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Analysis of the Current Situation and Trends in Research on Comprehensive Practical Activities in Chinese Primary Schools from 2001 to 2023

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Abstract: *As an important starting point of education reform, comprehensive practical activities in primary schools play an important role in cultivating students' core competencies. However, the current status of relevant research is unclear, which cannot provide a clear direction for future research. Therefore, this study makes a visual analysis of the research content of comprehensive practical activities in primary schools in China from 2001 to 2023. The results show that: (1) The number of related articles published is extremely unstable, greatly affected by policies, and lack of self-exploration; (2) The core research team is Zhou Xing and Wei Zhipeng, and the key institutions are Beijing Normal University and Shanghai Jiao Tong University, but there is a lack of participation of social institutions and insufficient collaboration; (3) The research focus is mainly on curriculum construction and other fields, but also on teaching theme design, research travel and teaching experience; (4) The research content mainly includes labor education, practical education, project learning, interdisciplinary and key ability, and practical ability training is still the forefront of current research. The above research reveals the importance of strengthening policy support, promoting the participation of social institutions, and enhancing the collaboration of research teams, which is conducive to improving the research quality and practical effect of comprehensive practical activities in primary schools.*

Keywords: *Comprehensive practical activities, core competencies, Practical ability, Educational reform, Labor Education*

1. Introduction

Comprehensive practical activities in primary schools are a significant innovation in China's recent education reforms, enhancing students' practical experiences and essential skills like critical thinking, problem-solving, and collaboration [1, 2]. These activities reflect a shift towards experiential learning, bridging the gap between theoretical knowledge and real-world applications [3]. In April 2022, the Ministry of Education released updated guidelines emphasizing these activities to achieve broader educational goals. The guidelines focus on refining objectives, optimizing curriculum structure, providing systematic implementation guidance, and ensuring smooth transitions across educational stages. Designed to enrich the curriculum with hands-on, project-based learning, these activities foster essential life skills. Despite these advancements, comprehensive summaries and critical analyses of current research are lacking, complicating the understanding of existing trends and identifying areas for further study [4]. The diverse approaches and varying implementation levels across regions pose challenges for educators and policymakers in assessing effectiveness and developing best practices [5]. Ongoing research is needed to monitor the impact of these reforms and refine strategies in different settings. The interaction between policy directives and practical implementation requires close examination to ensure educational outcomes. This study addresses these gaps by analyzing research trends on comprehensive practical activities in primary schools from 2001 to 2023. Using visual analysis, it highlights key focus areas, main contributors, and emerging trends shaping the future of comprehensive practical education in China. The insights aim to guide future research and inform policy decisions, enhancing the quality and effectiveness of these activities in primary education. This study is crucial for developing educational practices that prepare students for the complexities of the modern world.

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2. Background of the Development of Comprehensive Practical Activities in Primary Schools

The development of comprehensive practical activities in China's primary schools has significantly evolved, mirroring broader educational reforms and societal changes. Initially supplementary to the academic curriculum, these activities are now recognized as crucial for holistic education, fostering practical skills, creativity, and social awareness. This evolution can be categorized into four stages.

2.1. Initial Sprouting Stage (Post-Founding Era)

Following the establishment of the People's Republic of China, primary education focused on academic subjects like mathematics, science, and language arts, emphasizing rote learning and foundational knowledge [6]. Extracurricular activities, including practical ones, were supplementary [7]. However, there was growing recognition of labor education for developing practical skills and work habits, reflecting societal and economic needs. The goal was to equip students with essential skills for personal development and supporting the country's economic goals. Key policy documents, such as the 1954 "Outline for Propaganda on Labor Production for Graduates of Higher Primary and Junior Secondary Schools" and the 1955 "Regulations on Extracurricular Activities in Primary Schools," emphasized the importance of labor education and extracurricular activities. These policies aimed to balance academic instruction with practical skills, preparing students for productive roles in society. This initial phase laid the groundwork for future educational reforms, establishing a holistic educational philosophy valuing both intellectual and practical skills.

