The Knowledge Graph of Chinese Cadre Education and Training Research--Based on the Bibliometric Analysis of CSSCI Sources from 2001 to 2020

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Abstract. Cadre education and training is a leading, basic, and strategic project for the construction of the cadre team, providing strong leadership and cadre team guarantee for party building and national development in all periods. In the past 20 years, fruitful results have been achieved in research in related fields of education and training of Chinese cadre. This paper analyses 308 CSSCI papers with the help of Citespace software and found that the existing research focuses on three aspects: the history of cadre education, the improvement of the effect of cadre education and training, and the strategy of cadre education and training. It is found that the correlation between the research topics is insufficient, the research results are relatively independent, and the quantitative analysis results are insufficient. It is concluded that research on the theory of cadre education and training, research on policies of cadre education and training, and research on the construction of the cadre education and training system with Chinese characteristics in the new era should be the focus of the next cadre education and training research.

Keywords: China cadre education and training, bibliometric analysis.

1. Introduction

Emphasizing the education and training of cadres is the historical tradition of the Communist Party of China which has continued and become increasingly institutionalized and standardized. At present, Chinese academic circles have a wealth of relevant research on the theme of cadre education and training. Through searching in the CNKI database, more than 7,000 documents on cadre education and training have been found so far with complex and diverse research topics involving many aspects such as the content of the education and training methods of the cadres, party building and education. Due to the characteristics of cadre education and training, the existing research results are mostly obtained through qualitative research. On the whole, although there have been some high-quality research results in cadre education and training, the existing research is difficult to match its continuous development hence the important to strengthen the research on cadre education and training. This study uses the literature of
cadre education and training in 2000-2020 CSSCI (Chinese Social Sciences Citation Index, used to retrieve the Chinese social sciences papers and literature citations) as a sample and visualizes it into a knowledge graph to display the status quo of Chinese cadre education and training and development trend to provide academic reference for cadre education and training research and practice.

2. Data sources
This research uses CNKI as the literature data search source. Enter the advanced search, type "cadre education" or include "cadre training" in the subject, select "CSSCI" for the "source category", select "2001-2020" for the time, and select "precise" for the search criteria, the retrieval time is July 13, 2020, and 688 retrieval records were obtained. Excluding non-research documents such as conference newsletters, training trends, introductions of training institutions, news and propaganda of training projects, publication and distribution of training materials, and documents not related to the topic of "cadre education" or "cadre training", 308 valid documents were obtained. The information includes title, author, institution, abstract, keywords, etc., and it is used as the final sample of this research.

3. Research method
Bibliometrics is a quantitative analysis method based on mathematics and statistics. So far, bibliometrics has been widely used in library, information science, sociology, forecasting, management of science and technology and other fields, and has formed various analysis methods such as co-word analysis, co-author analysis and citation analysis [1]. In this study, CiteSpace v.5.7.R1 was used to draw a scientific knowledge graph of Chinese cadre education and training research in the past 20 years. Visual analysis has been realized through three knowledge graphs of clustering, time series and time zone in the software. With illustrating the number of nodes, the thickness of the connection between the nodes, the size of the node circles and the color difference, this paper analyzes the co-occurrence frequency of the node and citation, etc., to explore the basic situation, research progress and cutting-edge trends of cadre education and training research. CiteSpace is a visualization software developed by Professor Chen Chaomei from Drexel University in the United States. It is currently one of the most widely used scientific knowledge graph drawing tools. It can convert a large amount of literature data into a visual knowledge graph, thereby visually presenting the hidden laws and undetectable phenomena in the data. As a graph showing the development and structural relationship of scientific knowledge in a certain field, the knowledge graph can be visual and serializable and can expose many hidden complex relationships between knowledge units or knowledge groups, such as the network, structure, interaction, intersection, evolution or derivation, and these complex relationships are gestating the production of new knowledge [2].

4. Bibliometric analysis

4.1. The analysis of the annual paper volume and proportion of cadre education and training

![Figure 1](image_url)  
*Figure 1. The number and proportion of cadre education and training research published in the past years (document source category: "CSSCI")*
It can be seen from the number and proportion of cadre education and training research published in the past years (see Figure 1): (1) Except for 2002, 2005, and 2020 when the number of published papers accounted for less than 2% of the total, the percentages of publishing in the remaining years did not differ greatly with a range between 2.50% and 9.09%. Among them, the data for the whole year is not included in 2020, so the ratio is low. (2) Since 2001, the number of published papers has shown a wave-like increase, and two relative peak periods have been formed, namely 2008-2013 and 2017-2019; (3) The number of articles published in 2013 reached a peak of 9.09%.

