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Analysis of Research Hotspots and Trends in the Integration of Education and Sports in China

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Abstract
The integration of sports and education is a further consideration of the state on sports work and a specific measure to implement the national strategy of building a sports power. It has profound significance for promoting the health of young people in sports. In the "Notice on Issuing Opinions on Deepening the Integration of Sports and Education to Promote the Healthy Development of Young People", China clearly proposed to "deepen the integration of sports and education with Chinese characteristics". In fact, the integration of sports and education is not a new term, but the changes of the times have endowed it with a deeper connotation. Therefore, this paper uses the CiteSpace visualization analysis tool to sort out the existing research results and reflect on them accordingly. This is not only a new starting point for the in-depth development of research on the integration of sports and education, but also a necessary choice for reflecting on the sports work of young people in China. To accurately reflect the development of research on the integration of sports and education, this paper takes academic journals with strong timeliness as the sample source and uses a combination of quantitative and qualitative methods to use software to draw a picture of the research on the integration of sports and education in China from the aspects of the distribution of research literature by year, author contribution, and research institutions. By reviewing the existing research results on the integration of sports and education in China and conducting a comprehensive examination from both quantitative and qualitative perspectives, the purpose is not only to draw a map of the research on the integration of sports and education in China, but more importantly, to reflect on the deficiencies. Through sorting and analysis, the study suggests that future research on the integration of sports and education in China should focus on deepening in the following four aspects: first, emphasizing the leading role of core authors and deepening the intensity of cooperation in research on the integration of sports and education; second, broadening the research field and enriching the content of research on the integration of sports and education; third, combining qualitative and quantitative methods to improve the quality of research on the integration of sports and education; fourth, emphasizing comparison and reference to form a research ecosystem of dialogue.

Keywords
Integration of sports and education; Knowledge map; Prospect

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The integration of sports and education is a further consideration of the state on sports work and a specific measure to implement the national strategy of building a sports power. It has profound significance for promoting the health of young people in sports. In the "Notice on Issuing Opinions on Deepening the Integration of Sports and Education to Promote the Healthy Development of Young People" (here in after referred to as the "Notice"), the state clearly proposed to "deepen the integration of sports and education with Chinese characteristics."[1] In fact, the integration of sports and education is not a new term, but the changes of the times have endowed it with more profound connotations. Therefore, using visualization analysis tools to sort out existing research results and reflect on them is not only a new starting point for promoting the in-depth development of research on the integration of sports and education, but also a necessary choice for reflecting on the work of youth sports in our country.

1 Research Data and Methods

1.1 Research Data

To accurately reflect the development of research on the integration of sports and education, this paper takes academic journals with strong timeliness as the sample source. Therefore, this paper uses China National Knowledge Infrastructure (CNKI) as the search platform, selects journal articles as the literature type, and does not limit the time range. At the same time, in order to ensure a comprehensive search, this paper uses "integration of sports and education" as the search term, and a total of relevant articles were retrieved. Non-academic literature such as book reviews and conference papers were manually removed from the search results, and finally, articles were obtained as sample articles. Then, the main information of these articles was exported in the form of a table, and further in-depth research was conducted on the sample articles.

1.2 Research Methods

This study uses visualization software to draw images of the research themes on the integration of sports and education, and conducts qualitative analysis on this basis, aiming to reveal the current situation of research on the integration of sports and education based on the "map", reflect on and look forward to the research on the integration of sports and education, and clarify the future direction and specific factors of this research.

2 Research Results and Analysis

2.1 Overview of Research on the Integration of Sports and Education

2.1.1 Analysis of Publication Years

Making a historical and comprehensive statistical analysis of the distribution of literature in a certain field and drawing the corresponding curve is conducive to predicting the development trend and dynamics of the field.[2] According to the samples in this study, it can be found that the research on the integration

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of sports and education before 2010 was still in its infancy, with a relatively small number of publications, totaling only 10. The turning point occurred in 2010, when 20 articles were published, which was directly related to the release of the “Notice”. From 2011 to 2012, there was an explosive growth, with 40 and 50 articles published respectively, indicating that the research topic of the integration of sports and education has received extensive attention from the academic community. After 2012, the number of articles on the integration of sports and education has shown a decreasing trend year by year, which is basically in line with the thinking process of people towards new things: “observation, following, enthusiasm, calmness, and rationality”.[3]

