

# *Research Hotspots and Trends of Case Teaching Method in Major Courses of Finance: A Bibliometric Overview*

Yuzan Dai<sup>1,2,\*</sup>, Shiyao Wu<sup>1</sup>

<sup>1</sup>*School of Economics and Management, Hefei University, Hefei, Anhui, China*

<sup>2</sup>*Key Lab of Financial Big Data, Hefei University, Hefei, Anhui, China*

*\*Corresponding author*

**Keywords:** Case teaching method, finance, CiteSpace, research hotspot

**Abstract:** The courses of finance have both theoretical depth and practical breadth. Case teaching method applies the theoretical knowledge of finance discipline to practice, which is an effective teaching method to realize the combination of theory and practice, and is conducive to cultivating innovative financial talents. This paper uses CiteSpace as a bibliometric method to conduct a descriptive statistical analysis of the research status of case teaching method in financial discipline teaching from high-productive authors, core research institutions and journal sources, and makes an in-depth analysis of the research hotspots and future research directions in this field through keyword mapping and clustering.

## 1. Introduction

Financial discipline curriculum content has both theoretical depth and breadth of practice, but most of the current courses still adopt the traditional teaching mode. This teaching mode is significant for students to master basic knowledge of the theory, but it's hollow, fuzzy and tedious, and break away from financial practice. Passive acceptance of knowledge can easily make students lose their interest in learning [1]. The case teaching method applies the theoretical knowledge of the financial discipline to practice, which is an effective teaching means to realize the combination of theory and practice. It can fully mobilize students' initiative in learning, reflect students' dominant position in classroom teaching, and play an irreplaceable role in cultivating students' innovative spirit, ability to think independently about economic phenomena and financial [2]. Compared with the traditional teaching method, case teaching method is a relatively new teaching method, which has only a history of more than 100 years in western countries, and it has been introduced into China only more than 20 years[3]. Case teaching method was initially applied in the teaching of professional courses of management and law, but because of its positive role in activating the classroom atmosphere, improving students' participation and teaching effect [4]. It has gradually been widely concerned, including medicine, computer science and other disciplines have gradually begun to explore case teaching methods. In recent years, scholars have paid more and more attention to the research on the application of case teaching method in finance. Based on the above background, in order to more comprehensively understand the research status of the application of case teaching method in the teaching of finance majors, this paper uses CiteSpace as a bibliometric method to conduct an in-depth analysis of the research characteristics and path evolution of this research.

## 2. Data Sources and Research Methods

### 2.1. Data Sources

In this paper, CNKI database was used as the data source, and the subject included both "case teaching" and "finance" as the search criteria, and 503 search results were obtained initially. In order to ensure that the literature could accurately reflect the research status, 487 valid literature were obtained by manually excluding such literature as notices and news reports.

### 2.2. Research Methods

Based on the analysis method of bibliometrics, this paper uses the software CiteSpace developed by Chen Chaomei to conduct knowledge graph analysis, and reflects the research status, research hotspots and future development trend of case teaching method in the course teaching of finance through co-occurrence analysis and cluster analysis.

## 3. Descriptive Statistics

### 3.1. Core Authors

Table 1 shows the authors who published more papers on the application of case teaching method in financial teaching. Wang Zhouwei, Yang Shenggang, Huang Li, Luo Chunchan, Wen Wa and Qiao Haishu are the most productive authors with more than two papers. Wang Zhouwei, Yang Shenggang and Huang Li are the most productive authors with more than three papers, followed by Qiao Haishu and Han Li with two papers.

