ATATÜRK ÜNİVERSİTESİ YAYINLARI
ATATURK UNIVERSITY PUBLICATIONS

Research Article *Araştırma Makalesi* DOI: 10.62425/rses.1909853

Bibliometric Analysis of Studies in the Field of Physical Literacy and Physical Education Using VOSviewer: A Web of Science Database Review

Fiziksel Okuryazarlık ve Beden Eğitimi Alanındaki Çalışmaların Vosviewer İle Bibliyometrik Analizi: Web of Science Veritabanı İncelemesi

Hasibe ÇORUH[1]
[1]Bursa Uludağ University, Faculty of Sport Sciences, Department of Physical Education and Sports, Physical Education and Sports Research Group (BESAG), Bursa, Türkiye

Nimet HAŞIL KORKMAZ[1]
[1]Bursa Uludağ University, Faculty of Sport Sciences, Department of Physical Education and Sports, Physical Education and Sports Research Group (BESAG), Bursa, Türkiye

Fatma DEMİR ZENGİN[2]
[2]Ministry of National Education, Physical Education and Sports Teacher, Physical Education and Sports Research Group (BESAG), Kocaeli, Türkiye

ABSTRACT

This study aims to examine the literature on physical literacy using bibliometric methods, moving from the general to the specific, with a particular focus on identifying trends in physical education. Within this scope, works published between 2000 and 2026 in the Web of Science database were scanned; 828 articles were analyzed in a general search using the keyword "Physical Literacy," and 301 articles were analyzed in a specific search using the keywords "Physical Literacy" and "Physical Education" together. Within the scope of the analysis, publication years, countries, authors, universities, journals, citation impact, co-citation analysis, and keyword (co-occurrence) networks were examined and visualized using VOSviewer (1.6.20). The results show that Canada has the highest number of publications across general searches, while the United States has the highest number of publications in specific searches. The most frequently used keywords in the general search are "physical literacy," "physical activity," "physical education," "children," "motivation," and "health," while in the specific search, "physical literacy," "physical education," "physical activity," "assessment," "children," and "pedagogy" stand out. The most cited study was Kirk (2013; 303 citations), while the most cited author in the general search was Tremblay Mark, in the specific search was Dudley Dean, and by country, in the general search was Canada, and in the specific search was the UK. In conclusion, while physical literacy research in the general literature focuses on health, physical activity, and child development, studies in the context of physical education tend to focus on teaching programs, pedagogical approaches, and teacher roles.

Keywords: Bibliometric analysis, physical education, physical literacy, VOSviewer

ÖZ

Fiziksel okuryazarlık, "motivasyon, özgüven, fiziksel yeterlilik, bilgi ve anlayış" unsurlarını içeren yaşam boyu fiziksel aktiviteyi teşvik etmeyi amaçlayan temel bir kavramdır. Bu çalışma, fiziksel okuryazarlık alanındaki literatürü genelden özele doğru bibliyometrik yöntemle inceleyerek, özellikle beden eğitimi temalı eğilimleri ortaya koymayı amaçlamaktadır. Bu kapsamda, Web of Science veri tabanında 2000-2026 yılları arasında yayımlanan eserler taranmış; "*Physical Literacy*" anahtar kelimesiyle yapılan genel aramada 828 makale, "*Physical Literacy*" ve "*Physical Education*" anahtar kelimelerinin birlikte kullanıldığı özel aramada ise 301 makale analiz edilmiştir. Analiz kapsamında yayın yılları, ülkeler, yazarlar, üniversiteler, dergiler, atıf etkisi, ortak yazarlık ve anahtar kelime (eş-oluşum) ağları incelenmiş ve VOSviewer (1.6.20) ile görselleştirilmiştir. Bulgular, genel aramada Kanada, özel aramada ise Amerika'nın en çok yayın üreten ülke olduğu görülmektedir. Sık kullanılan anahtar kelimeler genel aramada *"physical literacy", "physical activity", "physical education", "children", "motivation"* ve *"heatlh" iken;* özel aramada *"physical literacy", "physical education", "physical activity", "assessment", "children"* ve *"pedagogy"* öne çıkmaktadır. En çok atıf alan çalışma Kirk (2013; 303 atıf) olurken, en çok atıf alan yazar genel arama da Tremblay Mark, özel aramada Dudley Dean, ülkeler bazında ise genel aramada Kanada özel aramada ise İngiltere olmuştur. Sonuç olarak, genel literatürde fiziksel okuryazarlık araştırmaları sağlık, fiziksel aktivite ve çocuk gelişimi odaklı bir eğilim gösterirken; beden eğitimi bağlamındaki çalışmaların ise öğretim programları, pedagojik yaklaşımlar ve öğretmen rollerine yoğunlaştığı görülmektedir.