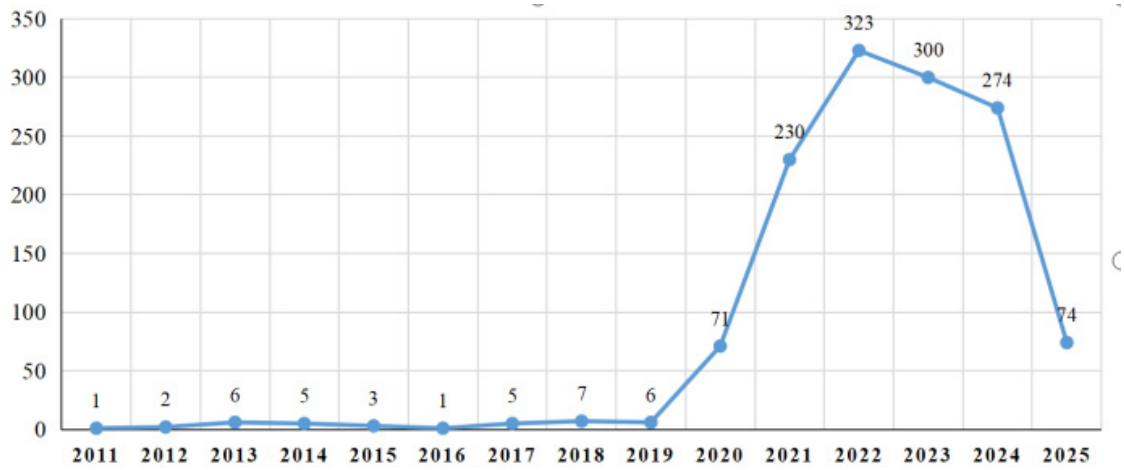


Figure 1. Trends in the publication years of papers on the integration of physical education and sports from 2011 to 2025

2.2.2 Distribution of Author Contributions

Generally speaking, identifying the main representative scholars and research teams in a certain research field can help us quickly gain an in-depth understanding of that field. Quantitative analysis of the authors of the sample literature can not only help us analyze the formation of the research community but also explore the core authors of the theme of integrating sports and education. Therefore, this paper explores the author contributions in the field of integrating sports and education in China by starting from the authors' publication situation and co-citation situation. By using CiteSpace to draw the author collaboration map and extracting the authors with a publication frequency of three or more.

Many authors in the field of integrating sports and education in China have formed cooperative relationships, among which the research group led by Liu Mingyi is the most prominent, with as many as seven members and most of them from the Wuhan area. On this basis, this paper further analyzes who the core authors are. Core authors refer to those who have high attainments in various disciplines, are active in academic activities, publish a large number of papers, and have a significant influence.[4] The number of publications (importance evaluation) and citation frequency (influence evaluation) are two important indicators used in bibliometrics to evaluate core authors. The comprehensive index method can take both aspects into account. If the comprehensive index of a candidate is greater than or equal to 1, they can be regarded as a core author in the research of integrating sports and education.

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Comprehensive index of candidate = (Number of publications×0.5) + (Citation frequency×0.5)

The specific operation is as follows: First, use Price's Law to determine the minimum number of publications for core author candidates. The calculation formula for core authors in Price's Law is $N = 0.749\times\sqrt{n_{max}}$, where N represents the minimum number of publications for core authors, and represents the number of papers published by the author with the highest number of publications in the sample literature. According to the statistics, the author with the highest number of publications in the sample literature is Professor Liu Mingyi from Wuhan Institute of Physical Education, who has published 17 articles. Substituting this value into the formula gives N = 3.09, which means that authors with $N \geq 4$ publications are core author candidates. The total number of citations for the author with the highest number of citations in the existing sample is 1,710. Based on Price's Law, the minimum cumulative citation count for core author candidates is $M = 0.749\times\sqrt{m_{max}}$, m_{max} = 1,710. After calculation, M = 30.97, which means that authors with $M \geq 31$ cumulative citations are core author candidates. Core author candidates who meet both criteria are counted, and ultimately, 31 people meet both criteria. According to the statistics, the 31 core author candidates have published a total of 182 articles, with a total of 17,878 citations. Therefore, the average number of publications is 5.87, and the average number of citations for the candidates is 576.71. Finally, the comprehensive index of the candidates is calculated based on the comprehensive index formula. After calculation, the comprehensive index of 11 people, including Liu Mingyi, is greater than 1 (as shown in Table 1). This means that these 11 people can be called core authors in the current research on the integration of sports and education.

