Edelweiss Applied Science and Technology
ISSN: 2576-8484
Vol. 9, No. 6, 95-106
2025
Publisher: Learning Gate
DOI: 10.55214/25768484.v9i6.7757

A bibliometric analysis of dance education's impact on children's social skills and physical health

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Abstract: This study presents a comprehensive bibliometric analysis of dance education research from 2003 to 2024, focusing on its implications for children's physical development and social skills. Drawing on 622 publications indexed in the Web of Science database, the research employs CiteSpace 6.1 to map knowledge structures, identify influential authors, institutions, and countries, and analyze keyword co-occurrence and citation bursts. The findings highlight a growing scholarly interest in dance education, with significant contributions from the United States, Brazil, and the United Kingdom. Notably, keywords such as "children," "physical activity," and "health" dominate the discourse, reflecting the field's emphasis on developmental outcomes. Co-authorship and institutional network analyses reveal strong collaborative patterns, particularly involving researchers like Caroline Brand and institutions such as the Universidade Federal do Rio Grande do Sul. The study underscores dance education's multifaceted role in promoting motor coordination, emotional regulation, and social competencies. It also identifies research gaps, including the need for longitudinal studies and greater integration of technology-enhanced dance interventions. This analysis provides a visual and data-driven foundation for future investigations and policy-making in dance education and child development.

Keywords: *Bibliometric analysis, Children's physical development, CiteSpace, dance education, Physical activity, Social skills.*

1. Introduction

In the last fifty years, researchers have demonstrated that physical inactivity or poor fitness significantly adversely affects health across the lifetime [1]. Health professionals advise that school-aged children should engage in a minimum of 60 minutes of daily moderate-to-vigorous physical activity or attain specific step counts per day (15,000 steps for boys and 12,000 steps for girls; [2]. Despite the extensive documentation of the physical and mental health advantages of regular physical activity (PA) participation [3] it is estimated that merely 23% of school-aged children achieve the minimum recommended activity levels, with a noted decline in children's PA as they age [4].

There is also evidence that health behaviors are associated with social skills in school-aged children [5]. School students are in the intermediate phase of adolescent development, characterised by specific developmental tasks and the exhibition of attitudes and social behaviours, including responsibility, active participation in social activities, the expansion of social relationships with peers, and the ability to collaborate in groups Putro [6]. Minshih [7] asserted that a student is an individual possessing significant potential that requires cultivation. A developmental task for pupils is the ability to engage with their environment, which can help foster strong social skills. Social skills pertain to the capacity for self-expression in social interactions, comprehension of diverse social contexts, and resolution of issues related to interpersonal relationships Riggio and Reichard [8]. Lynch and Simpson [9] elucidated that social skills are behaviours that facilitate positive interactions with peers in a certain situation. These behaviours include empathy, engagement in group activities, communication, and problem-solving [10].

History: Received: 26 March 2025; Revised: 2 May 2025; Accepted: 6 May 2025; Published: 2 June 2025
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Dance is widely regarded as a highly pleasurable [11] varied, and adaptable [12] type of physical activity. Thus, dance has the ability to promote healthy and sustained physical activity across the lifetime, as well as to be inclusive of a wide range of health issues. Dance is broadly defined as moving one's body rhythmically to music, usually for artistic or emotional expression. It can be trained and performed alone, in a couple, or in a group, and frequently contains a planned pattern of movement with aesthetic value and necessitates some level of physical or technical proficiency. As a psychosocial tool for children's growth, dance education can also help them comprehend themselves and their surroundings [13]. Dancing can ensure an individual's social skills and independence. It is an essential way of interacting with others and is inextricably linked to human existence, despite the fact that it has undergone several changes over the years to reflect the ideals of each community [14]. Dance is a valuable instructional tool that may be tailored to children's cognitive, physical, and emotional development [15].

Existing literature demonstrate that physical health and social skills among children have recently gained significant relevance, making how to improve them a key objective. The findings are mixed. For example, a recent work by Cosma, et al. [16] suggests that dance education can positively influence children's motor skills and peer interactions by enhancing their physical coordination and promoting cooperative behaviors. Kronsted and Gallagher [17] find that structured physical activities, such as dance, can improve not only physical fitness but also psychosocial outcomes, particularly in enhancing children's empathy and problem-solving abilities. However, other studies have reported more modest or inconsistent results, with Dos Santos, et al. [18] indicating that the benefits of dance interventions on social skills may vary based on age, socioeconomic background, and the context of the intervention.

