

Research on the Research Status and Development Trend of Basketball Tactics in China in the Past 20 Years

-- Based on Cite Space Analyse

Shi Yu*

School of Physical Education, Southwest University, Beibei, Chongqing, 400715, China

*Corresponding author email: sy70836061@163.com

ABSTRACT

This study uses China National Knowledge Infrastructure (CNKI) as the data source, the retrieval strategy is the subject word "basketball tactics", the literature time span is from January 2004 to May 2024, and 456 valid literature are finally obtained, and CiteSpace software is used to sort out and analyze the aspects of basketball tactics in China, aiming to explore the shortcomings of basketball tactics in China in theory and practice, and provide guidance and help for future research and practice. The results show that from the analysis of the number of articles on basketball tactics published in each year, the number of articles published in domestic journals on basketball tactics generally shows a trend of first increasing and then decreasing, reaching the highest value in 2017 and showing a wave-like decreasing trend after 2017, which to a certain extent reflects the decrease in the attention of domestic scholars in the field of basketball tactics in recent years, and should be maintained. The number of core authors of high-yield basketball tactics in China is small, and the number of authors published is relatively low. From the perspective of the distribution of research institutions, the authors and institutions are affected by the differences and majors of colleges and universities, and on the whole, colleges and universities with sports majors pay more attention to the field of basketball tactics research. From the perspective of the institutions that issued the papers, the degree of cooperation between institutions is low, the communication is not close enough, and only a few research institutions have cooperative relations, and it is necessary to strengthen the cooperation between institutions. Domestic research hotspots focus on basketball tactical theory research, applied research and teaching.

KEYWORDS

Basketball Tactics; Cite Space; Visual Analytics.

1. INTRODUCTION

Basketball is a competitive game where points are used to win, and basketball tactics play a key role in winning the game. Basketball tactics is a strategic, organized and conscious collaborative use of technology to carry out offensive and defensive confrontation between players and players in basketball games, which is a collective offensive and defensive method based on basketball technology and dominated by certain tactical guiding ideology and tactical awareness.

Since the beginning of this century, there have been many meaningful studies in the related field of basketball tactics, such as Zhang Chenglong's "New Thinking on Modern Competitive Basketball Tactical Training", which discusses the concept and method of modern competitive basketball tactical training. Luo Haijun, Zhu Sirui and Tan Zhenbin's "A Comparative Study of the Tactical System and

Content of Basketball Books in China and the United States" put forward the similarities and differences between the tactics of the two countries. From the perspective of basketball tactics, there are few articles dedicated to basketball tactics, while quantitative research can more accurately reflect the current research hotspots and development trends.

2. RELEVANT DATA SOURCES AND METHODS

2.1. Data Source

The study used China National Knowledge Infrastructure (CNKI) as the data source, the retrieval strategy was the subject word "basketball tactics", the literature spanned from January 2004 to May 2024, and 456 valid literature were finally obtained.

2.2. Documentary Law

Literature related to basketball tactics was retrieved and downloaded from CNKI database, and these literature materials were sorted out and read. On the basis of consultation and learning, this paper focuses on basketball tactics and integrates qualitative and quantitative analysis methods to study the development history and current status of basketball tactics.

2.3. Data Processing

Since CiteSpace software has certain requirements for data format, this paper exports CNKI documents in RefWorks format and uploads these data to CiteSpace6.1.R6.

2.4. Parameter Setting

Set the time span to 2004-2024, set every 1 year as a time partition, and set the source and type: the system defaults on the source and critical path of the subject heading; Keywords, institutions, authors, etc. were selected as nodes for co-citation analysis. Filtering criteria: Set Top institutions and authors as 10, that is, the selected data are all in the top 10, and the selected data are the most occurrences or the highest common citation frequency. Select the criteria for the keyword, and set Top to 10. After setting the above parameters, the graph is generated by running the CiteSpace 6.1.R6 software.

2.5. Visual Analysis

The CiteSpace tool was used to conduct a quantitative analysis of the literature in related fields. Taking basketball tactics development as an example, CiteSpace 6.1.R6, cluster analysis and highlight analysis were comprehensively used. These methods allow us to comprehensively explore the research trends and hotspots of basketball tactics. The co-occurrence graph shows the number of connections, the size of nodes and the number of nodes in an intuitive way, where the size of the nodes represents the frequency and the degree of connection between nodes is reflected by the connections of different thicknesses. With these analyses, we can not only observe the size of the module, but also obtain data such as the ModularityQ indicator. The former reflects the size of the cluster, while the latter reveals the degree of association between the clustering nodes.

3. RESEARCH RESULTS AND ANALYSIS

3.1. Annual Analysis of the Number of Papers Published

Judging from the research trend in China, the number of papers published in the field of basketball tactics in the past two decades has generally shown a trend of first increasing and then decreasing.