Table 1. Ranking of Core Authors' Comprehensive Index

Ranking	Name	Number of Published Papers	Number of Citations	Comprehensive Index
1	Liu MingYi	17	1330	2.6
2	Liu BO	11	1709	2.42
3	Kong NianXin	12	1477	2.3
4	Yang GuoQing	5	1710	1.91
5	Dan YanFang	8	1268	1.78
6	Mao ZhenMing	6	1450	1.77
7	Gong HaiPei	7	1336	1.75
8	Zhong BingShu	4	1486	1.63
9	Guo Zhen	5	1240	1.5
10	Jing Yan	10	486	1.27
11	Xing JinMing	9	526	1.22

2.2.3. Distribution of Research Institutions

Research institutions are an important support for the development of research topics. The institutions conducting research on the integration of sports and education are mostly sports colleges and physical education colleges of normal universities. The institution that has conducted the most research on the integration of sports and education is Beijing Sport University, followed by Wuhan Institute of Physical Education and Nanjing Sport University. These research institutions have relatively strong research teams on the integration of sports and education, which can ensure the conduct of research. However, at the same time, we should also pay attention to the problems existing in the distribution of research institutions: First, the existing research institutions are mainly from the eastern region of China, and research institutions in the central

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and western regions lack sufficient attention to the integration of sports and education; second, most of the existing research is conducted independently by research institutions, and there is a lack of cross-institutional cooperation research. Therefore, increasing the attention of research institutions in the central and western regions to the research on the integration of sports and education and seeking effective cooperation among relevant research institutions may be one of the future development directions of the integration of sports and education.

2.2 Hotspots in the Research on the Integration of Sports and Education

The perspective of research hotspots is an important prerequisite for achieving innovation in research results in the academic field within a specific period of time. It focuses on the trends of research content, understanding the current research hotspots and main research methods, etc.

2.2.1 Co-occurrence Analysis of Keywords

Keywords are the condensation and summary of the main idea of an article by researchers. They can sensitively, objectively, and effectively reflect the research hotspots in a certain field, and have a good guiding role in strengthening hot topics. Therefore, this paper conducts a co-occurrence analysis of keyword frequencies for the sample literature. 1,308 sample articles are imported into Citespace, with the network node set as Keyword (keyword), the time slice span set as 1 year, and the G-index algorithm is used, with k = 20. All words unrelated to keywords are deleted, and a core keyword co-occurrence network containing 387 nodes and 492 connections is obtained (see Figure 4).