It can be seen from Figure 1 that after the previous National Congresses of CPC, as the Party Central Committee plans and deploys cadre education and training as an important work to serve the development of the party and the country, the academic circles have paid more attention to cadre education research year by year which brings a continuous growth of the research results. After the report of the 17th National Congress in 2007 proposing to "continue to strengthen the party's governing ability and focus on building high-quality leadership", "continue to train cadres on a large scale, give full play to the role of party schools, administrative schools, and cadre schools, and greatly improve the quality of cadres", attention to cadre education has greatly increased, hence the number of articles on cadre education published in CSSCI source journals has risen sharply, reaching the first peak of 7.79% in 2008. The report of the 18th National Congress in 2012 made a strategic deployment for "building a high-quality ruling backbone" while the 2013-2017 National Cadre Education and Training Plan in 2013 put forward “to deepen the reform of cadre education and training and comprehensively improve the quality of cadre education and training, the number of published papers reached another peak in 2013.

The report of the 19th National Congress in 2017 stated that "our party must be both politically firm and competent ", and systematically discussed and comprehensively deployed "building a team of high-quality professional cadres". After that, the enthusiasm of academic circles for cadre education research was further stimulated.

4.2. The analysis of keywords of cadre education and training research

![Knowledge graph of keywords in cadre education and training research](image)

*Figure 2. Knowledge graph of keywords in cadre education and training research*
Keywords are essential in an article which generally reveal the core point. Using CiteSpace for statistical analysis of keywords helps us grasp research hot topics. Using 308 sample documents as the source data, the time slice is set to 1, the node selects keyword, g-index (k=25), the path selects the MST algorithm, and runs the CiteSpace 5.7R1 software to obtain the keyword co-occurrence knowledge graph (see Figure 2), it is found that Netword: N = 403, E = 635, that is, there are connections between 403 keyword nodes and 635 keywords.

In order to display high-frequency keywords more intuitively, this article lists 18 keywords with keyword frequency> 5 derived from the graph, and lists their centrality (see Table 1). In addition, a cluster analysis was performed on the keywords. The clustering results showed that Modularity Q=0.81 and Mean Silhouette=0.66, which achieved acceptable clustering effects (see Figure 3).

Table 1. Keyword cluster analysis in the research of cadre education and training

| Keyword                                      | Frequency | Centrality |
|----------------------------------------------|-----------|------------|
| Cadre education                              | 34        | 0.29       |
| Cadre education and training                 | 30        | 0.37       |
| Cadre training                               | 25        | 0.29       |
| Communist Party of China                     | 18        | 0.14       |
| Leading cadres                               | 14        | 0.16       |
| Training                                     | 13        | 0.09       |
| Cadre education and training work            | 11        | 0.09       |
| Education and training                       | 10        | 0.13       |
| Party spirit education                       | 8         | 0.09       |
| Yan'an Period                                | 8         | 0.03       |
| Party cadres                                 | 7         | 0.04       |
| Party School                                 | 6         | 0.06       |
| New era                                      | 6         | 0.06       |
| Cadres                                       | 6         | 0.05       |
| Xi Jinping                                   | 5         | 0.04       |
| Modern distance education for rural cadres    | 5         | 0.05       |
| Training model                               | 5         | 0.03       |
| Effectiveness                                | 5         | 0.06       |
Figure 3. Key words for cadre education and training research and centrality (frequency ≥ 5)