2.2. Preliminary Development Stage

The Preliminary Development Stage, spanning the late 20th century, marked significant evolution in labor education within China's primary schools. This period integrated modern scientific and technological knowledge into the curriculum, reflecting national modernization and economic development goals. In 1987, the State Education Commission issued the "Teaching Outline for Full-time Primary School Labor Courses (Draft for Trial Implementation)," incorporating modern science and technology into labor education. This outline emphasized teaching traditional agricultural and industrial skills alongside emerging technologies to prepare students for a modernizing society. Subsequent policy documents reinforced this modernization. The 1992 "Curriculum Plan for Full-time Primary and Junior Middle Schools under the Nine-Year Compulsory Education System" advocated for technical education, aligning content with technological and industrial needs. In January 1996, the "Guideline for Activity-Based Courses under the Nine-Year Compulsory Education System (Draft)" emphasized activity-based learning to develop practical skills and integrate labor techniques into education. The 1995 "Education Law of the People's Republic of China" legally reinforced these policies, mandating the combination of education with productive labor and social practice. This legal requirement underscored labor education's critical role in the national strategy, aiming to develop well-rounded individuals contributing to societal and economic development [8, 9]. During this stage, curriculum reforms shifted towards a more integrated and application-oriented system, combining theoretical knowledge with practical skills to bridge the gap between education and workforce demands, aligning outcomes with a modernizing economy.

2.3. Formal Establishment Stage

The Formal Establishment Stage, beginning in June 2001, marked a pivotal moment for integrating comprehensive practical activities into China's primary education system. Key policy documents issued by the Ministry of Education during this period solidified the role of practical activities in the curriculum. The "Guideline for Basic Education Curriculum Reform (Trial)" emphasized a holistic approach, moving beyond traditional academics to include practical experiences that fostered a wide range of skills and competencies, connecting students with real-world contexts. The "Implementation Guide for 'Research-Based Learning' in General High Schools (Trial)" reinforced experiential and inquiry-based learning, relevant across all educational levels, promoting critical thinking, problem-solving, and independent learning. The "Guideline for Comprehensive Practical Activities in the National Nine-Year Compulsory Education Curriculum" provided a detailed framework for primary education, highlighting the importance of practical activities in understanding the connections between individual life, society, and the environment. These activities aimed to develop core competencies such as identity, social responsibility, problem-solving, and applying creative ideas practically, bridging theoretical knowledge with real-world practices. The guidelines emphasized aligning educational practices with societal and environmental contexts, nurturing responsible, informed, and proactive citizens. This stage marked a

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significant evolution in the educational approach, recognizing the value of practical skills and real-world engagement alongside traditional academics. It laid the foundation for further innovations and refinements in the curriculum, preparing students for future challenges and opportunities.

2.4. Standardized Development Stage

Starting around 2015, the Standardized Development Stage marked the formalization of labor education in China's primary and secondary schools. Strategic initiatives aimed to embed labor education into the national curriculum, aligning it with broader developmental goals. In August 2015, the Ministry of Education issued the "Opinions on Strengthening Labor Education in Primary and Secondary Schools," emphasizing its role in fostering moral integrity, intellectual growth, physical health, aesthetic appreciation, and innovation for students' all-around development. The 2015 "Opinions" highlighted integrating labor education into the existing curriculum through comprehensive practical and general technical courses. In September 2017, the Ministry of Education formalized this with guidelines for comprehensive practical and moral education, structuring labor education's incorporation and encouraging hands-on experiences in agriculture, industry, and internships. In 2020, the Central Committee and the State Council issued "Opinions on Comprehensively Strengthening Labor Education in the New Era," mandating labor education across all educational stages and integrating it with arts, physical, and moral education for a holistic approach. The Ministry of Education's "Guideline for Labor Education in Universities, Primary, and Secondary Schools (Trial)" detailed content, teaching methods, and requirements, emphasizing professional guidance and fostering practical skills and innovative thinking. The policy recommended labor skills competitions and training programs to prepare students for the global economy.