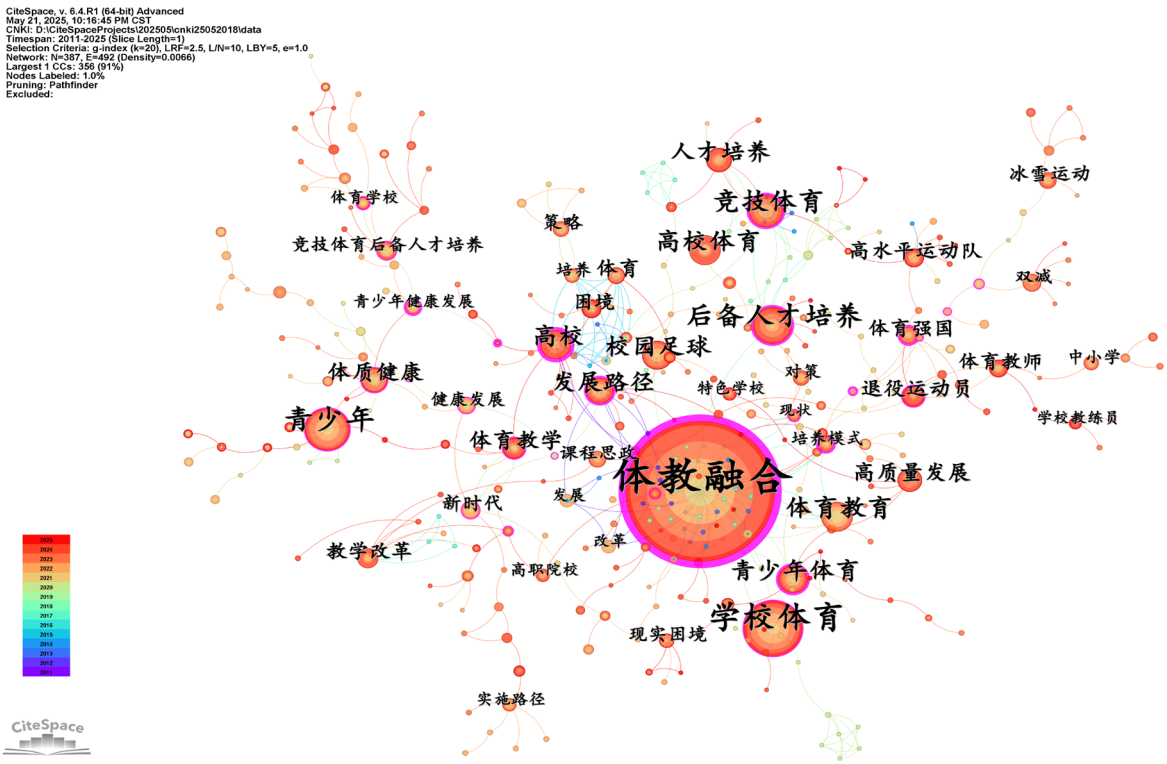


Figure 2. co-occurrence map of sports and education integration keywords

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As shown in Figure 2, the keywords in the research on the integration of sports and education mainly include the integration of sports and education, school physical education, teenagers, talent cultivation, competitive sports, etc. To further focus on the research content of integrating physical education and sports, this paper, based on the perspective of bibliometrics, conducts a detailed analysis of the frequency and betweenness centrality of keywords, as shown in Table 2. In CiteSpace, a keyword's betweenness centrality greater than 0.1 indicates that the keyword has a strong influence. As shown in Table 5, there are 29 keywords with a betweenness centrality greater than 0.1, which can be regarded as key nodes of the keywords in the research on integrating physical education and sports. At the same time, it is found that these 29 keywords with high betweenness centrality are basically consistent with the high-frequency keywords. This shows that the research content on integrating physical education and sports is very rich and highly focused. These studies not only include the basic theories of integrating physical education and sports, such as concepts and significance, but also involve specific practical paths, such as school sports and physical education teaching. This indicates that existing research can be carried out around the theory and practice of integrating physical education and sports.

Table 2. High frequency keywords and high school centrality keywords in the research of sports education integration

sorting	Frequency ranking			sorting	Intermediary centrality ranking		
	keywords	frequency	Initial year		keywords	Betweenness Centrality	Initial year
1	Integration of Sports and Education	1127	2011	1	Integration of Sports and Education	1.19	2011
2	school Physical education	183	2019	2	colleges and universities	0.59	2011
3	teenager	109	2020	3	Cultivation Model	0.3	2017
4	Cultivation of reserve talents	86	2018	4	Adolescent Health Development	0.29	2020
5	competitive sports	73	2013	4	Competitive talents	0.29	2022
6	physical education	55	2017	4	value orientation	0.29	2020
7	campus football	54	2019	7	Cultivation of reserve talents	0.27	2018
8	colleges and universities sports	50	2021	8	competitive sports	0.21	2013
8	colleges and universities	50	2011	8	Adolescent Sports	0.21	2019
10	Adolescent Sports	49	2019	10	development path	0.2	2012
11	development path	45	2012	10	a leading sporting nation	0.2	2020

