system that is in line with students' psychological development characteristics, gradually promoting the process of integrating primary and secondary school labor education.

4.2 Define the Content Requirements for Integrating Primary and Secondary School Labor Education

(1) Emphasize the continuity of content. Combining with the characteristics of primary and secondary school students' physical and mental development, designing labor education courses and activities according to their needs, which not only meets the needs of different age children's physical and mental development but also has continuity. This is conducive to building a reasonable, logical,

and profound integrated curriculum system for primary and secondary school labor education. (2) Emphasize the modernity of content. It is necessary to highlight the characteristics of the times in labor education for primary and secondary schools in the new era, adhere to Marxist labor theory leadership, and grow out labor education curriculum content that suits contemporary Chinese primary and secondary school students, bringing new vitality to labor education.

4.3 Innovate Integrated Methods for Primary and Secondary School Labor Education

The integration of teaching methods for primary and secondary schools' labor education in the new era needs innovation. It transforms from traditional teaching methods to student-centered learning methods, innovating teaching methods for teachers and learning methods for students on the basis of respecting students' learning subject status, truly achieving student-centered. Enhancing teachers' competency in labor education is a significant contribution to world labor education from Chinese teachers.

4.4 Perfect the Evaluation System for Integrating Primary and Secondary School Labor Education

At present, labor education is regarded as a form of education that passes inspection in public opinion polls, so it is necessary to improve the evaluation system for integrating primary and secondary school labor education. Establish objective standards for evaluating labor results, adopt fair and equitable evaluation methods, and implement a comprehensive evaluation system. Establish a diversified labor education evaluation value viewpoint, fundamentally changing people's misunderstanding of labor education. Through establishing a comprehensive labor education evaluation system, change public attitudes towards labor education, so that primary school students will love labor, understand how to work hard, know how to work, really experience hardships through hard work themselves.

4.5 Set up an Integrated Safeguard System for Primary and Secondary School Labor Education.

Enhance teachers' internal motivation for major labor education work—strengthening the consistency of direction between home, society, and school in labor education content--and adhere to Unity the time consistency of home, society, and school in labor education content can be displayed to achieve effective labor education.

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