Anahtar Kelimeler: Beden eğitimi, bibliyometrik analiz, fiziksel okuryazarlık, VOSviewer

Geliş Tarihi/Received 14.03.2026
Kabul Tarihi/Accepted 10.06.2026
Yayın Tarihi/Publication Date 22.06.2026

Sorumlu Yazar/Corresponding author: Hasibe ÇORUH
E-mail: coruhhasibe16@gmail.com
Cite this article: Çoruh, H., Haşıl Korkmaz, N., & Demir Zengin, F. (2026). Bibliometric analysis of studies in the field of physical literacy and physical education using VOSviewer: A Web of Science database review. *Research in Sport Education and Sciences, 28*(2), 124-138.

Content of this journal is licensed under a Creative Commons Attribution-Noncommercial 4.0 International License.

Introduction

The theoretical framework of physical literacy (PL) is addressed in various ways in the literature (Edwards et al., 2017). For example, Society of Health and Physical Educators (SHAPE) defines physical literacy as the ability to move with competence and confidence across a range of physical activities in a variety of settings that support a person's healthy development (SHAPE America; 2014). In Australia, physical literacy is defined as a lifelong process encompassing self-confidence, knowledge, attitude, and motivation, as a fundamental component of acquiring motor competence (Richards, 2016). Whitehead, on the other hand, defined physical literacy as "motivation, confidence, physical competence, knowledge, and understanding to recognize the value of lifelong participation in physical activity and take responsibility for it," making it one of the most widely accepted definitions (Whitehead, 2013). Although there are different definitions in the literature, many articles use Whitehead's definition of physical literacy (Edwards et al., 2017), and the majority of the references in the examined articles are to Whitehead's work (Bailey, 2023). Interest in the concept of physical literacy has gained significant momentum in recent years (Belton et al., 2022; Higgs et al., 2008) and has also become a focal point, particularly in quality physical education (Bailey, 2023; Durden-Myers & Bartle, 2023; Taş et al., 2024).

Physical education (PE) aims to encourage all children and young people to participate in lifelong physical activity and to support them on their journey to physical literacy (Sum et al., 2016). Whitehead defined the relationship between PL and PE, stating that PL is the ultimate goal of PE and that PE is the primary means of achieving PL. "Physical education" is a subject area in the school curriculum; "physical literacy" is the goal of physical education (Whitehead, 2013). PL is now integrated into physical education policies worldwide. For example, UNESCO's QPE (Quality Physical Education) guidelines for PE policymakers use PL as a conceptual foundation (Lounsbery & McKenzie, 2015).

In the literature, only a few bibliometric studies have been conducted on PL (Mendoza-Muñoz et al., 2022; Qian et al., 2025). Similarly, only a limited number of bibliometric studies have been undertaken in the context of physical education (Al Husaeni, 2022; Gustian et al., 2026; Şahin et al., 2023). In addition, to the best of our knowledge, we have not come across a comprehensive bibliometric survey that examines PL and PE topics by combining them from the general to the specific. Previous studies have generally considered PL and PE as separate research domains and have not provided an integrated bibliometric perspective. Moreover, there is still a lack of studies employing a dual search strategy that integrates both a general and a specific approach within the Web of Science (WoS) database. Therefore, this study aims to conduct a bibliometric analysis of PL and PE articles published in the Web of Science (WoS) database, moving from a general to a specific search.

The main contribution of this study lies in providing a comprehensive bibliometric comparison of physical literacy and physical education literature by integrating a dual search strategy (general and specific) within the Web of Science (WoS) database. Unlike previous studies that have generally examined these fields separately, this study offers a multi-layered perspective that captures both the broad development of physical literacy research and its more focused application within physical education. In addition, by combining performance analysis, citation analysis, co-occurrence, and co-citation networks, the study provides a more holistic understanding of the intellectual structure, thematic evolution, and influential actors in the field.

In this context, the study focused on the following research questions (RQ):

- **RQ1:** How are the fundamental bibliometric indicators (year of publication, authors, journals, universities, countries, and categories) distributed in studies conducted in the fields of physical literacy (general search) and physical literacy and physical education (specific search)?
- **RQ2:** How is the distribution in terms of citation analysis (most influential documents, authors, and countries) in studies conducted on the fields of physical literacy (general search) and physical literacy and physical education (specific search)?
- **RQ3:** How do studies on physical literacy (general search) and physical literacy and physical education (specific search) show a distribution in terms of co-occurrence (most frequently used keywords)?
- **RQ4:** How do studies in the fields of physical literacy (general search) and physical literacy and physical education (specific search) show a distribution in terms of co-citation analysis (cited articles, journals, and authors)?