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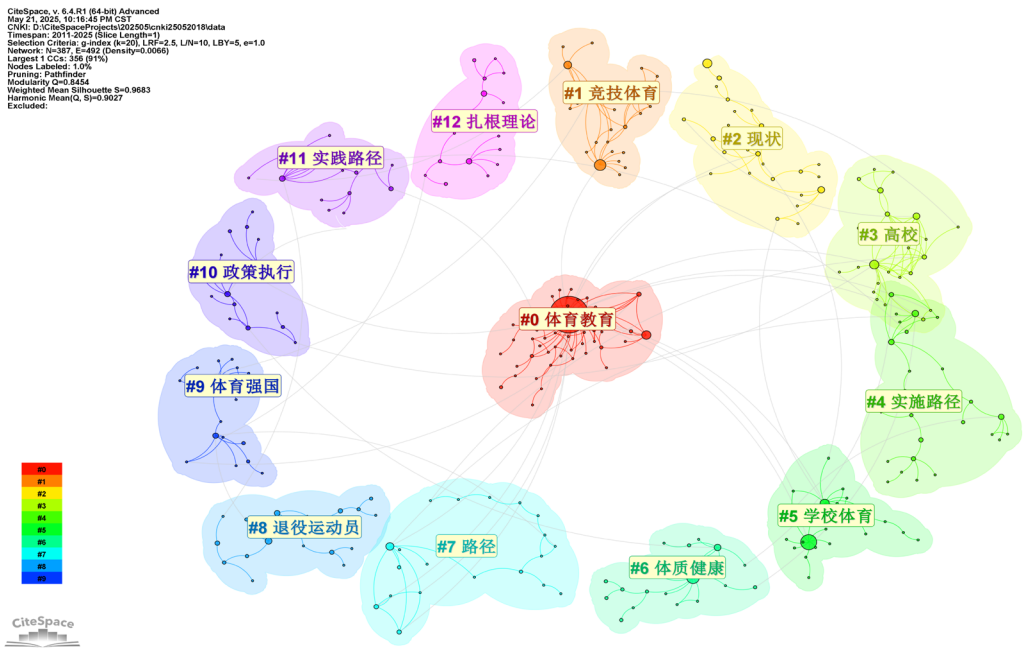
12	talent cultivation	41	2019	12	physical education teaching	0.19	2020
13	physical health	35	2020	13	Training of reserve talents in competitive sports	0.18	2020
14	high-quality development	33	2021	14	new era	0.16	2020
15	physical education teaching	31	2020	14	healthy development	0.16	2020
16	retired athlete	28	2021	16	Chinese competitive sports	0.15	2022
17	High level sports team	25	2014	17	school Physical education	0.14	2019
17	sports	25	2015	17	current situation	0.14	2017
19	teaching reform	24	2017	17	sports club	0.14	2022
20	a leading sporting nation	23	2020	17	inspiration	0.14	2022
21	dilemma	22	2022	17	Policy	0.14	2020
22	physical education teacher	21	2021	22	physical health	0.13	2020
23	new era	20	2020	22	retired athlete	0.13	2021
24	winter sports	19	2021	22	Sports talent cultivation	0.13	2018
24	strategy	19	2018	25	sports culture	0.12	2021
26	Realistic dilemma	18	2021	25	Sports discipline	0.12	2020
27	Training of reserve talents in competitive sports	16	2020	27	teenager	0.1	2020
27	double reduction	16	2022	27	teaching reform	0.1	2017
29	ideological and political education in curriculum	15	2021	27	sports School	0.1	2020

2.2.2 Cluster Analysis of Keywords

By conducting cluster analysis on the keywords of the sample literature, the structural characteristics of the research field are explored in depth, thereby revealing the intrinsic connections of the research hotspots on integrating physical education and sports. This paper further studies the sample literature, conducts a detailed analysis of the keywords and their relationships, and obtains a Q value of 0.8454 and an S value of 0.9683, fully demonstrating the effectiveness of the cluster analysis. Through cluster analysis of the keywords, 13 clusters are obtained (as shown in Figure 3). By further sorting out the core content of the research on integrating physical education and sports, the 13 clusters can be further divided into three aspects:

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Figure 3. Keyword clustering of sports education integration research



The first,Research on the Integration of Physical Education and Sports under the Basic Theory.This part includes clustering #0 physical education, #1 competitive sports, #2 current situation, #8 retired athletes, #9 sports power, and #12 grounded theory. The basic theoretical research on the integration of physical education and sports is an important part of the research on the integration of physical education and sports, mainly including the connotation of the integration of physical education and sports, the historical background of the integration of physical education and sports, the significance of the integration of physical education and sports, and the system of the integration of physical education and sports. In terms of the connotation of the integration of physical education and sports, researchers have basically reached a consensus, believing that "the integration of physical education and sports is a process in which the 'physical' and 'education' in the two systems and their subsystems of physical education and sports are integrated to promote the healthy development of teenagers, with the reform of the mechanism and system as the driving force and the integration of advantageous resources as the means."[5] In terms of the research on the historical background of the integration of physical education and sports, it mainly focuses on the longitudinal historical evolution and the specific background of the new era. For example, some researchers, based on the development process of both physical education and sports, have divided the relationship between physical education and sports into three stages.[6] Some researchers, standing in the background of the new era, believe that the current integration of physical education and sports belongs to the stage of deepening the reform of the integration of physical education and sports, which has many fundamental differences from the previous stages. [7] Regarding the significance of the integration of physical education and sports, some studies have pointed out that the return of sports to education is the realistic choice and inevitable destination of the integration of physical education and sports. [8] Some researchers have also expounded on the significance of the integration of physical education and sports from the perspective of value guidance. [9]