Against this background, several studies have made progress in profiling the literature on the relationship between dance education and children's developmental outcomes. Various angles have been presented in the analysis, including the role of dance in fostering cognitive skills, emotional regulation, and social integration. Despite a wide range of publications linked to the benefits of dance education, the overall structure of this body of literature is highly sparse. Gaps remain, particularly in terms of longitudinal studies that explore the sustained impact of dance over time and comparative studies that differentiate dance from other forms of physical activity in terms of its unique contribution to children's development. These inconsistencies highlight the need for more rigorous, well-designed studies that can address these limitations and provide clearer insights into the role of dance in fostering both physical health and social competencies among children.

Furthermore, there is a lack of comprehensive research on using CiteSpace to analyze the impact of dance education on children's physical development and social skills in the literature. CiteSpace was utilized to provide a systematic and objective overview of the research on dance education's role in children's physical health and social skills. By using CiteSpace, this paper presents a visual analysis that provides more available and valuable research to future studies on dance education research. The research assessed is that published in the journals of the Web of Science from 2003 to 2024 by means of a scientometric analysis based on CiteSpace 6.1. Specifically, the research is guided by the following key goals. The first one is to assess the current research on dance education with mapped knowledge; objectively reveal the journals, countries, and authors; and deepen the knowledge on the highly quoted literature and hot topics in this field. Another one is to analyze the keywords that represent the shift in the studies and identify future opportunities to extend research, widen the horizon and thinking on dance education and children's physical development and social skills, and provide references and lessons for the relevant research in this field.

2. Literature Review

There is increasing recognition that physical activity is an important determinant of neurological function in middle childhood, in addition to a variety of other physiological and psychosocial benefits Engelhardt, et al. [19]. Oliveira, et al. [20] provide evidence that school-aged children should engage in at least 60 minutes of moderate-to-vigorous physical activity daily. However, a study by McCarthy, et

Edelweiss Applied Science and Technology
ISSN: 2576-8484
Vol. 9, No. 6: 95-106, 2025
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al. [21] highlights a concerning trend: only about 8% of school-aged children meet these recommended activity levels, with a decline in activity as children age. This establishes a critical foundation for exploring targeted interventions, like dance education, which could potentially increase physical activity engagement among children.

Dance is recognized as a highly adaptable and enjoyable physical activity. According to Jago, et al. [22] and Liu, et al. [23] dance encompasses a variety of styles and formats that can appeal to a wide demographic, making it an inclusive option for physical education. The inherent pleasure and varied nature of dance can motivate sustained participation, which is vital for instilling long-term healthy habits in children. Dance education extends beyond physical development; it is also a powerful tool for enhancing social skills. As children navigate the complex social landscapes of school and peer interactions, dance can serve as a medium for teaching empathy, cooperation, and problem-solving. Studies by Masadis, et al. [24] and Bégel, et al. [25] have noted that engaging in dance activities can improve children's ability to work in teams, communicate effectively, and understand social cues—all essential skills for healthy adolescent development.

The physical benefits of dance are well-documented, ranging from improved motor skills and physical fitness to enhanced cardiovascular health. While dance education has been extensively explored in terms of its benefits for physical and social development in children, there is a notable gap in the application of bibliometric and scientometric methods to consolidate and visualize the existing research landscape. Most studies utilize traditional narrative review methods, which may not adequately capture the breadth and depth of the field, nor provide a quantifiable analysis of trends, gaps, and network relationships among studies.

To remain informed about contemporary trends, it is essential for researchers to possess a comprehensive understanding of significant journals within their field, impactful articles, prominent scholars, and the progression of their discipline. A comprehensive understanding of the topic requires an extensive thematic review of the relevant literature [26]. This study employs bibliometric analysis to examine scholarly publications from 2003 to 2022, encompassing nearly two decades of research output. This review study specifically focused on addressing the following research questions:

RQ1: What are the trends in annual publications within this particular field of study?

RQ2: Who are the prominent contributors in this field, including authors, institutions, and countries?

RQ3: What constitutes the intellectual framework of this discipline, particularly in relation to keywords and bibliographic coupling?

RQ4: What prospective avenues for future research might serve to augment the existing body of literature?

3. Method

Knowledge mapping signifies a modern progression in the field of scientific metrology and constitutes an interdisciplinary subject that integrates applied mathematics, information science, and computer science. To efficiently perform knowledge discovery, it is essential to extract and graphically reorganise information from a substantial body of existing scientific research [27]. Utilising these strategies enables an understanding of the issue, promoting in-depth insights and advancing progress in the discipline. According to Persson [28] citations signify the research frontier, whereas the cited sources constitute the knowledge base from a bibliometric perspective. Chen [29] asserts that the intellectual basis comprises the co-citation network established by the referenced classical literature.

