

# Bibliometric Analysis of Research Literature on Ideological and Political Education by Curriculum based on SATI

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**Abstract.** The ideology and politics education by curriculum is a hot spot of the research and reform of higher education. Based on the core literature collected from the database of CNKI, this paper analyses the time distribution, journal sources, research institutions, research authors and keywords by SATI and other software. The data shows that the study of ideology and politics education by curriculum is relatively focused on three aspects: connotation and value orientation, conditions and basic requirements, exploration and practice. In addition, there are some problems in this study, such as the core area is not obvious, the imbalance is prominent, and the level is unbalanced.

**Keywords:** SATI, Ideological and Political Education by Curriculum, Bibliometric Analysis

## 1. Introduction

The ideological and political education by curriculum (Hereinafter referred to as IPEC) is an important way to improve the quality of personnel training and fulfill the fundamental task of moral education. National University Ideological and Political Work Conference in 2016 proposed that curriculums should keep the same direction with ideological and political theory curriculums and form a synergistic effect [1]. Since then, IPEC has become an important direction of teaching reform in higher education, and the theoretical study and the results of practical exploration are growing. Strengthening the bibliometric statistics and visual analysis of the results will help to grasp the status, characteristics and hot spots in this study, and promote the better development of research in this field.

## 2. Research Design

### 2.1. Data Source

The data in this paper are from CNKI database. By November 2020, 365 effective documents were retrieved from Core Journal of Peking University, CSSCI and CSCD, with "Ideological and Political Education by Curriculum" as "Title" or "Keyword" and unlimited time.

### 2.2. Research Tools and Methods



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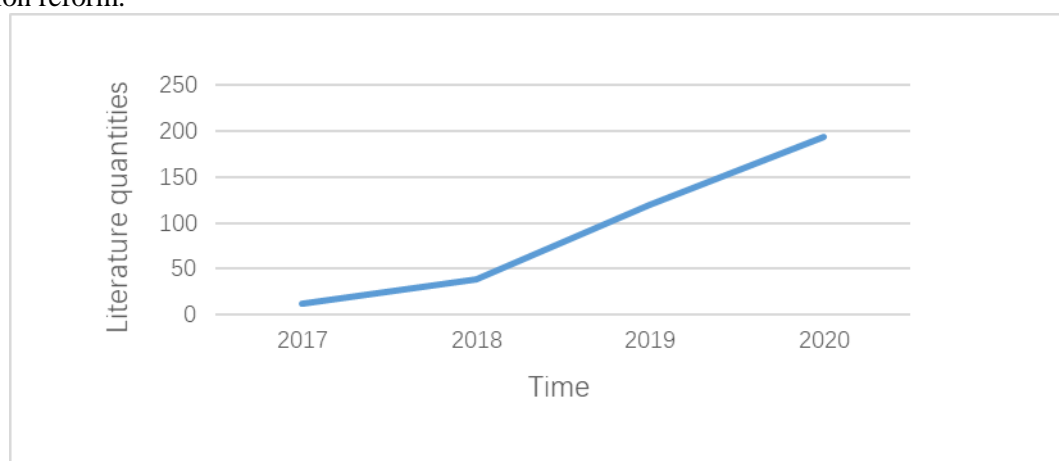
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In this paper, SATI 3.2, Ucinet 6, NetDraw and CNKI were used for statistical and visual analysis. SATI (Statistical Analysis Toolkit for Informetrics) is bibliographic information analysis software that developed using C# based on Microsoft. NET platform. It has four functions, such as title format conversion, field information extraction, frequency statistics of entries and knowledge matrix construction, to assist knowledge map construction and visual analysis [2]. We need to derive the EndNote information of literatures in CNKI, and count frequency and transform it into co-occurrence Similarity Matrix by SATI, and generate network knowledge map by Ucinet and Netdraw [3]. Finally, we can draw conclusions from the observation and analysis of the visualized data.

### 3. Data Statistics and Visual Analysis

#### 3.1. Time Distribution Analysis

Figure 1 is the time distribution map of literature quantities, that counted by year of publication. There are 12 articles in 2017, 39 articles in 2018, 120 articles in 2019 and 194 articles in 2020, which is on a rising trend, most significantly in 2019. Since 2016, a series of conferences and papers have driven the development of this study. It can be seen that the study of IPEC is closely related to the reform of higher education, which is the reflection of theoretical innovation and practical exploration of higher education reform.



**Figure 1.** The time distribution map of literature quantities

#### 3.2. Journal Sources Analysis

The articles in this field were published in 99 journals, according to data from journal sources. Among them, as the largest published journal, *China Higher Education* published 38 articles, accounting for 10. 4% of all journals. There were 50 journals with 1 article, accounting for 50. 5% of all journals; There were 30 journals with 2-4 articles, accounting for 30. 3% of all journals.