Table 1: Authors with high productivity ( $\geq 2$ ).

rank	Author	institutions	rank	Author	institutions
4	Wang Zhouwei	Shanghai Normal University	2	Cui Xiaolei	Nantong University
3	Yang Shenggang	Hunan University	2	Jiang Xiaoyan	Anhui University of Finance and Economics
3	Huang Li	Foshan University	2	Zhao Xiaona	Qinghai Normal University
3	Luo Chunchan	Liaoning University	2	Ding Qilin	Changsha University of Science and Technology
3	Wen Jie	Honghe College	2	Zhang Yuhua	Yangtze University
3	Qiao Haishu	Hunan University	2	Tang Jingjing	Guangxi University
2	Xu Chuanhua	Hubei University of Economics	2	Ye Lixin	Nanjing University of Science and Technology
2	Han Li	Beijing Union University	2	Lin Yuan	Hunan Institute of Finance and Economics
2	Shi Lin	University of Science and Technology Beijing	2	Wang Jinghua	Ningbo Institute of Engineering

Through CiteSpace, the node is set as "Author". The knowledge map of authors in this research field is shown in Figure 1, which contains 441 nodes and 132 lines with a density of 0.0041. It can be seen from the figure that the scope of cooperation among researchers in this field is relatively small, the personnel distribution is relatively scattered, and the multi-institution cooperation network has not yet been formed.



Figure 1: Author co-authorship network.

### 3.2. Core Research Institutions

CiteSpace was used to analyze the publishing institutions in this field and extract the top 10 research institutions with publishing volume, as shown in Table 2. As can be seen from Table 2, Zhongnan University of Economics and Law ranked first with 8 articles published, followed by Beijing Union University and Dongbei University of Finance and Economics with 6 articles published. The co-occurrence knowledge graph of research institutions is shown in Figure 2. It can be seen from the graph that there is little cooperation among research institutions and the relationship is not close, which needs to be further deepened. The research work in this field is mainly concentrated in key colleges and universities, and there is little cooperation among local colleges and universities. Case teaching method plays an important role in teaching. Therefore, it is necessary to further strengthen the cooperation between local colleges and universities and research institutions to improve research capacity, so as to better serve the financial teaching work.

Table 2: Core research institutions.

rank	institution	number	rank	institution	number
1	Zhongnan University of Economics and Law	8	6	Zhengzhou Institute of Aeronautical Industry Management	5
2	Beijing Union University	6	7	Guangdong Business School	5
3	Dongbei University of Finance and Economics	6	8	Fujian Jiangxia University	5
4	Central South University of Forestry and Technology	5	9	Guangdong University of Foreign Studies	4
5	Shanghai Normal University	5	10	Guangdong University of Finance and Economics	4



Figure 2: Cooperation network of institutions.

### 3.3. Journal Sources

Based on CiteSpace's source analysis of journals in this field, the top 10 journals with publication volume are extracted, as shown in Table 3. As can be seen from Table 3, financial education research ranked first with 21 papers, followed by Education and Teaching Forum, Times Research Guide and Times Finance with 18, 16 and 16 papers respectively. It can be seen that the core journals in this research field are mainly financial education research and education and teaching forum.

Table 3: Journal sources.

rank	source	number	rank	source	number
1	Finance education research	21	6	Financial theory and teaching	12
2	Education and teaching forum	18	7	Manage case studies and reviews	10
3	Economic Research Guide	16	8	Financial theory exploration	9
4	Times Finance	16	9	Finance and Economy	9
5	Modern trade and industry	12	10	Experimental technology and management	1

## 4. Research Hotspots and Path Evolution

### 4.1. Keyword Frequency Analysis

Keywords in the data were analyzed by CiteSpace, and the co-occurrence map of keywords in this field was obtained as shown in Figure 3. The figure contains 382 nodes and 750 lines, and the centrality is 0.0103. The node size in the figure represents the frequency of occurrence of keywords, the thickness of the line represents the degree of co-occurrence between keywords, and the node centrality greater than 0.1 indicates that the keyword has high centrality and plays a pivotal role. It can be seen from the figure that "case teaching", "teaching reform", "teaching method" and "international finance" are nodes with high frequency and intensive connection, which play a core role in keywords in this field.