Methods

Research Model

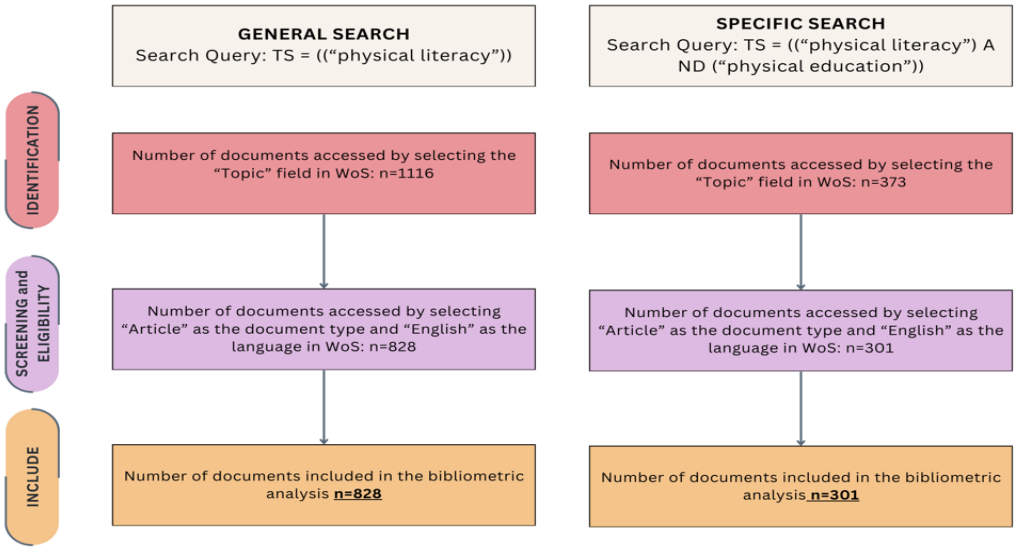
This study employs bibliometric analysis, a quantitative research method, to reveal the structural and trend characteristics of existing articles within the scope of general search (physical literacy) and specific search (physical literacy and physical education). Bibliometric analysis is a powerful method that enables the systematic examination of scientific output in a specific field through quantitative indicators, and it is widely used, particularly in revealing research trends, collaborations, and knowledge structures (Arslan, 2022; Donthu et al., 2021).

Data Collection

The data for the study were obtained from the Web of Science (WoS) Core Collection database. WoS has been preferred as a reliable source for bibliometric studies because it enables interdisciplinary comparisons and citation analysis (Martín-Martín et al., 2018). During the data collection process, a search was first conducted in the WoS interface (general search) using the keyword TS=("physical literacy"). Second, a more specific search was conducted (specific search) using the keywords TS=("physical literacy" AND "physical education"). These two searches (general and specific searches) were conducted on February 18, 2026. The searches were performed by selecting the "Topic" field in the WoS database. The search results were filtered by language (English) and document type (article). In the general search, 1116 records were initially identified, and after applying the document type (article) and language (English) filters, 828 articles were included in the analysis. Similarly, in the specific search, 373 records were initially identified, and 301 articles were included after the screening process. The PRISMA flow diagram in Figure 1 was used to identify the articles included in the study through the identification, screening, eligibility, and inclusion stages (Moher et al., 2019). You can access the general search at this address (https://www.webofscience.com/wos/woscc/summary/83316461-37c7-401c-a4c4-44d60c74fe07-019f6732fb/relevance/1) and the specific search at this address (https://www.webofscience.com/wos/woscc/summary/31777669-4028-48fa-8769-544d4319fa4e-019f68508e/relevance/1).

Figure 1.

Article Selection Process



Data Analysis

The bibliographic data obtained, including author, title, abstract, keywords, publication year, journal name, institution, country, and citation information, has been exported from the WoS database. The data were transferred to VOSviewer (version 1.6.20) for bibliometric mapping and network analysis. In the first analysis, the field of physical literacy was examined broadly, while in the second, articles published in physical literacy and physical education were analyzed. The analysis was conducted in two distinct stages. First, basic bibliometric indices (number of articles published by year, author, country, institution, and journal) were calculated. Secondly, citation analysis, keyword relationships, and co-citation analysis were

calculated. The graphs in the performance analysis were created using the Python Matplotlib Library. Threshold values were adjusted according to the nature of each bibliometric analysis to ensure meaningful visualization and to reduce noise in the dataset.

Results

This section first presents the results from the general search (physical literacy), followed by those from the specific search (physical literacy and physical education). To do this, basic bibliometric indicators (years, authors, journals, institutions, and countries) are presented, followed by citation analysis, keyword relationships, and co-citation.

Performance Analysis (RQ1)

This section of the study presents analyses of studies published within the scope of general and specific searches, including year, author, journal, institution, country, and citation information.

Annual Publication Trend

A total of 828 articles were identified using the keyword “physical literacy” in the general search. In the specific search, 301 articles containing both “physical literacy” and “physical education” were identified. Both searches showed that publications were concentrated between 2007 and 2026; in Figure 2-a the highest number of publications was 141 articles in 2025 in the general search and 53 articles in 2025 in the specific search.