According to Egghe's core area quantity calculation method [4], we can calculate the core area journals of the study on IPEC. The formula is:

$$P = 2 \ln(e^E \times Y) \quad (1)$$

P is the articles number of core areas, and E is Euler-Mascheroni constant ( $E=0.5772$ ), Y is the articles number of the largest published journal. According to calculation,  $P \approx 8.42$ . It means that the journals with more than 8 articles are the core journals in this field. The journals in ideological, political and educational field have become the main sources, which reflects the ideological and political educational orientation of this study and is closely related to the exploration of higher education reform.



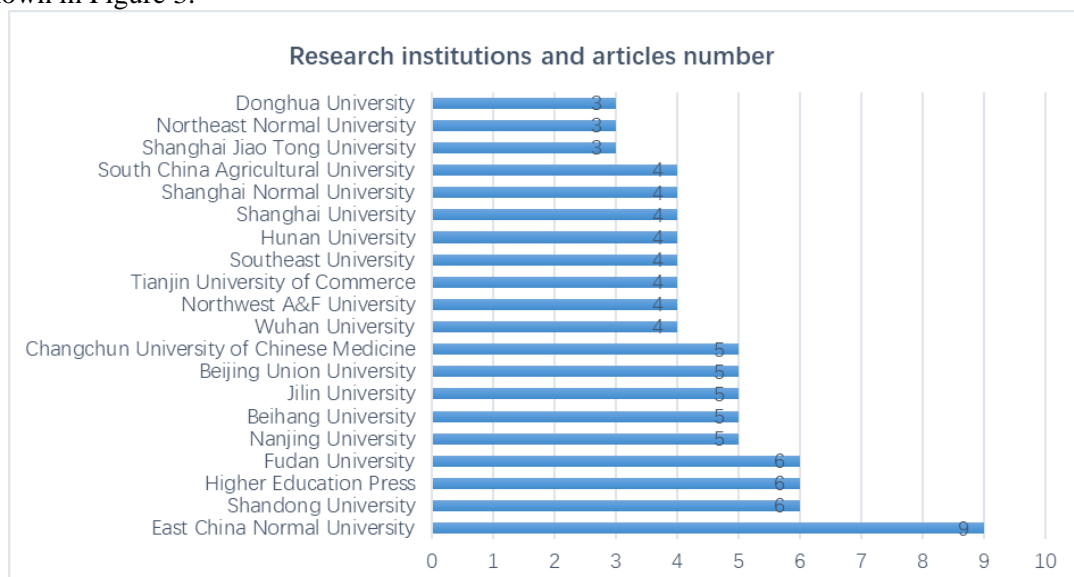
**Figure 2.** The articles number of the core journals

### 3.3. Research Institutions Analysis

We can use the Price Law for the statistics of high-impact research institutions [5]:

$$M \approx 0.749\sqrt{N_{max}} \quad (2)$$

M represents the high frequency threshold, and  $N_{max}$  is the articles number of the most productive institutions (the number is 9 of East China Normal University), and finally  $M \approx 2.2$ . Then, the research institutions with more than 3 articles were the core institutions in this field, and the ranking was shown in Figure 3.



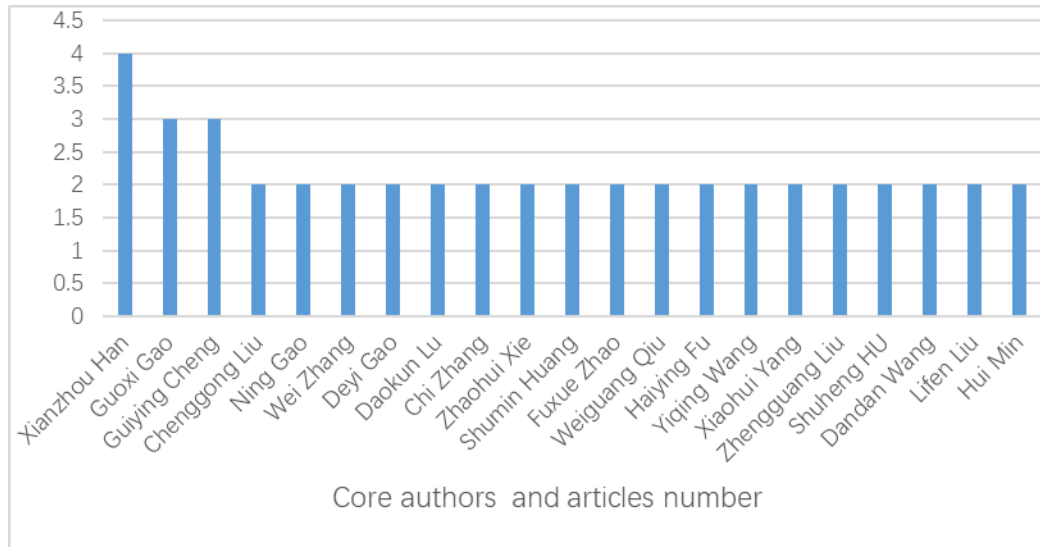
**Figure 3.** The articles number of the core research institutions