3. Research Methodology and Literature Collection

3.1. Literature Collection

The study utilized the China National Knowledge Infrastructure (CNKI) database as the primary source for literature on "comprehensive practical activities in primary schools" covering the period from 2001 to 2023. An initial search yielded 1,015 articles. After a rigorous process of deduplication and screening for relevance and quality, a final dataset of 982 articles was selected for in-depth analysis. This dataset provided a comprehensive overview of the research landscape in this field, enabling a robust analysis of trends and developments.

3.2. Research Methodology

The research employed knowledge mapping analysis with CiteSpace bibliometric software for visual literature analysis, chosen for its effectiveness in identifying emerging trends and key research areas. The methodology included data importation and conversion for analysis, segmentation from 2001 to 2023 into yearly intervals to identify shifts, and keyword and author analysis to pinpoint core research teams, institutions, and themes. The goal was to establish a detailed knowledge structure of research on comprehensive practical activities in primary schools, highlighting major hotspots and trends. The study also explored disciplinary evolution by examining co-authorship, citation networks, and thematic clustering. CiteSpace enabled the visualization of citation networks and keyword co-occurrence, uncovering the intellectual structure of the field and identifying established and emerging research areas. This examination provides valuable insights for educators, policymakers, and researchers, guiding future research and informing policy and practice in primary education.

4. Visualization Results

4.1. Publication Timing and Distribution

The analysis of annual publication volumes related to comprehensive practical activities in primary schools from 2001 to 2023 reveals a highly variable trend (Figure 1), with an average of approximately 43 papers published per year. Notably, there were significant surges in publication volumes in 2001 and 2017, which can be largely attributed to the release of supportive policy documents by the Ministry of Education. These peaks suggest a strong correlation between national policy directives and the academic output in this field. As the new compulsory education curriculum standards introduced in 2022 are

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expected to be fully implemented, it is anticipated that research on comprehensive practical activities will experience another phase of rapid growth, reflecting renewed scholarly interest and policy-driven initiatives.

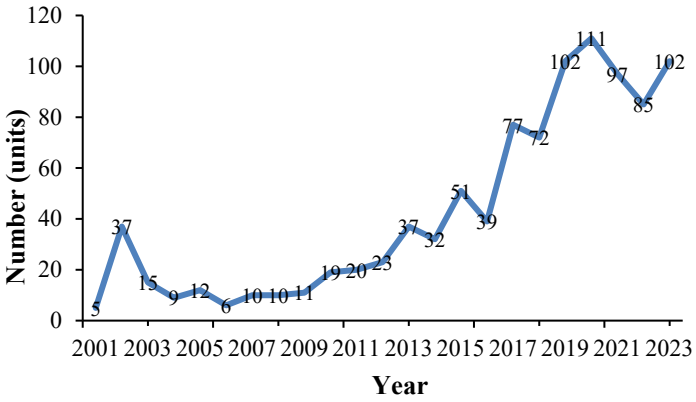

Figure 1: Trend chart of research publications on comprehensive practical activities in primary schools.

4.2. Authors and Research Institutions

Prominent academic authors are essential for the advancement of any scientific discipline, contributing significantly to high-quality research that shapes the field. Visual analysis indicates that research on comprehensive practical activities in China's primary schools is still in early collaborative development. Few research teams, led by Zhang Hua, Wan Wei, and Feng Xinrui, have made notable contributions, but overall collaboration is limited. Zhang Hua, Wan Wei, and Feng Xinrui have published 19, 12, and 11 papers, respectively, totaling 114 papers. The top 18 core authors have collectively published 512 papers, about 9.5% of the total literature, indicating an emerging but insufficiently cohesive core group. A co-authorship analysis based on author affiliations shows a forming networked structure, with the East China Normal University Institute of Curriculum and Instruction as a central hub. It has the highest publication output, followed by the Chinese Academy of Educational Sciences, Beijing Normal University's School of Education, and Central China Normal University's School of Education. Despite high outputs, significant inter-institutional collaboration is lacking, suggesting potential for greater academic synergy remains underexplored. Research is predominantly driven by higher education institutions and specialized organizations, with minimal participation from primary schools and social training organizations. This limited engagement indicates missed opportunities to broaden the research scope and integrate practical insights from diverse educational environments. Enhancing collaboration across different types of institutions could provide a more comprehensive understanding of implementing and impacting comprehensive practical activities in primary schools.