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Some researchers, based on the realistic requirements of the times, have elaborated on the practical significance of the integration of physical education and sports.[10] In terms of the system of the integration of physical education and sports, some researchers have proposed to shift from resource coupling to system coupling. [11] Some researchers have also used expert interviews and inductive analysis methods to attempt to construct a guarantee mechanism for the integration of physical education and sports to promote the healthy development of teenagers' physical fitness. [12] Some researchers have also proposed to construct a comprehensive guarantee mechanism for the integration of physical education and sports by analyzing the physical fitness of teenagers and the factors influencing their participation in sports activities. [13]

Overall, the existing research basically includes the components of the basic theory of the integration of physical education and sports, which plays an important role in promoting the deepening of theoretical research and practical development of the integration of physical education and sports. However, the scarcity of evaluation research related to the integration of sports and education still calls for continuous and in-depth theoretical research on this integration.

The second is Research on the Integration of Sports and Education from a Practical Perspective.Another theme in the research on the integration of sports and education is the practical research on this integration. This part includes clusters #3 universities, #4 implementation paths, #5 school sports, #6 physical health, #7 paths, and #11 practical paths. The practical research on the integration of sports and education can be roughly divided into two categories: one is the general discussion of practical issues of the integration of sports and education from a macro perspective, and the other is the analysis of practical cases of the integration of sports and education from a micro perspective. From a macro perspective, the research mainly focuses on how to explore the practical paths of the integration of sports and education. For example, some researchers believe that the integration of sports and education is not just the adaptation between the sports system and the education system, but also the importance of other constituent systems besides sports education should be emphasized, and the implementation path of the integration of sports and education with Chinese characteristics should be explored based on the national conditions.[14] Some researchers also put forward practical requirements and promotion strategies based on the contemporary connotation of the integration of sports and education. [15] Some researchers explore practical strategies based on the relationship between sports and education. [16] From a micro perspective, the research mainly focuses on the exploration of local practical integration of sports and education and the investigation of the implementation status in schools. The local practical integration of sports and education is represented by Shanghai, and some researchers have detailed the early exploration of the integration of sports and education in Shanghai.[17] The research on the implementation status of the integration of sports and education in schools mainly comes from the studies of the high-level sports teams of Tsinghua University and the speed skating team of Northeast Normal University. The two researchers detailed their own school's practical experience in the integration of sports and education and proposed their own ideas for the future practical integration of sports and education. [18]

Overall, the practical research on the integration of sports and education in China has enabled the basic theoretical research on the integration of sports and education to be put into practice, laying the foundation

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for the in-depth development of the research. However, the existing practical research is mainly concentrated in ordinary universities, and there are relatively few studies on primary and secondary schools and vocational colleges.

The third is Research on the Integration of Sports and Education under Policy Guidance.This part includes cluster #10 policy implementation, specifically including the development, interpretation, and implementation of policies on the integration of sports and education. In the research on the development of policies on the integration of sports and education, it mainly focuses on the promotion, comparison, and evaluation of policies. For example, some researchers have quantitatively evaluated the policies on the integration of sports and education at all levels and types in China during the "13th Five-Year Plan" period based on the PMC-AE index model, and then proposed suggestions for improving the policies on the integration of sports and education during the "14th Five-Year Plan" period. Some researchers have sorted out the evolution of China's sports-education integration policies and compared them with the evolution of Japan's school sports policies. Some researchers have focused on the interpretation of the connotation and value discussion of sports-education integration policies. For example, some researchers have explained the value guidance highlights of the "Opinions" by examining the current situation of past sports-education integration practices. Some researchers have clearly pointed out that the sports-education integration policy aims to promote the healthy development of teenagers and the cultivation of sports reserve talents. In terms of policy implementation, the research mainly focuses on how to implement the sports-education integration policy and its specific contents. Some researchers have proposed that the implementation of the "Opinions" should be linked to the relevant sports education documents in recent years and combined with the actual situation. Some researchers believe that the stakeholder theory is applicable and consistent with the promotion of the implementation of sports-education integration policies, and it is necessary to implement the collaborative governance of stakeholder subjects. In terms of specific contents, some researchers have conducted a comprehensive and in-depth analysis of the current realistic predicaments of China's physical education major, and then proposed corresponding implementation countermeasures and optimization paths. Some researchers have taken the formulation of student sports skill level standards in sports-education integration work as an example and proposed the path and methods for the formulation of levels.