Distribution by Authors (Most Productive Authors)

Among the 828 articles examined in the general search, the most prolific authors were Cairney (n=33) and Sum (n=29), while among the 301 articles examined in the specific search, the most prolific authors were Sum (n=12) and Cairney (n=12) (Figure 2-b). Cairney and Sum stood out in both search scopes.

Distribution by Journal (Most Productive Journals)

The journals with the highest number of publications among the 828 articles reviewed in the general search were BMC Public Health (n=43) and Journal of Teaching in Physical Education (n=40). In the 301 articles examined in the specific search, the most productive journals were determined to be the Journal of Teaching in Physical Education (n=28) and Physical Education and Sport Pedagogy (n=22) (Figure 2-c). The results show that publications in the specific search were concentrated more in physical education-focused journals.

Distribution by Organizations (Most Productive Organizations)

Among the 828 articles examined in the general search, the most productive organizations were Deakin University (n=50) and the Chinese University of Hong Kong (n=47). In the 301 articles examined within the scope of the specific search, the Chinese University of Hong Kong (n=20) and Deakin University (n=17) stood out as the most productive organizations (Figure 2-d).

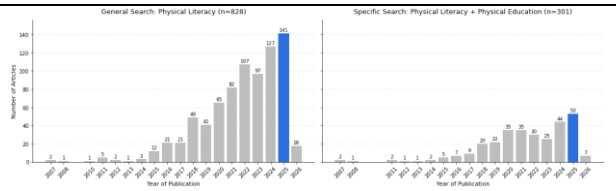
Distribution by Country (Most Productive Countries)

In the general search, the most productive countries were Canada (n=206), the United States (n=147), and Australia (n=134), while in the specific search, the United States (n=65), Canada (n=47), and Australia (n=46) stood out; Turkey's publication count was determined to be 13 in the general search and 7 in the specific search (Figure 2-e).

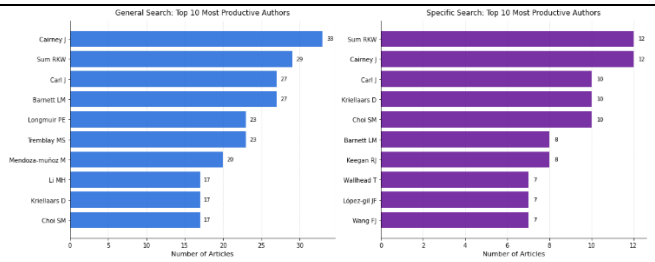
Web of Science Subject Categories

In the general search, the categories of Sport Sciences (n=271) and Education Educational Research (n=224) stood out. In contrast, in the specific search, the categories of Education Educational Research (n=152) and Sport Sciences (n=102) became dominant (Figure 2-f).

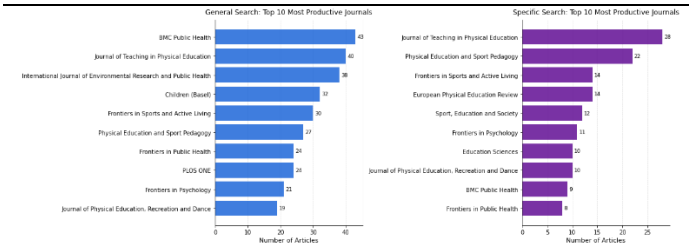
Figure 2.
Bibliometric Performance Analysis of Publications (RQ1)



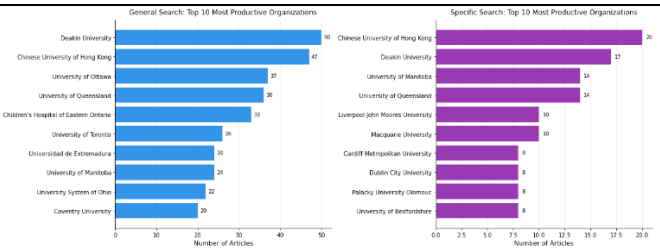
a) Distribution of Publications Obtained Through General and Specific Searches by Year



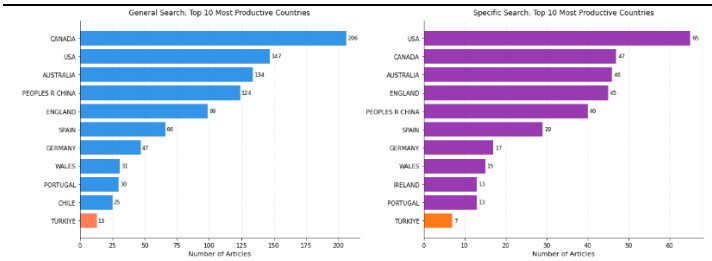
b) Number of Publications by Authors in General and Specific Searches