4.3. Keyword Analysis

Keywords serve as a concise summary of a paper's research focus and content, providing valuable insights into the prevailing trends and emerging directions in a particular academic field. By analyzing and interpreting the frequency and co-occurrence of keywords, researchers can gain a deeper understanding of the forefront of research in comprehensive practical activities in primary education.

(1) Keyword Co-occurrence

An analysis of keyword frequency reveals a diverse range of research themes within the field. The term "core competencies" emerged as the most frequently occurring keyword, appearing 37 times, underscoring its central role in the cultivation of skills and abilities in primary education (Table 1). This emphasis reflects the importance of developing core competencies in students, which are critical for their overall growth and the successful implementation of comprehensive practical activities. Following "core competencies," other frequently mentioned keywords include "subject curriculum" (28 occurrences), "school-based curriculum" (23 occurrences), and "comprehensive practical activities" (21 occurrences). These terms highlight the focus on curriculum development and the integration of practical activities within the educational framework. The centrality metric, which measures the connectedness of keywords within the network, indicates that "core competencies" also has the highest centrality score of 0.94, suggesting it is a pivotal concept that is closely related to other keywords in the research landscape.

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"Subject curriculum," "school-based curriculum," and "comprehensive practical activities" have centrality scores of 0.74, 0.55, and 0.11, respectively, indicating varying degrees of influence and connectivity within the network. The analysis further reveals a broad scope of research topics related to comprehensive practical activities. Researchers have explored a wide array of issues, including primary curriculum development, educational tours, instructional design, labor education, and teacher training. However, the appearance of high-frequency keywords is notably concentrated in two periods: 2002-2005 and 2016-2017. Since 2017, there has been a lack of new high-frequency keywords, suggesting that while a mature and stable research framework and content system have been established, the field is still heavily influenced by policy directives and lacks a robust path for self-directed exploration and innovation.

Table 1: Keyword frequency and centrality statistics overview.

No.	Frequency	Centrality	First Appearance	Keyword
1	37	0.94	2016	Core Competencies
2	28	0.74	2001	Subject Curriculum
3	23	0.55	2004	School-based Curriculum
4	21	0.11	2004	Practical Activities
5	21	0.08	2001	Primary and Secondary Schools
6	19	0.02	2002	Instructional Design
7	19	0.03	2017	Educational Tours
8	17	0.01	2004	Curriculum Reform
9	17	0.01	2005	Labor Education
10	15	0.01	2002	Teacher Training
11	14	0.01	2002	Teaching Experience
12	13	0.02	2002	Curriculum
13	11	0.01	2005	Curriculum Implementation
14	11	0.01	2002	Instructional Design

Table 2: Keyword clustering of research on comprehensive practical activities in primary schools (2001-2023).

No.	Cluster Size	Silhouette Score	Average Year	Keywords	Cluster Name
0	39	0.997	2013	Guidelines; Core Competencies; Theme Interpretation; Compulsory Education	Primary and Secondary Schools
1	27	1	2008	Implementation; Information Technology; Objectives; Content	Issues
2	23	0.946	2013	Integrated Practice; Values; Public Participation; Flipped Classroom; Inquiry-based	Comprehensive Practical Activities
3	21	0.967	2008	Local Curriculum; Three-level Curriculum Management; Lifelong Learning; Local Characteristics	School-based Curriculum
4	19	1	2006	Subject Curriculum; Subject Areas; Famous Teacher Project; Traditional Chinese Culture; Confucian Classics	Subject Curriculum
5	16	1	2002	Experimental Teachers; Concepts and Practice; Teaching Segments; Experimental Area	Teaching Experience
6	14	1	2012	Basic Education; Activity Curriculum; Curriculum Implementation; Extracurricular Activities	Curriculum Reform
7	13	0.988	2017	Study Tours; Practical Education; Implementation Pathways; Cultural Perspective; Deep Learning	Educational Tours
8	13	0.976	2002	Nature of Subjects; Mathematics; History and Society; Collaborative Efforts	Instructional Design
9	11	0.99	2006	Innovation Capability; Methods; Principles; Surrounding Environment	Thematic Design
10	8	0.964	2009	Popular Culture; Language Teaching; Three-Yuan Teaching; Nanyou Primary School	Curriculum Resources