Through comprehensive analysis of Figure 2, Figure 3 and Table 2, it is found that the research focuses on the following topics:(1) The history of cadre education. The theme centered on "the history of cadre education". It mainly includes three high-frequency keywords such as "cadre education", "the Communist Party of China", and "Yan'an period", and some hot keywords derived therefrom such as "education and training", "Shaanxi-Gansu-Ningxia border area", "democratic revolution period", "party school" "historical experience" and so on. The research content mainly focuses on three aspects: first, to sort out and summarize the content and laws of the Chinese cadre training system [3]. Second, research is focused on the theory and practice of party cadre education in various periods such as Yan'an period [4], the War of Resistance Against Japan period [5] and democratic revolution period [6]. Third, to study the main content, characteristics and contemporary significance of cadre education thoughts in various periods while research on thoughts of Mao Zedong [7], Deng Xiaoping [8], Jiang Zemin [9], Hu Jintao [10] and Xi Jinping [11] becomes hot topics. (2) The effect of cadre education and training has been improved. It mainly includes three high-frequency keywords include "cadre education and training", "leading cadres" and "party spirit education", as well as some hot keywords derived from them, such as "party cadres", "new era", "effectiveness", and "civil servant training" "reform and innovation" and so on. Firstly, the overall effect has been improved. The analysis and discussion are conducted to comprehensively improve the effectiveness of cadre education and training [12]. Secondly, to discuss how to improve the training effect in a specific aspect. Topics include the educational environment, such as the impact of internationalization [13]; educational concepts, such as the Ingangs spirit [14]; the design of educational content, such as demand-oriented setting of education content[15]; build education culture [16], integrate information literacy education, moral education, Chinese culture education, and political science education, legal education and improvement of evidence-based governance capabilities into cadre education, etc.; education model, such as the cadre education model of “provincial overall planning and separate training” [17] the construction of educational institutions, such as database construction in cadre education, information construction[18], cloud computing technology application, and training base construction[19]; education evaluation, such as quality supervision of cadre education[20]. Thirdly, to improve the effect of cadre education and training through reform and
innovation in the new era by exploring new training methods [21]. Fourthly, to strengthen the faith education [22], party spirit education [23], and belief education for party cadres [24]. (3) Cadre education and training strategies. Discuss the methods, content and effects of education and training of certain groups of cadres according to their characteristics. The training targets come from different backgrounds including young and middle-aged reserve cadres, cadres in ethnic areas, grassroots cadres, rural cadres, cadres of institutions, and enterprise cadres; and cadres from certain specific fields, such as tax, trade union, procuratorate organ, and education system.

4.3. The analysis on the development and evolution of cadre education and training research

![Figure 4. Time zone chart of cadre education and training research](image)

Through the time zone chart of keyword co-occurrence analysis (Figure 4), we can further analyze the corresponding cadre education research topics and development trends in different time periods. It can be found that the attention of CSSCI source journals on cadre education can be roughly divided into three stages: (1) 2000-2006. At this stage, scholars focused on the perspective of cadre team building and believed that cadre education and training should change education doctrines, update education concepts, and improve the effectiveness of cadre education. It is worth noting that party school, party school education, party school correspondence education and education reform have also attracted the attention of the academic community. (2) 2007-2012. At this stage, scholars began to comprehensively strengthen research on cadre education from the perspective of the Chinese Communist Party’s party spirit education, party building, and building a party that keeps learning. In addition, scientific development, cadre education in the Shaanxi-Gansu-Ningxia border region, research on cadre education thoughts in various historical stages, as well as training models and training quality have also attracted the attention of scholars. (3) 2012-2020. At this stage, General Secretary Xi Jinping attached great importance to the issue of cadre education, and put forward a series of new ideas, viewpoints and requirements which further aroused the academic circles' attention. The academic circles not only study the issue of cadre education from the perspective of party building and national development strategy in
the new era, but also from the perspective of the nature of cadre education and the perspective of cadres themselves.

5. Conclusion
Through sorting out and analyzing the relevant literature on cadre education and training research in Chinese academic circles from 2000 to 2020, the following conclusions are drawn: The study of special topics on cadre education and training has gradually deepened. At present, the themes of research on Chinese cadre education and training mainly focus on three aspects: the history of cadre education, training effects, and training strategies. Existing research no longer focuses on general descriptions of the current situation, but shifts to specific issues such as training effects, training strategies, etc. which gradually promote the in-depth development of Chinese cadre education and training research.

The cadre education and training research policy is highly oriented. From the keyword co-occurrence and cluster analysis, it can be found that the research on this topic has shown a very obvious policy orientation, and a good interactive relationship has been formed between research and policy. Every major document issued by the national ministries and commissions will stimulate the emergence of corresponding cadre education and training research topics, and reflective research that arise in practice will prompt the introduction of more complete policies.

The research methods and perspectives of cadre education and training need to be expanded. At present, the research on cadre education and training is still based on normative research. In order to improve the scientific and effectiveness of the research, future research should use a combination of normative research and empirical research, qualitative research and quantitative research. Judging from the current research trends, themes such as theoretical research on cadre education and training, policy research on cadre education and training, and the construction of a cadre education and training system with Chinese characteristics in the new era may become hot topics in cadre education and training research in the future.

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