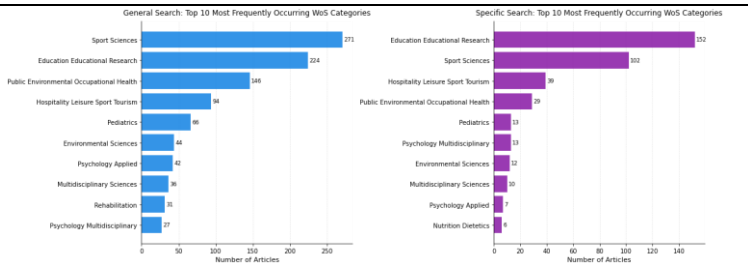
c) Number of Publications by Journal in General and Specific Searches



d) Number of Publications by Organization in General and Specific Searches



e) Number of Publications by Country



f) Number of Publications by WoS Subject Categories

Results of Analysis Using the Visual Mapping Method

This section aims to identify influential documents, authors, and countries in the fields of physical literacy and physical education (general and specific searches) using the Bibliometric Data-Based Mapping Method, employing the techniques of "Citation," "Co-Occurrence," and "Co-Citation". In addition, the "Bibliometric Mapping Method" aims to identify the most frequently used keywords in articles on physical literacy and physical education. To this end, a bibliometric analysis of articles on "Physical Literacy" and "Physical Education" was conducted using VOSviewer. The analysis results first present the general search (physical literacy) results, followed by the specific search (physical literacy and physical education) results within this general group.

Mapping Based on Citation Analysis (RQ2)

Research studies on physical literacy and physical education were examined, and the most influential documents, authors, and countries in the field were identified through citation analysis.

Most Cited Documents (Most Influential Documents). In the citation analysis of the most effective studies included in the WoS database, the minimum citation threshold was set at 10 for both searches (general and specific searches). It was observed that 314 articles in the general search and 131 in the specific search met this threshold. The top 10 articles with the highest citation counts in both datasets were analyzed. The distribution of articles according to citation counts is presented in Tables 1a–1b, while network maps based on citation analysis are presented in Figure 3-a.

Table 1.

Top 10 Articles with the Most Citations among Publications Available in General and Specific Searches

a. General search (physical literacy)			b. Specific search (physical literacy and physical education)		
Title / Authors (Year)	Citations	Links	Title / Authors (Year)	Citations	Links
1. Educational Value and Models-Based Practice in Physical Education / Kirk (2013)	303	10	1. Educational Value and Models-Based Practice in Physical Education / Kirk (2013)	303	10
2. The Canadian Assessment of Physical Literacy: methods for children in grades 4 to 6 (8 to 12 years) / Longmuir et al. (2015)	163	0	2. Physical Literacy: Importance, Assessment and Future Directions / Giblin et al. (2014)	155	26
3. Physical Literacy: Importance, Assessment and Future Directions / Giblin et al. (2014)	155	54	3. Critical Considerations for Physical Literacy Policy in Public Health, Recreation, Sport, and Education Agencies / Dudley et al. (2017)	144	24
4. Critical Considerations for Physical Literacy Policy in Public Health, Recreation, Sport, and Education Agencies / Dudley et al. (2017)	144	45	4. Physical Literacy: Philosophical Considerations in Relation to Developing a Sense of Self, Universality and Propositional Knowledge / Whitehead (2007)	134	28
5. Physical Literacy: Philosophical Considerations in Relation to Developing a Sense of Self, Universality and Propositional Knowledge / Whitehead (2007)	134	44	5. Construction and Validation of a Perceived Physical Literacy Instrument for Physical Education Teachers / Sum et al. (2016)	100	1
6. What Is Physical Literacy, Really? / Jurbala (2015)	128	52	6. Physical literacy: a concept analysis / Young et al. (2019)	98	22
7. Physical Literacy, Physical Activity, and Health Indicators in School-Age Children / Caldwell et al. (2020)	124	5	7. What's in a concept? A Leximancer text mining analysis of physical literacy across the international literatüre / Hyndman & Pill (2018)	96	21
8. Defining Physical Literacy for Application in Australia: A Modified Delphi Method / Keegan et al. (2019)	120	36	8. A Conceptual Model of Observed Physical Literacy / Dudley (2015)	94	24
9. Canadian Assessment of Physical Literacy Second Edition: a streamlined assessment of the capacity for physical activity among children 8 to 12 years of age / Longmuir et al. (2018)	114	2	9. Physical literacy and Comprehensive School Physical Activity Programs / Castelli et al. (2014)	85	16
10. Canadian Agility and Movement Skill Assessment (CAMSA): Validity, objectivity, and reliability evidence for children 8-12 years of age / Longmuir (2017)	112	22	10. Canada's Physical Literacy Consensus Statement: process and outcome / Tremblay et al. (2018)	80	3

According to the general citation analysis, the most highly cited study is Kirk (2013), which received 303 citations. This is followed by Longmuir (2015) (n=163) and Giblin (2014) (n=155); the citation counts for the top 10 studies range from 112 to 303. According to the specific citation analysis, the most highly cited study is Kirk (2013), which received 303 citations. This is followed by Giblin (2014) (n=155) and Dudley (2017) (n=144); the citation counts for the top 10 studies range from 80 to 303.