(2) Keyword Network Clustering

To gain a more nuanced understanding of the thematic clusters within the research on comprehensive

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practical activities, an analysis was conducted using 11 primary clusters identified through network clustering. These clusters include: #0 Primary and Secondary Schools, #1 Issues, #2 Comprehensive Practical Activities, #3 School-based Curriculum, #4 Subject Curriculum, #5 Teaching Experience, #6 Curriculum Reform, #7 Educational Tours, #8 Instructional Design, #9 Thematic Design, and #10 Curriculum Resources (Table 2). The clustering results indicate that research in this field is predominantly concentrated on issues related to the development of primary school curricula. The clusters reveal that significant attention is given to the design and implementation of school-based and subject curricula, with particular emphasis on how these can be reformed to better integrate practical activities. Additionally, there is substantial interest in the resources required to support these curricula and the methods for effectively implementing educational reforms. Beyond curriculum development, other areas of focus include instructional design-particularly thematic design, educational tours, and teaching experience. These elements are crucial for providing students with hands-on learning opportunities that enhance their practical skills and reinforce the theoretical knowledge gained in traditional classroom settings. The clustering analysis also highlights the interdisciplinary nature of research in comprehensive practical activities, intersecting with fields such as pedagogy, curriculum studies, educational policy, and teacher education. This interdisciplinary approach is essential for developing a holistic understanding of how practical activities can be integrated into primary education to support the development of well-rounded students.

5. Research Progress and Hotspots

5.1. Analysis of Emerging Keywords

The emergence of keywords refers to the rapid increase in the frequency of certain terms, indicating new research trends. Analyzing these keywords provides insight into the evolution of research hotspots and helps predict future trends. As shown in Figure 2, keyword emergence strength varies, with most keywords showing low intensity. Notable periods for new keywords were 2002-2007 and 2017-2020, indicating concentrated research bursts. Keywords with significant emergence over more than five years were mainly from before 2017, establishing main research hotspots between 2003 and 2017. In 2018, research topics diversified, with significant trends including "core competencies" (13.9), "labor education" (8.1), "educational tours" (8.02), "comprehensive practice" (5.79), and "experimental zone" (5.37). Terms like "labor education," "practical education," "project-based learning," and "core competencies" gained prominence starting in 2019 and continued through 2023, highlighting a focus on practical skills development. "Educational tours," significant since 2017, reflect the emphasis on experiential learning, combining travel with educational goals to broaden students' perspectives and understanding of social ethics.

5.2. Keyword Temporal Zone Analysis

Temporal zone analysis provides a systematic view of the evolution of research themes over time, highlighting the distinct phases of development in comprehensive practical activities research. This analysis divides the research history into three main phases:

Phase 1 (2000-2006): This initial phase was characterized by rapid growth in research output, largely driven by policy initiatives, including the Ministry of Education's release of foundational documents related to basic education reform and comprehensive practical activities in June 2001. Research during this phase focused heavily on curriculum development, teacher training, and specific aspects of educational practice, such as subject curricula, school-based curricula, curriculum implementation and reform, teaching experiences, and experimental teaching methods.

Phase 2 (2007-2016): This phase marked a period of decline and stagnation in research activity, attributed to the diminished impetus from national policies. The number of publications and overall interest in the field waned, presenting unprecedented challenges to the continuation and expansion of research. During this time, the research focus broadened to include more diverse aspects such as school-based curricula, subject curricula, and curriculum resources, while also beginning to explore comprehensive practices, overall student competencies, and core competencies.