To effectively gather and analyze the existing literature on dance education's impact on children's social skills and physical health, this study employed the Web of Science (WoS) as the primary database. The selection of WoS was based on its comprehensive coverage of high-quality, peer-reviewed journals and its robust indexing which facilitates precise retrieval of relevant literature. The data collection process commenced with a structured search using specific keywords such as "dance education",

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"children's social skills", and "physical health". The search was confined to articles published between 2004 and 2024 to capture contemporary research trends. Totally, there were 622 articles collected.

This study employed CiteSpace, a bibliometric tool developed by Professor Chaomei Chen, to conduct a bibliometric analysis of the published research. This instrument enabled the graphical depiction of the findings, improving visual understanding and interpretation of the data. CiteSpace, a citation visualisation analysis software, has developed as a significant tool that utilises scientometrics and knowledge visualisation fields. The primary aim is to reveal implicit information contained in scientific texts. This program enables researchers to comprehend fundamental knowledge about a certain issue, recognise seminal works in the field, uncover new research areas, and understand the historical evolution of research development [30].

CiteSpace may transform research domain notions into mapping functions that link research frontiers with intellectual underpinnings. Within this mapping function framework, three fundamental concepts have been established, each tackling specific challenges: (a) defining the characteristics of the research frontier, (b) annotating the research domain, and (c) recognising emergent trends and temporal shifts. The extensive use of CiteSpace is apparent, with users from more than 100 countries and a remarkable publication total of fifteen thousand scholarly outputs derived from the deployment of CiteSpace.

4. Result and Discussion

4.1. Research Yield

The publication trends (Figure 1) in dance education research reveal a significant expansion in scholarly output over the years, as illustrated by the ascending trajectory in the number of articles published annually. The surge in publications, particularly noticeable from 2008 onwards, reflects an enriched engagement with the subject matter, likely spurred by broader educational and health policy shifts that recognize the multifaceted benefits of integrating dance into youth development programs [31].

Discussion on these trends indicates that the field is responding to a critical need for innovative approaches to enhance children's health and social skills through enjoyable and inclusive physical activities. The peaks observed in publication numbers in recent years, such as 2021 and 2024, suggest a robust response to emerging evidence and possibly to global health challenges that emphasize the need for physical activity. Despite the increasing volume of research, the line graph also points to variability in research output, which may be influenced by factors such as changes in funding priorities, shifts in scholarly interest, or the impact of global events on academic productivity.

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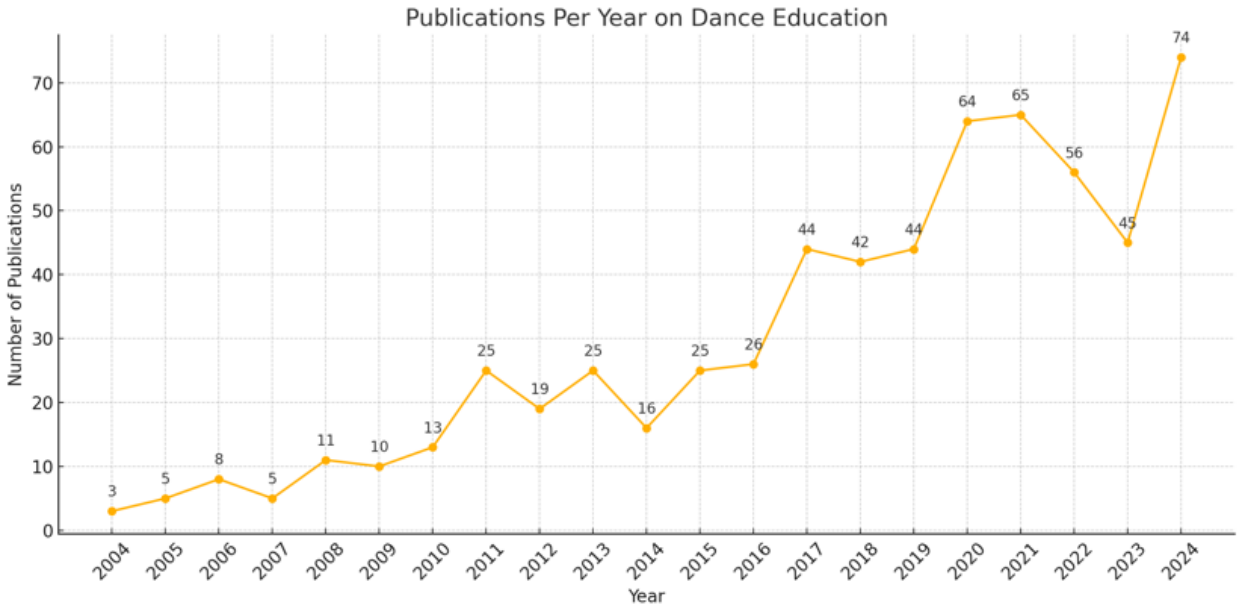

Figure 1.
Publication per year on dance education.