The data shows that the research force of IPEC is mainly concentrated on top universities in Shanghai, Shandong, Beijing, Jiangsu, Jilin, Hubei, Tianjin, Hunan and other places, and its comprehensive level is relatively high, and they are all in the areas where the higher education is more developed and the educational reform is pushed forward more deeply. Especially, as the forerunner and reformer of ideological and political education exploration, Shanghai has become the focus area of this field.

### 3.4. Research Authors Analysis

Through the frequency statistics and visual analysis of the authors, we can find the core research groups and their status in this field. By running SATI and extracting fields with "Authors" as the

subject, a total of 726 authors and 339 first authors (or single authors) can be counted. According to the Price Law,  $M \approx 1.4$ , which means that authors with more than 2 articles are the core authors.



**Figure 4.** The articles number of the core authors

After extracting the fields of “Authors”, we use SATI to count word frequency to generate the co-occurrence matrix and keep as “EXCEL”. Through Ucinet and Netdraw, network knowledge map of the core authors is produced.



**Figure 5.** Network knowledge map of the core authors

The data shows that the number of the core authors in this study is low, accounting for only 2.89% of all authors, and there is little cooperation among authors. Although there are several author groups, but the number of their articles is still small, and a solid core research group has not yet been formed.

#### 4. High Frequency Words and Research Hot Spots Analysis

Through the statistics of high frequency words, we can see the hot spots and trends of this field. 708 Keywords were captured from field extraction and frequency statistics with "Keywords" as the option in SATI, and among which 582 Keywords only appeared once. According to the law of high and low frequency words:

$$T = \frac{-1 + \sqrt{1 + 8I_1}}{2} \tag{3}$$

T is the number of high frequency keywords and  $I_1$  is the number of keywords with Frequency 1[6]. And  $T=33$ , it means that words from 1 to 33 are high frequency keywords. Then we can use Ucinet to make keywords co-occurrence matrix, and obtain network knowledge map of co-occurrence based on Centrality Measures in NetDraw, as shown in Figure 6. The size of nodes in the figure reflects the frequency of keywords, while the lines between nodes show the relationship between keywords.