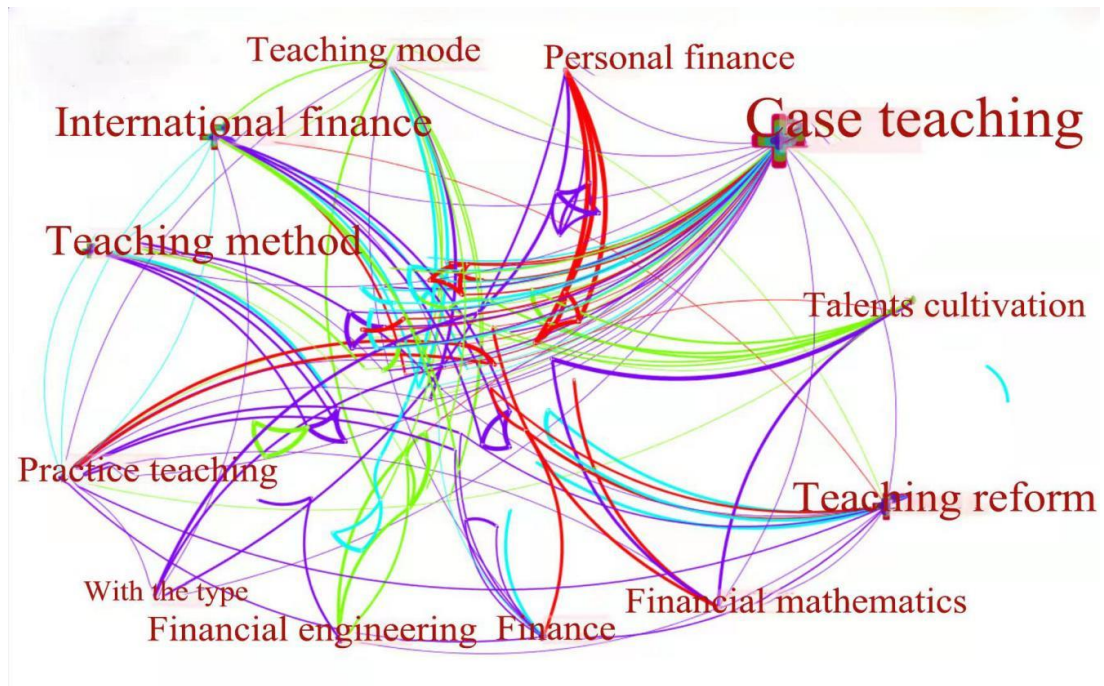


Figure 3: Knowledge graph of keyword frequency.

The top ten high-frequency keywords are shown in Table 4, and "case teaching" has the highest frequency, reaching 151 times. Excluding case teaching, the words with the highest frequency were teaching methods, teaching reform, finance, international finance and practice teaching 71 times, 67 times, 53 times, 45 times and 37 times, respectively. It can be seen that the application of case teaching method is the teaching method and teaching reform is the main content. In addition, the frequency of "teaching mode" is relatively high, so it can be seen that case teaching method is also the main way to optimize the teaching mode.

Table 4: Keyword frequency.

rank	Frequency	Centrality	keywords	rank	Frequency	Centrality	Keywords
1	151	0.66	Case teaching	6	37	0.09	Practical teaching
2	71	0.14	Teaching method	7	22	0.06	Model of teaching
3	67	0.16	Transformation of education	8	18	0.07	Content of courses
4	53	0.2	Finance	9	17	0.04	Reform
5	45	0.11	International finance	10	12	0.06	Talent cultivation

## 4.2. Keyword Cluster Analysis

In order to better investigate the knowledge structure of case analysis in financial related research hotspots and explore the combination and classification of keywords, the log-likelihood ratio (LLR) was used to cluster high-frequency keywords, and a clear keyword cluster map was obtained by adjusting the threshold for many times. In general, the modular value  $Q > 0.3$  means that the community structure is significant, and when the average corridor value  $S > 0.7$ , the clustering is efficient and convincing.

Table 5: Literature clustering details.