4.2. Co-author Network

The co-author network map (Figure 2) visualized in CiteSpace highlights the collaborative dynamics within the field of dance education research. Caroline Brand emerges as a central node, indicating her prominent role in fostering collaborations across the network. Her extensive links with other researchers suggest that she might be involved in a variety of projects, potentially acting as a bridge in disseminating new methods or findings across different research groups. Similarly, Gaya and Mota [32] are depicted with strong interconnections, highlighting their active participation in collaborative research that might span various aspects of dance education, from its impact on physical health to its role in social development.

The presence of other interconnected authors such as Duncan, et al. [33] further illustrates a robust network of collaborations. These connections are indicative of a cohesive community where knowledge exchange is facilitated through joint research endeavors.

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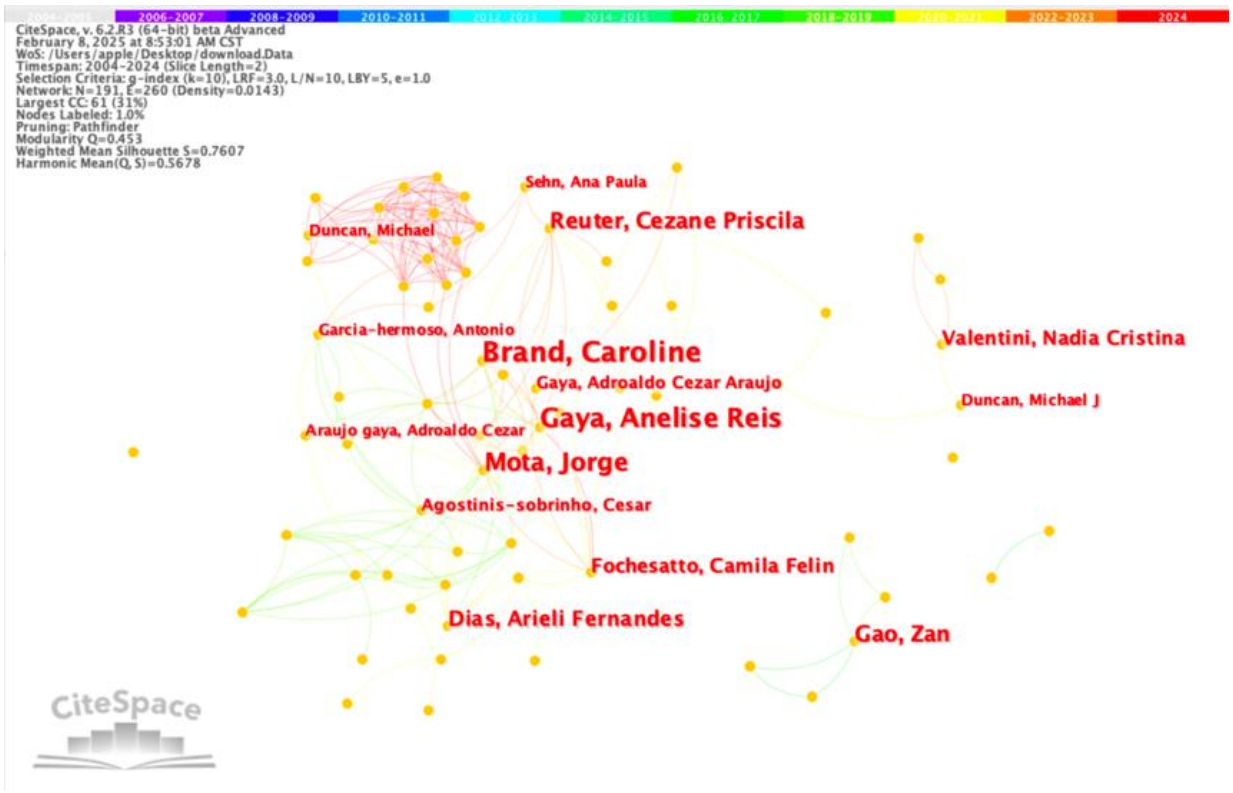

Figure 2.
Co-author map.

4.3. Co-institute Network

The institutional contributions to dance education research present the volume of research publications and the centrality within the research network for each institution, providing insights into their influence and connectivity. Institutions like the Universidade Federal do Rio Grande do Sul lead with a high volume of 77 publications and a notable centrality of 0.17 in 2013, indicating a strong influence within the research community during that period. In contrast, the Universidade do Porto not only contributed 33 publications in 2018 but also exhibited the highest centrality of 0.21, underscoring its role as a central node in the network, facilitating significant scholarly communication and collaboration.

Further analysis shows that the University of Minnesota had consistent contributions in 2006 with 17 publications each from its Twin Cities and System campuses, although with a lower centrality of 0.03, suggesting a more isolated or specialized research focus within the broader field.