From 2004 to 2008, there was an upward trend, from 6 to 25 articles, which may be related to the holding of the Olympic Games and the increase in events. From 2008 to 2009, the number of articles published began to grow after a brief decline, from 13 in 2009 to 40 in 2017, reaching the peak of the number of articles on basketball tactics, which may be related to the fact that the 2008 Olympic Games won the top eight results in the world and the Chinese men's basketball team won the first place in the 2015 Asian Championships. After 2017, it began to fall off a cliff, and by 2023, there will be only 4 articles left, which may be the reason for the decrease in basketball events due to the impact of the epidemic.

3.2. Distribution of Research Institutions

Exploit CiteSpace 6.1.R6, CNKI database“Institute”.

Table 1. List of high-frequency institutions for basketball tactics research

institution	Amount of literature
School of Physical Education, Hunan Normal University	5
Jilin Institute of Physical Education	5
Zhejiang University of Traditional Chinese Medicine	4
School of Physical Education, Henan University	4
School of Physical Education, Jiangxi Normal University	3
Shangqiu Vocational and Technical College	3
Department of Physical Education, Wannan Medical College	2
Department of Physical Education, Henan University of Science and Technology	2
College of Sports Science, Jishou University	2
School of Physical Education, Northeast Normal University	2

Among the 456 journal articles, more than half of the top 10 published articles are colleges and universities with physical education colleges, including Hunan Normal University, Jilin University of Physical Education, Zhejiang University of Traditional Chinese Medicine, Henan University, Jiangxi Normal University, and Jishou University and Northeast Normal University are undergraduate colleges. On the whole, it is still dominated by the physical education colleges of major universities, with undergraduate schools accounting for the majority of papers, and junior colleges and universities accounting for a small proportion of papers. Among the top 10 institutions in China's basketball tactics from 2004 to 2024, the School of Physical Education of Hunan Normal University and Jilin University of Physical Education tied for the first place with a total of 5 articles, followed by Zhejiang University of Traditional Chinese Medicine and the School of Physical Education of Henan University, with 4 articles, the third was the School of Physical Education of Jiangxi Normal University and Shangqiu Vocational and Technical College, with 3 articles, and the remaining 4 schools published less than 3 articles. It can be seen that the School of Physical Education of Hunan Normal University and Jilin University of Physical Education have done more research in this field, but have little cooperation with other institutions, indicating that the cooperation between domestic research institutions is not very close.

3.3. Research Author Contributions

Through the number of published papers, the depth of researchers' research in this area can be objectively evaluated, and the analysis of the existing literature shows that scholars Xuan Xuan and Feng Hong have been focusing on the study of basketball tactics since 2004, among which the author Diao Jiayu has published the largest number of papers, reaching 4.

Table 2. Top 10 scholars in basketball tactics literature contributions

Amount of literature	year	author
4	2016	Diao Jiayu
3	2004	Xuanxuan
3	2004	Feng Hong
3	2010	Zhang Chenglong
2	2017	Jiang Wensheng
2	2006	Zhan Shuping
2	2006	Li Shi
2	2014	Mao Denghua
2	2009	Zhang Junqing
2	2006	Ma Jie

3.4. Clustering of Research Topics and Analysis of Research Hotspots

(1) High-frequency keyword analysis

Table 3. Frequency and centrality associated with basketball tactics

keyword	Frequency	Centrality
Tactical awareness	151	0.46
basketball	129	0.57
cultivate	93	0.1
Basketball tactics	84	0.68
tactics	40	0.1
Basketball instruction	40	0.07
Basketball	25	0.12
training	23	0.03
Basketball awareness	22	0.08
University	21	0.02

After obtaining the keywords related to basketball tactics through the CNKI database, the CiteSpace 6.1.R6 software was used to select the node type to calculate the frequency of each keyword. As shown in Table 3, the 10 most frequently searched keywords were analyzed in this study. The word with the highest centrality is "basketball tactics", which appears 84 times and has a centrality of 0.68, indicating that this is the most central keyword of basketball tactics. In addition, words that appear more than 30 times include words such as "tactical awareness", "basketball", "training", and "tactics".

These are the focus of research in the field of basketball tactics. From the perspective of research content, the academic community mainly analyzes basketball tactics from the aspects of theory, impact analysis and teaching.