Cluster ID	Cluster name	Size	silhouette	Keyword
0	Case teaching	52	0.922	Flipped classroom; practical ability; The teaching method; Transformation of ducation
1	Finance	45	0.822	Practical teaching; Bilingual education; Practical; Professional
2	The international financial	34	0.679	Investment principles; Big data; Online finance; The teaching method
3	Transformation of education	33	0.765	Reform; Application; International trade; Course
4	The teaching method	30	0.781	Financial; Financial accounting; Quality of teaching; Mathematical modeling
5	Case	24	0.94	Financial engineering; Model of teaching; Experiment teaching; Get a job
6	Content of courses	21	0.914	Cultivation of talents; Financial mathematics; Local colleges and universities; Credit card business
7	Cultivation of talents	21	0.92	Corporate finance; Teaching methods; Curricula construction; Questionnaire survey

The module value  $Q=0.5925$  indicates that the clustering result has a significant structure, and the average contour value  $S=0.8565$  is efficient and convincing. Taken together, the atlas is valid. According to the atlas, a total of 8 clusters were obtained as can be seen from Figure 4 and Table 5. They are case teaching, finance, international finance, teaching reform, teaching methods, cases, teaching content, and talent cultivation.

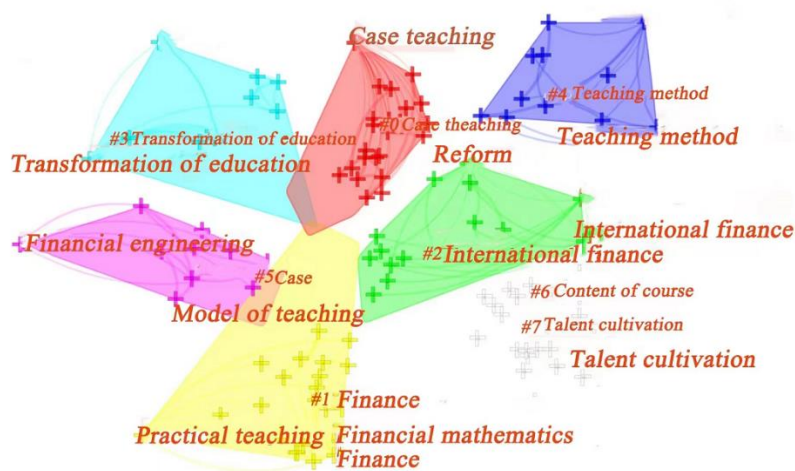


Figure 4: Keywords clusters.

Based on atlas clustering and combined with research hotspots and themes, it can be found that current scholars' studies on the application of case teaching method in finance-related professional courses mainly focus on the following aspects:

First, case teaching is a new interactive teaching method. Interactive teaching has been proved to be an effective way to improve students' enthusiasm in teaching and achieve better teaching results. "Multi-dimensional interactive teaching method" refers to the diversified and multi-dimensional

interaction patterns, which are diverse and complementary, thus forming some fixed patterns and mechanisms of teacher-student interaction in class [5].

Second, case teaching is an important part of finance teaching reform. The case method originated in the 1920s and was advocated by Harvard Business School. The financial market is playing an increasingly important role in the national economy, and the country has put forward higher requirements for comprehensively promoting quality-oriented education[6].For example, the traditional teaching mode of the cross-discipline "financial law" is difficult to meet the needs, so it is urgent to reform the traditional teaching mode and explore new teaching mode. Through a systematic review of the literature related to the course reform, some studies have found that there are some problems in the teaching of this course, such as the content and system of teaching materials to be improved, the teaching method to be improved and the examination method to be simplified [7]. The teaching reform of the course is beneficial to cultivate students' learning ability, improve teachers' teaching level and improve the overall teaching quality [8]. Further research can be deepened by constructing more reasonable indicators to measure the effect of teaching reform and collecting relevant data in colleges and universities for empirical research.

Third, "international finance" course is an important application of case teaching method. This is one of the major courses of international trade, as well as a professional extension course for other economics and management majors. In the case teaching class, the whole teaching process is open and interactive which is difficult. If the discussion is too divergent and the pace is too slow, it is easy to deviate from the theme. If it is too fast, and students can not understand deeply, or do not speak out their own experience, it will affect the teaching effect. Case method teaching should stimulate students to ask questions, encourage students to publish their views, exercise the students' ability to sum up, and training students to explore truth in academic courage, which helps to create a relaxed and free learning atmosphere [9].