Phase 3 (2017-2023): A resurgence in research activity characterized this phase, with a notable increase in both the application of practical skills and interdisciplinary approaches. This renewed interest was catalyzed by the implementation of the Ministry of Education's guideline on comprehensive practical activities in September 2017, which reinvigorated the field. The research focus expanded to cover a wider

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array of topics including activity-based courses, practical education, labor education, project-based learning, interdisciplinary studies, and core competencies. The updated compulsory education curriculum standards introduced in 2022 further emphasized the importance of these activities, mandating their integration starting from the first grade and separating information technology and labor education from the broader category of comprehensive practical activities.

These curricular changes significantly elevated the status of comprehensive practical activities in compulsory education, highlighting their critical role in fostering well-rounded development. Future research is expected to focus more on the practical application and assessment of these activities' educational outcomes. Emphasis will likely increase on integrating practical activities with other academic disciplines to enhance overall student learning quality and effectiveness. This holistic approach aims to better equip students with the skills and competencies needed to navigate a complex and rapidly changing world.

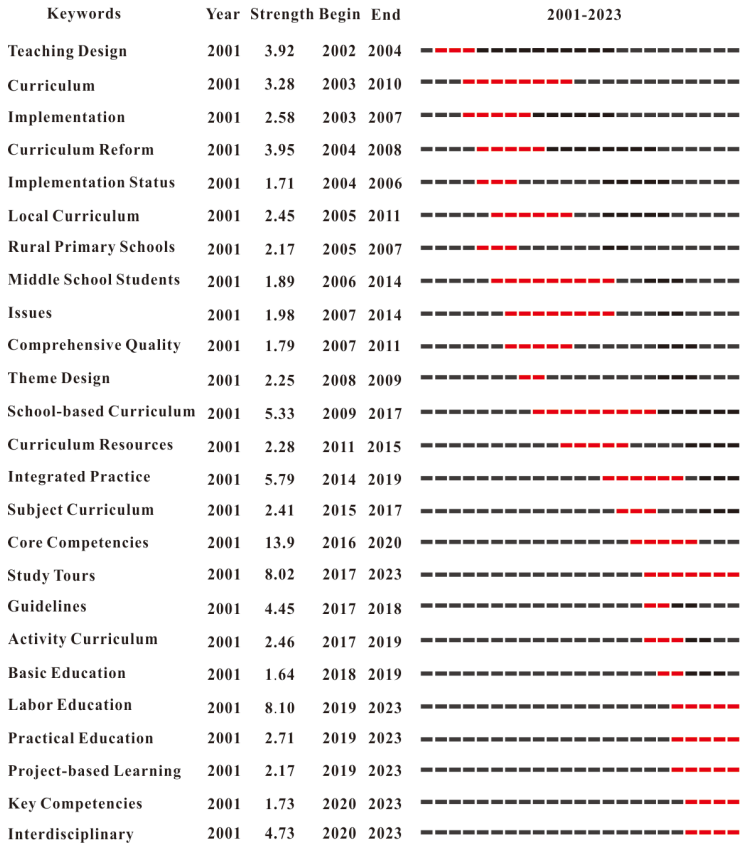

Figure 2: Emergent keywords map of research on comprehensive practical activities (2001-2023).

6. Conclusion

This study analyzed recent progress and trends in comprehensive practical activities in primary education, revealing key insights. The research framework remains unstable with inconsistent structures and focus areas, indicating a need for cohesive strategies. A core research community has not yet formed; most studies originate from higher education and specialized organizations, with little involvement from social institutions and grassroots education, hindering sustainable development. Research primarily focuses on curriculum development and practical skills, including school-based and subject-specific curricula, thematic teaching design, educational tours, and instructional experiences. Key areas include labor education, practical education, project-based learning, and critical competency development, emphasizing practical skills' importance. The field is highly sensitive to policy changes, which often drive research directions, limiting independent exploration and innovation. Despite significant advancements, challenges persist. A stable research framework, interdisciplinary collaboration, and diverse stakeholder engagement are essential. Future research should balance policy-driven directives with independent inquiry to foster a dynamic and innovative environment.

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