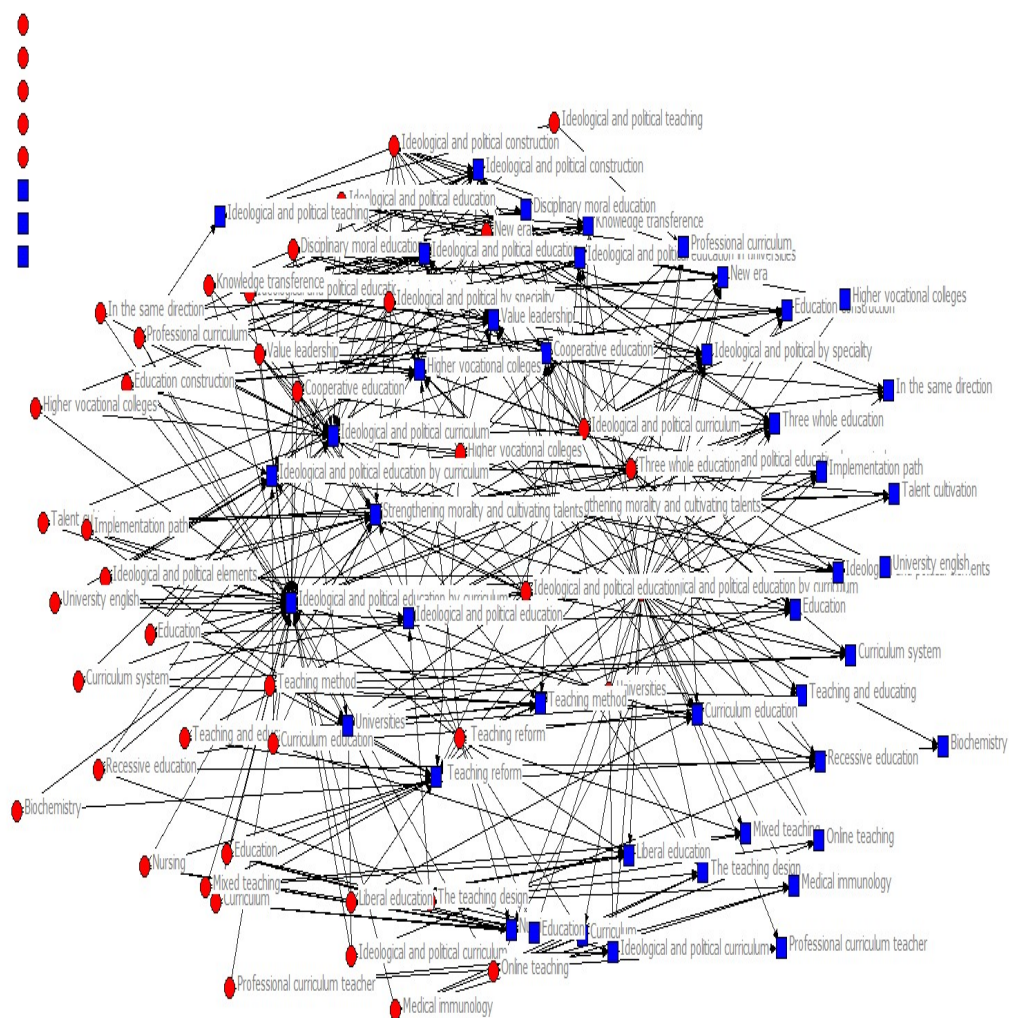


Figure 6. Network knowledge map of keywords

This map shows that, there are a lot of words appear frequently and are closely related to other keywords in this study, such as "Strengthening morality and cultivating talents", "Ideological and

political curriculum", "Ideological and political education", "Teaching reform", "Cooperative education", "Value leadership", "Education" and so on. It can outline the core areas and hot issues in this study.

#### 4.1. Connotation and Value Orientation

IPEC is not an actual curriculum. It requires that ideological and political education should be integrated into all aspects of curriculum teaching and reform, and it emphasizes that all kinds of curriculums should be consistent with the direction of ideological and political education. As an educational concept, it requires to improve the educational and ideological quality of all curriculums and emphasizes that the primary goal of curriculum teaching is to develop correct outlook on life and values. Therefore, some words appear frequently and are closely related to it, such as "Strengthening morality and cultivating talents", "Ideological and political education", "Value leadership" and so on.

#### 4.2. Conditions and Basic Requirements

Realizing the ideological and political education of curriculums effectively needs to construct various support systems. IPEC emphasizes the ideological and political functions and the educating attributes of curriculums, and also puts forward higher requirements for educators and educational methods. The words such as "Three whole education" and "Recessive education" put forward the prerequisite and basic requirements for making it work from the thinking concept, mechanism system, teacher ability and other aspects.

#### 4.3. Exploration and Practice

Although the "Professional curriculum", "Curriculum", "Curriculum system", "University English", "Biochemistry" and other words are seldom used, they comprehensively reflect the extensive, rich and in-depth practice of this field. Curriculum construction is not only the foundation of talent cultivation in universities, but also the final channel of implementing IPEC. Under the requirements of promoting teaching reform of higher education, improving the quality of talent cultivation, and implementing curriculum education, the reform of different majors and curriculums in curriculum system, teaching concept, teaching design and teaching method has a great reference significance and reference value, and its practical effect also directly affects the path choice of IPEC.

### 5. Conclusion

This paper analyzes the basic situation of IPEC by means of bibliometrics and data statistics. Since 2016, the research results in this field have been gradually rich and extensive, showing an increasing trend. It has formed a core publication journal represented by China Higher Education and a core research area dominated by Shanghai, Shandong, Beijing and other places. Its concept, connotation, theoretical construction and practical framework are further clarified and integrated, which has directional and guiding significance for the reform and development of higher education.

But there are also many shortcomings. First of all, the core area of the research is not obvious, and a stable core group of authors has not yet emerged. There is little communication between research institutions and authors, so it is difficult to give full play to the advantages of the group gathering. Secondly, the level of the results and the geographical distribution of the research are more uneven, and the disconnection of keywords indicates the dispersion of the studies. Thirdly, the collation and analysis of research results need to be strengthened, especially the quantitative analysis is still insufficient, which affects the summary and judgment of research trends.

The next stage, this field should be strengthened overall summary and analysis of results, based on a specific curriculum practice. At the same time, we should improve team building and platform building, expand the communication and cooperation among authors and institutions, promote the formation, consolidation and expansion of core research groups, and promote the expansion and deepening of research in this field.

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