Fourth, case teaching is an important way to cultivate innovative talents. Case teaching is an effective means to cultivate innovative talents [10]. But this function of case teaching has not received due attention in Chinese universities' teaching practice. Therefore, we must understand the connotation of case teaching, strive to explore the deep goal of case teaching, and give full play to the role of case teaching in cultivating innovative talents by selecting appropriate high-quality cases and improving case teaching and learning skills.

### 4.3. Analysis of Keyword Burstness

Keyword burst detection refers to the word frequency of a keyword variable increases rapidly in a certain period of time and suddenly becomes the focus of academic research. Keywords pop detection can be used to review the research hotspots in different time periods and predict the research hotspots and trends in the future to a certain extent. On the other side of the Citespace keyword co-occurrence profile, set the parameter Y to 0.2 and Minimum Duration to 2 years. Click View to obtain the keyword occurrence profile. In the graph, Strength represents the intensity of breakout, begin represents the beginning year of keyword related research, End represents the end year of keyword breakout, dark block represents the time period of breakout, and light block represents the time slice in years.

According to the keyword burstness shown in Figure 5, the extracted 14 keywords can be roughly divided into two parts according to the boundary of 2011. Before 2011, the research focuses mainly on teaching methods, curriculum system, basic ideas, curriculum setting, financial discipline, development trend and teaching content. Most of these research points are basic content research of case teaching method. After 2011, the main research focus has been on financial mathematics, applied research, finance specialty, teaching mode, flipped classroom, talent cultivation and investment, and

the focus has shifted to the application and action object of case teaching method as well as the social benefits it brings. With the deepening of economic transformation and research, high-quality economic development has attracted academic attention. The transformation of case teaching method is conducive to the cultivation of applied talents and affects the high-quality development of China's economy.

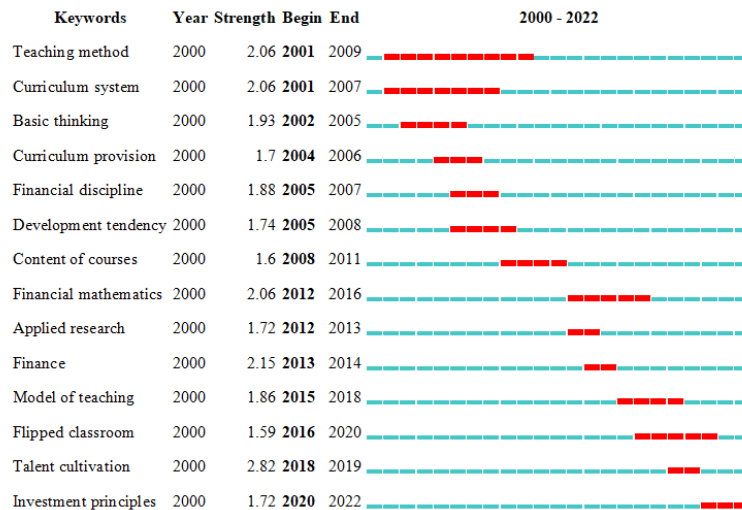


Figure 5: Keywords burstness.

Due to the continuity of keyword emergence, high-quality economic development in the next 1-2 years is expected to become a hot topic and cutting-edge issue in the future, which can be a starting point for future scholars to conduct research. According to the key word emergence chart of case teaching method in the financial field from 2000 to 2022, there is a high degree of correlation between research hotspots and policies in different periods, which indicates that scholars may return to the actual needs of the country to provide theoretical reference for social practical problems, but also reflects the phenomenon of insufficiency of content.