On the international stage, institutions like Deakin University in Australia also stand out with a centrality of 0.18 in 2011, alongside 10 publications, highlighting its impactful presence in the network. Conversely, the Pontificia Universidad Católica de Chile, with a centrality of only 0.002 in 2022 despite contributing 13 publications, might indicate emerging connectivity within the network or a focus on niche areas of dance education research.

The variance in centrality and publication numbers across institutions suggests potential areas for enhanced global collaboration. Institutions with high centrality but lower publication numbers could be leveraged as strategic partners to boost research output and global dissemination in underrepresented regions. The centrality metrics can guide funding bodies and academic policymakers in targeting investments towards institutions that either hold central roles in the network or show potential for

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increased global impact. Supporting institutions like the Universidade do Porto could further enhance their role as international research hubs.

Table 1.
Top 10 institutions with most publication.

	Number	Centrality	Year	Institutions
1	77	0.17	2013	Universidade Federal do Rio Grande do Sul
2	33	0.21	2018	Universidade do Porto
3	25	0.17	2020	Universidade de Santa Catarina
4	17	0.03	2006	University of Minnesota Twin Cities
5	17	0.03	2006	University of Minnesota System
6	15	0.08	2006	California State University
7	15	0.11	2012	University System of Ohio
8	13	0.01	2020	Coventry University
9	13	0.002	2022	Pontificia Universidad Católica de Chile
10	10	0	2012	University of Illinois System

4.4. Keywords Co-occurrence

The analysis of keyword co-occurrence within the field of dance education research reveals a rich thematic landscape with keywords forming nine distinct clusters (Figure 3). The keyword with the highest frequency is "children", appearing 187 times, indicating a strong focus on this demographic. Following closely are "physical activity" and "health" with 129 and 85 occurrences, respectively, underscoring the significant emphasis on the physical aspects and benefits of dance education. Other notable keywords include "adolescents" and "youth", highlighting a focus on younger populations, while "obesity", "education", "exercise", "fitness", and "overweight" reflect the health-related concerns addressed through dance education.

The clusters formed by these keywords, such as "physical education", "cardiorespiratory fitness", "performance", "active video games", "down syndrome", "school recess", "measurement", "muscular strength", and "screen time", represent diverse research dimensions within dance education. Each cluster addresses different aspects of how dance education impacts various health and educational outcomes.

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ISSN: 2576-8484
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Figure 3.
Keywords cluster.

Figure 4 highlights the top 9 keywords with the strongest citation bursts in dance education research from 2004 to 2024, indicating surges in scholarly interest and research focus over specific periods. The keyword "overweight" shows the most extended and strongest burst from 2010 to 2019, reflecting a significant focus on the relationship between dance and managing or reducing overweight issues. This is followed by keywords such as "dance", which had a burst from 2012 to 2017, and "self-determination theory", peaking between 2012 and 2017, suggesting an interest in motivational aspects within dance education contexts. Other notable bursts include "active video games" from 2014 to 2019, highlighting the intersection of technology and physical activity, and "autism spectrum disorder" from 2022 to 2024, pointing towards a recent focus on dance education as a beneficial activity for individuals on the autism spectrum.

Top 9 Keywords with the Strongest Citation Bursts

Keywords	Year	Strength	Begin	End	2004 - 2024
overweight	2010	4.58	2010	2019	
patterns	2010	3.45	2010	2013	
dance	2012	4.05	2012	2017	
energy expenditure	2013	3.66	2013	2015	
self determination theory	2012	3.6	2012	2017	
active video games	2011	3.91	2014	2019	
experiences	2014	3.15	2014	2017	
autism spectrum disorder	2017	3.56	2022	2024	
teachers	2022	3.29	2022	2024	

Figure 4.
Top 9 keywords with strongest citation bursts.

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4.5. Co-country Network

The bibliometric analysis reveals a notable hierarchy in the contributions and collaborative patterns among various countries to the field of dance education. The United States stands out with the highest number of publications, totaling 265, indicating its dominant role in dance education research. Despite this high output, the details on the extent of its international collaborations were not highlighted, suggesting that while prolific, the U.S. might be conducting a substantial amount of its research internally. Brazil, with 116 publications, ranks second in terms of research output. However, it has fewer international collaborations compared to other countries with a similar volume of research. This could imply a strong national focus or a developing stage in international research partnerships in the field of dance education within Brazil.