Overall, the research on the integration of sports and education under policy guidance is rich in content and plays a significant role in promoting the implementation of such integration. At present, it is necessary to pay more attention to comparative studies of sports policies at the international level. Learning from others can help us improve ourselves, and strengthening multi-faceted dialogues will be highly beneficial to the research on the integration of sports and education.

2.3 Stages of Research on the Integration of Sports and Education

The "mutation intensity" of keywords can help us reveal the replacement of research hotspots in the integration of sports and education. This paper conducts a keyword mutation analysis and, in combination with the era and policy background, depicts the evolution path of research on the integration of sports and education in China. Generally speaking, the research on the integration of sports and education in China can be divided into three stages:

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The first stage (2011-2019). During this period, themes such as “development”, “athletes”, “sports management”, and “the national system” were the research hotspots. The Notice on Further Strengthening the Cultural Education and Security of Athletes issued in 2010 required that the cultural education of athletes be closely integrated with schools and be under the business leadership of the education administrative department. This indicates that ensuring the cultural education of athletes was the focus of this stage. The keyword mutations of “trinity” and “integration” suggest that people have begun to rethink the relationship between sports and education. Of course, the focus of this stage was still on the cultivation of athletes, and the integration of sports and education had not yet reached a deep level.

The second stage (2020-2023). The research hotspots in this stage were centered around “college students”, “children and adolescents”, and “the new era”, with the focus shifting from the cultivation of athletes to the cultivation of students’ sports. It began to consider the relationship between sports and education from the perspective of how to cultivate people. This is related to the emphasis on moral education and the cultivation of people since the 18th National Congress of the Communist Party of China. The release of the Notice in 2020 further sparked a research boom in the integration of sports and education. Against this background, the research on the integration of sports and education entered a prosperous development stage.

The third stage (2023-2025). The research hotspots in this stage are centered around “curriculum reform”, “ordinary colleges and universities”, and “school sports competitions”, with the focus further delving into school sports curricula and campus sports competitions. Therefore, based on the above, it can be predicted that future research on the integration of sports and education will focus on school sports and the integration of sports and education from the perspective of cultivating people.

Top 25 Keywords with the Strongest Citation Bursts

Keywords	Year	Strength	Begin	End	2011 - 2025
发展	2012	2.59	**2012**	2015	
运动员	2013	2.03	**2013**	2020	
体育管理	2013	1.75	**2013**	2021	
融合	2013	1.75	**2013**	2021	
举国体制	2018	1.83	**2018**	2020	
三位一体	2018	1.26	**2018**	2020	
青少年体育	2019	2.17	**2019**	2020	
体育教育	2017	4.42	**2020**	2021	
新时代	2020	2.36	**2020**	2022	
儿童青少年	2020	1.88	**2020**	2021	
健康发展	2020	1.73	**2020**	2021	
体育学科	2020	1.41	**2020**	2021	
改革	2012	2.3	**2021**	2022	
校园篮球	2021	1.63	**2021**	2022	
竞赛体系	2021	1.36	**2021**	2022	
大学生	2022	2.01	**2022**	2023	
swot分析	2022	1.34	**2022**	2023	
课程改革	2023	1.57	**2023**	2025	
普通高校	2023	1.57	**2023**	2025	
中国式现代化	2023	1.57	**2023**	2025	
创新路径	2023	1.57	**2023**	2025	
职业转型	2023	1.31	**2023**	2025	
学校体育竞赛	2023	1.31	**2023**	2025	
优化策略	2023	1.31	**2023**	2025	
校园体育文化	2023	1.31	**2023**	2025	

Figure 6. Mutation of Words in the Integration of Sports and Education Research

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3 Research Discussion and Prospects