## 5. Conclusions

This paper takes 487 papers on the application of case teaching method in finance from 2000 to 2022 collected by CNKI as the research object, and uses CiteSpace as a bibliometry tool to analyze the research hotspots and future research directions in this field through high-producing authors, core research institutions, keywords clustering, etc. The main conclusions are as follows:

First, Wang Zhouwei, Yang Shenggang and Huang Li are the core authors in this field with many research achievements. Finance teaching research and education teaching Forum are the core journals in this field. Secondly, from the perspective of research institutions, researchers in the field of application of case teaching method in finance course teaching are scattered, and the multi-institution cooperation network has not yet formed. Zhongnan University of Finance and Economics, Beijing Union University, and Dongbei University of Finance and Economics are the core research institutions in this field. Thirdly, from the perspective of keyword frequency and clustering, case teaching, teaching methods, teaching reform, finance, international finance appear more. Through clustering analysis of keywords, it is found that case teaching, finance, international finance, teaching reform and teaching content are relatively large clusters, which belong to the main content of case teaching method in the field of finance application. Fourthly, according to the keywords dash forward show map analysis, 2011 by the basic content of case teaching research turned to the study of application objects, and social benefits, the next 1 to 2 years with high quality and economic



development is expected to become the research hotspot and frontier problems in the future, research focus of financial professional respectively, teaching mode, talent training, investment, etc.

Financial courses are both theoretical and practical. Case teaching is suitable for the application of relevant curriculum teaching, but case teaching should not only rely on cases, but also integrate financial theory knowledge, pay attention to students as the main body, set up reasonable teaching process and teaching evaluation methods, and carry out comprehensive teaching mode reform. The effectiveness of case teaching depends on case writing, students' participation in case discussion and teachers' classroom organization ability of case teaching. Therefore, how to write a teaching case, design case as the core of teaching content, driven by case teaching and case analysis with practical ability as the goal of curriculum assessment plan, to improve students' practical ability to solve practical problems, the independent innovation learning consciousness and so on, the case teaching method in the research emphasis in financial related professional courses.

## Acknowledgement

This work is supported by Education and Teaching Reform Research Project of Hefei University (Grant No.2021hfujyxm38 and No.2021hfuhhkc23), and also by Quality Engineering project of Higher Education in Anhui Province (Grant No.2020xsxxkc399).

## References

- [1] Xu Min. (2005) *Some Thoughts on Financial Case Teaching*. *Research on Financial Education*, 1, 71-72.
- [2] Wang Heng. (2015) *Analysis on the Application of Case Teaching Method in Finance Teaching*. *Research of Financial Education*, 28, 2, 85-88.
- [3] Su Lifeng. (2015) *Application of Case Teaching Method in Finance Specialty Course Teaching*. *Financial Education Research*, 28, 2, 80-84.
- [4] Li Yanfeng, Wang Qulin. (2018) *Study on Design and Effectiveness of Case Teaching of "Corporate Finance" course*. *Journal of Huaihai Institute of Technology: Humanities and Social Sciences*, 16, 8, 128-131.
- [5] Du Zhongxia. (2008) *On the Application of Case Teaching Method in Law Classroom Teaching*. *Legal System and Economy*, 18, 117-118.
- [6] Wu Zaihua, Zhang Jing, Ma Yangjie. (2022) *New Progress in the Teaching Reform of "Financial Law"*. *Contemporary Educational Theory and Practice*, 14, 3, 48-53.
- [7] Zhang Zhijun, Zhang su. (2010) *Case Teaching Reform of Financial Law Course*. *Journal of Liaoning University of science and technology*, 3, 330-331.
- [8] Li Bin. (2016) *Analysis on Case Teaching of Financial Law Course in Finance Major*. *Xueyuan*, 32, 29-32.
- [9] Li L, Shi Y, Li W et al. (2021) *On Case Teaching in Vocational Education and Training*. *2021 2nd International Conference on Mental Health and Humanities Education (ICMHHE 2021)*.
- [10] Chen Fusong. (2009) *Case Teaching and Innovative Talent Training*. *Journal of Yangzhou University: Higher Education Research Edition*, 5, 81-83.