England, holding the third position, has produced 70 publications and shows a more connected profile. It has notable connections with Poland and Germany, indicating active cross-border collaborations that likely enrich the research outcomes through diverse academic and cultural perspectives. China, with 54 publications, appears fourth in the list. Like Brazil, China shows fewer connections in the international research community, which could reflect a focus on developing a localized research agenda or emerging engagement with the global academic community. Australia rounds out the top five, demonstrating collaboration particularly with Canada and England. This indicates not only a healthy output of research but also an active participation in the international dialogue, which might be facilitated by shared language and cultural ties that ease collaboration.

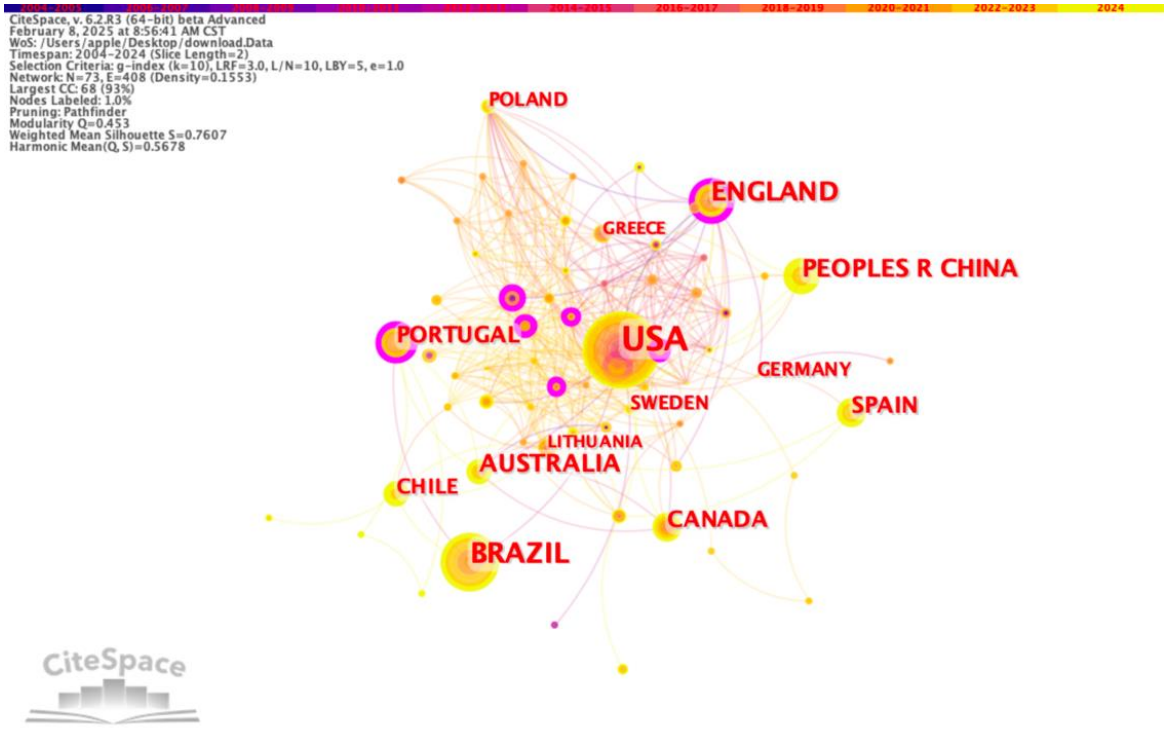

Figure 5.
Visualization of co-country network.

5. Conclusion

The current study analyzed the dance education research, utilizing data from publications, citations, and keyword co-occurrence, and addressed the four research questions posited at the outset.

The trends in annual publications indicate a steady increase in research output over the years, with notable spikes in specific periods that align with heightened interest or emerging themes within the field. This upward trend reflects growing academic and practical interest in the benefits and applications of dance education, particularly in relation to physical health and social development.

Individuals like Caroline Brand and Gaya and Mota [32] emerged as significant contributors, frequently collaborating across networks and contributing to influential research. Leading institutions include the Universidade Federal do Rio Grande do Sul and Universidade do Porto, which not only contributed high volumes of research but also held central roles in the scholarly network, facilitating substantial collaborations. The United States, Brazil, and the United Kingdom were identified as leading contributors, each playing crucial roles in advancing the research and dissemination of knowledge in dance education.

The intellectual framework of dance education research is richly layered, encompassing a wide range of topics from physical health impacts to psychological and educational outcomes. Keywords like "children," "physical activity," and "health" dominated the discourse, highlighting the field's focus on promoting well-being and educational benefits. Bibliographic coupling and keyword analysis revealed a robust intellectual structure supported by theories such as self-determination theory and practical approaches like active video games, indicating a diverse and interdisciplinary approach.

Further studies could focus on the inclusivity of dance education, particularly for underserved or special needs populations such as individuals with autism spectrum disorder. Researchers should investigate the integration of technology in dance education, such as the use of active video games and virtual reality, to enhance engagement and learning outcomes. Studies that evaluate the effectiveness of policy implementations in schools and community programs could provide insights that support adoption and optimization of dance programs.