Most Cited Authors (Most Influential Authors). When examining the distribution of citations by author for articles within the general and specific search scopes, it is observed that 2569 authors contributed to the field in the general search. In contrast, 868 contributed to the specific search. For both searches, a threshold of 5 documents and 10 citations was set for authors. It was observed that 129 authors in the general search and 28 authors in the specific search met these threshold values. In both searches, the top 10 authors with the most citations were included in the analysis. The distribution of authors according to citation counts is presented in Tables 2a-2b, while the citation network maps for authors are presented in Figure 3-b.

When Tables 2a and 2b are examined together, it becomes clear that certain authors in the physical literacy literature occupy a central position within the field's intellectual structure due to their high citation impact and strong network connections.

In the general search, Tremblay had the most citations (1281), followed by Longmuir (1134) and Cairney (1010). Notably, Cairney is the most central author in the network structure with a connection strength of 1447. In the specific search, Dudley had the most citations (441), followed by Kriellaars (429) and Cairney (420). It is understood that link strengths are lower in the specific search than in the general search, but certain authors are positioned within a more densely themed network. In particular, the fact that authors such as Cairney, Dudley, Kriellaars, Sum, Keegan, and Whitehead rank high in both search types reveals that these researchers are decisive actors in the physical literacy and physical education literature in terms of theory and methodology. When general and specific search results are evaluated together, the physical literacy literature spans a broad, interdisciplinary field. In contrast, physical education-focused studies exhibit a more limited, thematically concentrated academic network. This situation reflects both the field's conceptual breadth and the level of sub-thematic specialization.

Table 2.
Distribution of Articles in the General and Specific Search Scope According to the Number of Citations By Authors

a. General search (physical literacy)					b. Specific search (physical literacy and physical education)				
No	Author	Documents	Citations	TLS*	No	Author	Documents	Citations	TLS*
1	Tremblay, Mark	25	1281	707	1	Dudley, Dean A.	10	441	207
2	Longmuir, Patricia E.	25	1134	640	2	Kriellaars, Dean	12	429	176
3	Cairney, John	32	1010	1447	3	Cairney, John	12	420	214
4	Barnes, Joel	16	722	266	4	Whitehead, Margaret E.	6	383	163
5	Dudley, Dean A.	19	713	1153	5	Sum, Raymond Kim Wai	12	340	197
6	Kriellaars, Dean	19	614	800	6	Keegan, Richard	9	283	152
7	Sum, Raymond Kim Wai	28	590	701	7	Ha, Amy Sau Ching	8	281	158
8	Keegan, Richard	17	516	895	8	Wainwright, Nalda	6	255	100
9	Whitehead, Margaret E.	9	478	526	9	Wallhead, Tristan	8	250	209
10	Woodruff, Sarah	11	473	135	10	Durden-Myers, Elizabeth Jayne	6	244	131

*** TLS: Total Link Strength**

Most Cited Countries (Most Influential Countries). When examining the distribution of citations by country for articles included in both the general and specific searches, 70 countries contributed to the field in the general search. In contrast, 53 contributed to the specific search. For both searches, the threshold values were set at 1 document and 1 citation per country. It was observed that 65 countries met these threshold values in the general search and 46 countries in the specific search. In both searches, the top 10 countries with the most citations were included in the analysis. The distribution of countries by citation count is shown in Tables 3a-3b, and the citation network maps for countries are shown in Figure 3-c. In addition, document and citation information for Türkiye has been included.

Table 3.
Distribution of Articles within the General and Specific Search Areas According to the Number of Citations by Country

a. General search (physical literacy)					b. Specific search (physical literacy and physical education)				
No	Country	Documents	Citations	TLS*	No	Country	Documents	Citations	TLS*
1	Canada	206	4050	2535	1	England	44	1535	627
2	Australia	133	2809	2926	2	Australia	45	1478	771
3	England	98	2374	2299	3	Canada	47	1203	533
4	USA	147	2121	1264	4	USA	65	1024	471
5	People R China	124	1276	1451	5	People R China	40	583	362
6	Wales	30	882	908	6	Wales	14	475	235
7	Germany	46	743	771	7	New Zealand	10	289	100
8	Spain	65	488	561	8	Germany	16	259	186
9	Portugal	29	408	408	9	Taiwan	9	227	140
10	Netherlands	12	369	534	10	Italy	8	185	40
.....		.....	.....	.....	.....	.....	.....	.....	.....
21	**Türkiye**	**13**	**92**	**232**	**21**	**Türkiye**	**7**	**15**	**53**