(2) Collinear analysis

The data obtained from the above methods were imported into the CiteSpace 6.1.R6 software and the resulting clusters of research topics were analyzed, which fully illustrated the development trend of the research topic of basketball tactics and its main research content. The result is a visual analysis in Figure 2. If the value of the clustering module (Q) > 0.3 , it indicates that there is a significant clustering structure. A value of $0.5 < \text{the average contour coefficient (S) of the cluster} < 0.7$, indicating that the value is credible. The Q value is 0.4929 (see Figure 2) and the S value is 0.847. "Basketball Tactics", "Tactics", "Training", etc. are all co-occurrence network analysis clusters of CNKI. In summary, the academic community has conducted in-depth research on basketball and related fields through these keywords, including the impact analysis of basketball tactics, theoretical research, basketball teaching, etc.

3.5. Research Hotspot Analysis

(1) Keyword co-occurrence analysis.

Keywords are the embodiment of the main body and core of an article, and are a high degree of generalization and condensation of the content of the article. The visual analysis of keywords can clearly understand the hot topics in the field of basketball tactics research in China, as well as the development trend of basketball tactics research. Therefore, the keywords of 456 basketball tactics literature were visually analyzed by CiteSpace software, and the keyword co-occurrence knowledge graph as shown in Figure 2 was obtained. The obvious keywords in the figure include training, tactics, basketball tactics, technical tactics, college basketball, tactical teaching, strategy, etc., indicating that these keywords appear frequently in the scientific research literature in the field of basketball tactics research.

(2) Basketball teaching

Basketball tactics is a dynamic development, especially in recent years, competitive sports pay more and more attention to the training of tactical literacy and tactical ability, the changes of basketball tactics are varied, both to implement step by step and constantly adjust according to the changes on the court, the tactics into basketball teaching and training, can improve the teaching effect, increase students' understanding of basketball. Therefore, we need to have a comprehensive understanding of basketball tactics, constantly keep up with the times, and enhance our knowledge and understanding of basketball tactics so that we can use basketball tactics flexibly.

4. CONCLUSION

(1) From the analysis of the number of basketball tactics articles published in each year, the number of articles published on basketball tactics in domestic journals generally showed a trend of first increasing and then decreasing, reaching the highest value in 2017 and showing a wave-like decreasing trend after 2017, which to a certain extent reflects the decreasing attention of domestic scholars to the field of basketball tactics in recent years;

(2) The number of core authors of basketball tactics in China is relatively small, and the number of authors is relatively low. From the perspective of the distribution of research institutions, the authors and institutions are affected by the differences and majors of colleges and universities, and on the whole, colleges and universities with sports majors pay more attention to the field of basketball tactics research.

(3) From the perspective of the institutions that published the papers, the degree of cooperation between institutions is low, the communication is not close enough, and only a few research institutions have cooperative relations;

(4) The domestic research hotspots focus on the theoretical research, applied research and teaching of basketball tactics.

REFERENCES

- [1] ZHANG Chenglong. Journal of Guangzhou University of Physical Education,2012,32(06):77-80.DOI:10.13830/j.cnki.cn44-1129/g8.2012.06.022.
- [2] LUO Haijun,ZHU Sirui,TAN Zhenbin. A comparative study on the tactical system and content of basketball books in China and the United States[J].Journal of Shandong University of Physical Education,2008,(06):56-60+66. DOI:10.14104/j.cnki.1006-2076.2008.06.019.
- [3] FAN Bin. Research Progress of Basketball Physical Training in China--Visual Analysis Based on Scientific Knowledge Graph[J].Sports,2017,(18):5-7.
- [4] Zhang heng. A review of professional basketball research in China: Knowledge graph analysis based on CiteSpace[J].Science & Technology Information,2020,18(27):242-244.DOI:10.16661/j.cnki.1672-3791.2007-5042-7621.
- [5] SONG Junyi,CHEN Zai,XIANG Chengju. Research on basketball training in China based on CiteSpace and bibliometrics[J].Sports Science and Technology,2022,43(05):1-4.DOI:10.14038/j.cnki.tykj.2022.05.027.
- [6] ZHAO Mingguo,HUANG Qiaoting,XU Jie. Research status and prospect of children's physical activity in China in the past decade: Based on CiteSpace visual analysis[J].Stationery & Sports Supplies & Technology,2024,(15):127-129.
- [7] YANG Yingxiang,YANG Yinggu. Econometric analysis of domestic college students' emotion regulation research based on CiteSpace[J].Psychological Monthly,2024,19(15):62-66.DOI:10.19738/j.cnki.psy.2024.15.018.
- [8] Lin Zhixu.Re-understanding the tactics of modern basketball[J]. Re-understanding the tactics of modern basketball,2023,27(06):33-37+84.y:10.19715/j.Tiyokeshovenjio.2023.06.005.
- [9] JIANG Wensheng. On the cultivation of tactical awareness in college basketball training[J].Contemporary Sports Science and Technology,2022,12(14):44-46.DOI:10.16655/j.cnki.2095-2813.2112-1579-0998.