Transparency:

The authors confirm that the manuscript is an honest, accurate, and transparent account of the study; that no vital features of the study have been omitted; and that any discrepancies from the study as planned have been explained. This study followed all ethical practices during writing.

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References

[1] F. B. Ortega, J. R. Ruiz, M. J. Castillo, and M. Sjöström, "Physical fitness in childhood and adolescence: A powerful marker of health," *International Journal of Obesity*, vol. 32, no. 1, pp. 1–11, 2008. https://doi.org/10.1038/sj.ijo.0803774

[2] C. Tudor-Locke, J. J. McClain, T. L. Hart, S. B. Sisson, and T. L. Washington, "Expected values for steps/day in special populations," *International Journal of Behavioral Nutrition and Physical Activity*, vol. 6, no. 1, p. 86, 2009. https://doi.org/10.1186/1479-5868-6-86

[3] A. Ströhle, "Physical activity, exercise, depression and anxiety disorders," *Journal of Neural Transmission*, vol. 116, no. 6, pp. 777–784, 2009. https://doi.org/10.1007/s00702-008-0092-x

[4] M. S. Tremblay *et al.*, "Systematic review of sedentary behaviour and health indicators in school-aged children and youth," *International Journal of Behavioral Nutrition and Physical Activity*, vol. 11, no. 1, p. 98, 2014. https://doi.org/10.1186/1479-5868-11-98

[5] V. Carson *et al.*, "Systematic review of the relationships between physical activity and health indicators in the early years (0–4 years)," *BMC Public Health*, vol. 16, no. 1, pp. 1-20, 2016. https://doi.org/10.1186/s12889-016-3383-7

[6] A. Putro, "Adolescent development and social behavior: A study of intermediate phase students," *Journal of Child and Adolescent Psychology*, vol. 5, no. 1, pp. 78-90, 2017.

[7] I. Minshih, "Student development and social skills acquisition in education," *Journal of Educational Development*, vol. 3, no. 2, pp. 45-53, 2016.

[8] R. E. Riggio and R. J. Reichard, "The emotional and social intelligences of effective leadership: An emotional and social skill approach," *Journal of Managerial Psychology*, vol. 23, no. 2, pp. 169–185, 2008. https://doi.org/10.1108/02683940810850808

[9] M. Lynch and C. G. Simpson, "Social skills: Definitions, assessment, teaching strategies, and behavioral considerations," *Intervention in School and Clinic*, vol. 45, no. 5, pp. 273–281, 2010. https://doi.org/10.1177/1053451210367780

[10] J. M. Dollar, K. Kmetz, D. Wheeler, and M. J. Furlong, "Promoting social-emotional competencies in middle school students: A multi-tiered approach to school climate and positive behavior support," *Psychology in the Schools*, vol. 55, no. 6, pp. 654–668, 2018. https://doi.org/10.1002/pits.22128

[11] R. Jago, K. L. Drews, J. D. Otvos, S. M. Willi, and J. B. Buse, "Novel measures of inflammation and insulin resistance are related to obesity and fitness in a diverse sample of 11–14 year olds: The HEALTHY Study," *International Journal of Obesity*, vol. 40, no. 7, pp. 1157-1163, 2016. https://doi.org/10.1038/ijo.2016.60

[12] P. Hwang and T. Braun, "Physical activity patterns and health outcomes in children: The role of dance," *Journal of Physical Activity and Health*, vol. 12, no. 3, pp. 369–375, 2015. https://doi.org/10.1123/jpah.2013-0302

[13] C. Cherriere, A. Janthia, and M. Cherriere, "The impact of dance on psychosocial development in children," *Journal of Dance Education*, vol. 19, no. 4, pp. 160–169, 2019. https://doi.org/10.1080/15290824.2019.1611534

[14] M. Wall and S. Murray, "Dance, culture, and society: An introduction," *Dance Research Journal*, vol. 26, no. 1, pp. 1–10, 1994. https://doi.org/10.2307/1478692

[15] F. Venetsanou and M. Leventis, "Dance as a tool for enhancing cognitive and physical development in children," *Early Childhood Development and Care*, vol. 180, no. 8, pp. 1097–1108, 2010. https://doi.org/10.1080/03004430903414699

[16] G. Cosma, M. Dragomir, R. Dumitru, E. Lică, and R. Gheţu, "The dance impact on the motor ability in children," *Ovidius University Annals, Series Physical Education and Sport/Science, Movement and Health*, vol. 16, no. 2 Suppl, pp. 382–386, 2016.