*** TLS: Total Link Strength**

Mapping Analysis Based on Co-occurrence (Repetition Frequency) Analysis (RQ3). When examining the distribution of the most frequently used keywords in articles across general and specific searches, 1676 keywords were used in general searches and 678 in specific searches. For both searches, the minimum threshold value for the minimum number of occurrences (frequency of repetition) among keywords was set at 5. The number of occurrences numerically indicates how many times a word is used as a keyword in the articles. It was observed that 108 keywords in the general search and 33 keywords in the specific search met these threshold values. In both searches, the top 10 most frequently used keywords in the articles among the keywords meeting the threshold value were included in the analysis. The distribution of the most frequently used keywords in the articles is presented in Tables 4a-4b, and the network maps are presented in Figure 3-d.

Table 4.

Distribution of the Most Frequently Used Keywords in Articles within the General and Specific Search Areas

a. General search (physical literacy)				b. Specific search (physical literacy and physical education)			
No	Keyword	Occurrences	TLS*	No	Keyword	Occurrences	TLS*
1	Physical Literacy	396	831	1	Physical Literacy	141	249
2	Physical Activity	244	624	2	Physical Education	132	254
3	Physical Education	132	337	3	Physical Activity	74	165
4	Children	71	221	4	Assessment	26	67
5	Motivation	36	116	5	Children	23	69
6	Health	35	108	6	Pedagogy	22	45
7	Exercise	35	87	7	Health	13	37
8	Assessment	32	98	8	Motivation	11	25
9	Youth	30	78	9	Curriculum	11	21
10	Adolescents	29	71	10	Learning	9	22

*** TLS: Total Link Strength**

Mapping Analysis Based on Co-Citation Analysis (RQ4)

Co-Citation Analysis Based on Cited Articles (Cited References). When examining the distribution of co-citation analysis across articles in the general and specific search areas, it is observed that 26550 articles in the general search and 10971 in the specific search contribute to the field. For both searches, a minimum citation count of 30 was set as the threshold value. It was observed that 88 articles in the general search and 25 articles in the specific search met these threshold values. The top 10 articles with the most citations were included in the analysis. The distribution of articles with the most co-citations is shown in Tables 5a-5b, and the network maps of the articles based on co-citation analysis are shown in Figure 3-e.

Table 5.

Distribution of Articles with the Most Co-Citations in General and Specific Search Areas

a. General search (physical literacy)			b. Specific search (physical literacy and physical education)		
Cited Reference Title / Authors (Year)	Citations	TLS*	Cited Reference Title / Authors (Year)	Citations	TLS*
1. Definitions, Foundations and Associations of Physical Literacy: A Systematic Review / Edwards et al. (2017)	261	2524	1. Definitions, Foundations and Associations of Physical Literacy: A Systematic Review / Edwards et al. (2017)	91	522
2. Physical Literacy, Physical Activity and Health: Toward an Evidence-Informed Conceptual Model / Cairney J et al. (2019)	232	2128	2. Physical Literacy / Whitehead (2010)	84	448
3. Physical Literacy / Whitehead (2010)	196	1842	3. The concept of physical literacy / Whitehead (2001)	82	479
4. The concept of physical literacy / Whitehead (2001)	166	1525	4. Physical Literacy, Physical Activity and Health: Toward an Evidence-Informed Conceptual Model / Cairney J et al. (2019)	64	319
5. 'Measuring' Physical Literacy and Related Constructs: A Systematic Review of Empirical Findings / Edwards et al. (2018)	125	1484	5. 'Measuring' Physical Literacy and Related Constructs: A Systematic Review of Empirical Findings / Edwards et al. (2018)	55	407
6. The Canadian Assessment of Physical Literacy: methods for children in grades 4 to 6 (8 to 12 years) / Longmuir et al. (2015)	121	1343	6. What Is Physical Literacy, Really? / Jurbala (2015)	52	374
7. Physical Literacy, Physical Activity, and Health Indicators in School-Age Children / Caldwell et al. (2020)	97	971	7. Physical literacy in the field of physical education – A challenge and a possibility / Lundvall (2015)	47	328
8. Critical Considerations for Physical Literacy Policy in Public Health, Recreation, Sport, and Education Agencies / Dudley et al. (2017)	96	1165	8. Physical Literacy: Philosophical Considerations in Relation to Developing a Sense of Self, Universality and Propositional Knowledge / Whitehead (2007)	44	308
9. What Is Physical Literacy, Really? / Jurbala (2015)	94	1124	9. Implications of Physical Literacy for Research and Practice: A Commentary / Corbin (2016)	42	309
10. Physical Literacy: Importance, Assessment and Future Directions / Giblin et al. (2014)	92	964	10. Physical Literacy: Importance, Assessment and Future Directions / Giblin et al. (2014)	41	250

*** TLS: Total Link Strength**

Co-Citation Analysis Based on Cited Journals (Cited Sources*).* When examining the distribution of co-citation analysis of articles within the scope of general and specific searches by journal, it is observed that 10756 journals contributed to the field in the general search. In comparison, 5271 journals contributed to the specific search. For both searches, a minimum citation count of 30 was set as the threshold value among journals. It was observed that 176 journals in the general search and 59 journals in the specific search met these threshold values. The top 10 journals with the most citations were included in the analysis. The distribution of articles across the most-cited journals is shown in Tables 6a-6b, and the network maps of the journals in which the articles were published, based on co-citation analysis, are shown in Figure 3-f.