Reviewing the existing research achievements on the integration of sports and education in China from both quantitative and qualitative perspectives is not only for mapping out the research landscape of this field but also for reflecting on the shortcomings and laying a solid foundation for future research. Based on this, we believe that future research on the integration of sports and education can be carried out in the following four aspects:

3.1 Emphasizing the leading role of core authors and deepening the intensity of research cooperation

Through the analysis of the author and research institution maps of the integration of sports and education, it is found that the research forces mainly come from normal universities and sports universities, and the cooperation among authors and research institutions is not prominent. The cooperation is mostly limited to colleagues and teachers-students, lacking cross-regional and cross-institutional cooperation, especially the research results from universities in the central and western regions. The integration of sports and education is a highly practical research topic, which not only requires researchers from ordinary universities but also research institutions from all regions of the country, as well as the joint efforts of scholars and teachers at all levels. Specifically, first, it is necessary to pay attention to the leading role of core authors. The core authors of the integration of sports and education research are mostly theoretical researchers from universities. Through forms such as building teams and holding academic forums and conferences, the scale of the research team can be expanded to build a bridge between theory and practice. Second, it is necessary to strengthen the academic self-awareness of the research subjects and advocate academic criticism. We should view the problems existing in the research on the integration of sports and education with a critical eye and continuously lead the innovation of this research. Third, it is necessary to carry out cross-border dialogues and strengthen collaborative exchanges. We should not only discuss the integration of sports and education from the perspectives of sports and education but also examine it from the perspectives of other disciplines to gather the strength for the research on the integration of sports and education and form an academic community for this research.

3.2 Broadening research fields and enriching research contents on the integration of sports and education

With the release of the “Notice”, the research on the integration of sports and education has shown a rapid development trend in terms of both paper quality and research scale. However, a deeper analysis reveals that the existing research is still not deep enough and some issues have not received sufficient attention. For example, the current research mainly focuses on the macro practical paths, while the research on the integration of sports and education in different types of schools is insufficient, especially the research on primary and secondary schools and vocational colleges. The existing research on the competition system of the integration of sports and education mainly focuses on the general education system, and the research on the competition system of vocational colleges is insufficient. Therefore, this paper believes that more attention should be paid to the research on policies. The policy on the integration of sports and education has

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been issued for a short time, and China has not yet formed a complete system of the integration of sports and education. Only some provinces have issued relevant supporting policies. The academic circle should strengthen the research on policies related to sports education, promote the issuance of various supporting policies by all provinces and cities, and thereby encourage researchers to pay attention to the specific contents of the integration of sports and education.

3.3 Combining qualitative and quantitative methods to improve the quality of research on the integration of sports and education

The integration of sports and education has strong contemporary and practical characteristics. The existing research achievements on the integration of sports and education are more theoretical discussions and more rely on speculative ways to construct the system of the integration of sports and education. Theory comes from practice, and practice is also the ultimate test of theoretical research. Therefore, future research should further strengthen empirical research and balance qualitative and quantitative research methods. From the current research achievements on the integration of sports and education, it is more of an interpretive or macro research on policies, and the discussion on existing problems is relatively lacking. Generally speaking, in the initial stage of a research, it often mainly relies on speculative methods. As the research deepens, more research methods will be introduced into the research. Therefore, future research on the integration of sports and education should not only strengthen empirical research but also strive to achieve complementarity among various research methods and adopt more diversified research methods.

3.4Focusing on comparison and reference to form a dialogic research ecosystem Comparative reference is an important research orientation.

The research on the integration of sports and education in China also needs to draw on relevant studies from abroad. A review of the existing comparative studies on the integration of sports and education reveals that the research ideas of the few available papers are basically from introducing foreign experiences to providing references for the research on the integration of sports and education in China. It should be noted that only a small number of articles in the sample literature involve comparative reference research and are only concentrated in the United States, Japan, the United Kingdom and other countries, with insufficient attention paid to other countries. The integration of sports and education is the latest interpretation of the relationship between sports and education, and the relationship between the two has always accompanied the development of sports work in China. Strengthening the comparative awareness is of great benefit to the research on the integration of sports and education in China. In addition, it should be pointed out that Chinese researchers should establish a local awareness, always remain rational, clearly understand the background and history of the foreign sports policy concepts, avoid superficially introducing foreign sports research work experiences, and try to seek beneficial experiences from the world around the system, evaluation and practical paths of the integration of sports and education, so as to truly achieve “a stone from another mountain can polish a jade”.

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