[17] C. Kronsted and S. Gallagher, "Dances and affordances: The relationship between dance training and conceptual problem-solving," *Journal of Aesthetic Education*, vol. 55, no. 1, pp. 35–55, 2021. https://doi.org/10.5406/jaesteduc.55.1.0035

[18] G. C. Dos Santos, J. do Nascimento Queiroz, Á. Reischak-Oliveira, and J. Rodrigues-Krause, "Effects of dancing on physical activity levels of children and adolescents: A systematic review," *Complementary Therapies in Medicine*, vol. 56, p. 102586, 2021. https://doi.org/10.1016/j.ctim.2020.102586

[19] L. E. Engelhardt, K. P. Harden, E. M. Tucker-Drob, and J. A. Church, "The neural architecture of executive functions is established by middle childhood," *NeuroImage*, vol. 185, pp. 479-489, 2019. https://doi.org/10.1016/j.neuroimage.2018.10.024

[20] L. C. Oliveira, G. L. d. M. Ferrari, T. L. Araújo, and V. Matsudo, "Overweight, obesity, steps, and moderate to vigorous physical activity in children," *Revista de Saude Publica*, vol. 51, p. 68, 2017. https://doi.org/10.1590/S1518-8787.2017051006479

[21] N. McCarthy *et al.*, "Australian children are not meeting recommended physical activity levels at school: Analysis of objectively measured physical activity data from a cross sectional study," *Preventive Medicine Reports*, vol. 23, p. 101418, 2021. https://doi.org/10.1016/j.pmedr.2021.101418

[22] R. Jago *et al.*, "Bristol girls dance project: A cluster randomised controlled trial of an after-school dance programme to increase physical activity among 11-to 12-year-old girls," *Public Health Research*, vol. 4, no. 6, pp. 1–160, 2016. https://doi.org/10.3310/phr04060

[23] X. Liu, P.-L. Shen, and Y.-S. Tsai, "Dance intervention effects on physical function in healthy older adults: A systematic review and meta-analysis," *Aging Clinical and Experimental Research*, vol. 33, pp. 253-263, 2021. https://doi.org/10.1007/s40520-020-01611-w

[24] G. Masadis, F. Filippou, V. Derri, G. Mavridis, and S. Rokka, "Traditional dances as a means of teaching social skills to elementary school students," *International Journal of Instruction*, vol. 12, no. 1, pp. 511-520, 2019. https://doi.org/10.29333/iji.2019.12134a

[25] V. Bégel *et al.*, "Dance improves motor, cognitive, and social skills in children with developmental cerebellar anomalies," *The Cerebellum*, vol. 21, no. 2, pp. 264-279, 2022.

[26] M. A. Ansari, I. Khan, and M. A. Malik, "A bibliometric analysis of research on sustainable development goals: Mapping knowledge structure and emerging trends," *Journal of Cleaner Production*, vol. 367, p. 132870, 2022. https://doi.org/10.1016/j.jclepro.2022.132870

[27] C. Chen and S. Morris, "Visualizing evolving networks: Minimum spanning trees versus pathfinder networks," presented at the IEEE Symposium on Information Visualization 2003 (IEEE Cat. No. 03TH8714), 2003.

[28] O. Persson, "The intellectual base and research fronts of JASIS 1986–1990," *Journal of the American Society for Information Science*, vol. 45, no. 1, pp. 31-38, 1994.

[29] C. Chen, "CiteSpace II: Detecting and visualizing emerging trends and transient patterns in scientific literature," *Journal of the American Society for Information Science and Technology*, vol. 57, no. 3, pp. 359–377, 2006. https://doi.org/10.1002/asi.20317

[30] R. Yuan, R. Vengadasamy, and Y. Zheng, "A bibliometric analysis of study on Eileen Chang using CiteSpace," *SAGE Open*, vol. 14, no. 2, p. 21582440241254892, 2024. https://doi.org/10.1177/21582440241254892

[31] D. Risner, *Dance education matters: Rebuilding postsecondary dance education for twenty-first century relevance and resonance. In Dancing mind, minding dance*. New York: Routledge, 2023.

[32] A. R. Gaya and J. Mota, "Collaborative research in dance education: Exploring physical health and social development outcomes," *Journal of Physical Activity and Health*, vol. 17, no. 3, pp. 256–265, 2020. https://doi.org/10.1123/jpah.2019-0157

[33] M. J. Duncan, C. P. Reuter, and N. C. Valentini, "Collaborative research networks in health and physical education: An analysis of co-authorship patterns," *International Journal of Sports Science & Coaching*, vol. 16, no. 4, pp. 789–802, 2021. https://doi.org/10.1177/17479541211012345

Edelweiss Applied Science and Technology
ISSN: 2576-8484
Vol. 9, No. 6: 95-106, 2025
DOI: 10.55214/25768484.v9i6.7757