Table 6.

Distribution of Articles Published in Journals With The Most Co-Citations in General and Specific Search Areas

a. General search (physical literacy)			b. Specific search (physical literacy and physical education)		
Source	Citations	TLS*	Source	Citations	TLS*
1. BMC Public Health	1370	41791	1. Journal of Teaching in Physical Education	648	17204
2. Sports Medicine	1271	43423	2. Sports Medicine	443	12207
3. Journal of Teaching in Physical Education	1074	34103	3. BMC Public Health	368	9841
4. International Journal of Environmental Research and Public Health	900	29324	4. Sport, Education and Society	346	8075
5. International Journal of Behavioral Nutrition and Physical Activity	595	20615	5. European Physical Education Review	306	8446
6. Research Quarterly for Exercise and Sport	574	19059	6. Quest	301	7630
7. Medicine and Science in Sports and Exercise	553	20093	7. Physical Education and Sport Pedagogy	296	8633
8. Quest	520	16546	8. Research Quarterly for Exercise and Sport	295	7862
9. PLOS One	503	16759	9. Journal of Sport and Health Science	265	6723
10. Sport, Education and Society	499	14177	10. International Journal of Environmental Research and Public Health	255	7356

***** TLS: Total Link Strength

Co-Citation Analysis Based on Cited Authors (Cited Authors). When examining the distribution of co-citation analysis by author for articles within the general and specific search areas, it is observed that 17274 authors contributed to the field in the general search. In comparison, 7077 authors contributed to the specific search. For both searches, the minimum number of citations per author was set at 20. It was observed that 232 authors in the general search and 85 authors in the specific search met these threshold values. The top 10 authors with the most citations were included in the analysis. The distribution of articles by the authors with the most co-citations is shown in Tables 7a-7b, and the network map of articles based on authors' co-citation analysis is shown in Figure 3-g.

Table 7.

Distribution of Articles with the Most Co-Citations in General and Specific Search Areas According to Authors

a. General search (physical literacy)				b. Specific search (physical literacy and physical education)			
No	**Author**	**Citation**	**TLS***	**No**	**Author**	**Citation**	**TLS***
1	Whitehead, M.	870	16996	1	Whitehead, M.	435	7028
2	Cairney, J.	420	8828	2	Edwards, L. C.	160	2951
3	Edwards, L. C.	407	8828	3	Longmuir, P. E.	138	2337
4	Longmuir, P. E.	401	8422	4	Cairney, J.	134	2331
5	Barnett, lm	314	6511	5	Barnett, lm	110	1564
6	Tremblay, ms	246	4645	6	Kirk, D.	104	1779
7	Carl, J	210	4731	7	Durden-Myers, E. J.	92	1657
8	Durden-Myers, E. J.	167	3727	8	Dudley, D	79	1645
9	Dudley, D.	158	3971	9	Sum, Rkw	71	1279
10	Sum, Rkw	157	3313	10	Carl, J.	69	1243

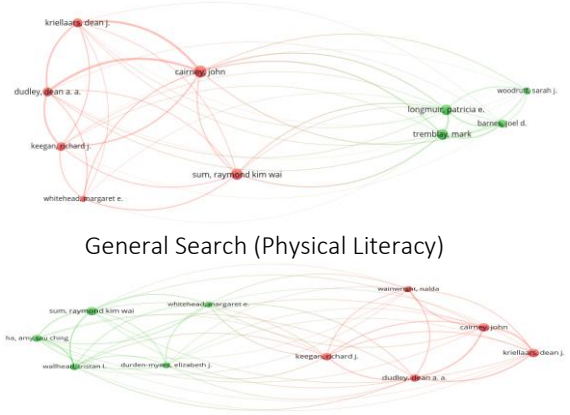
*** TLS: Total Link Strength**

Figure3.

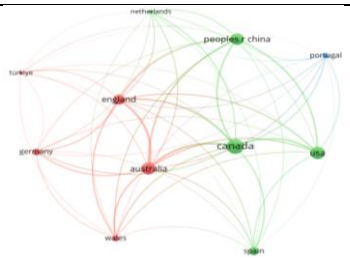
Overview of Citation, Co-Citation, and Keyword Networks in General and Specific Search Areas ***(RQ2-RQ3-RQ4)***



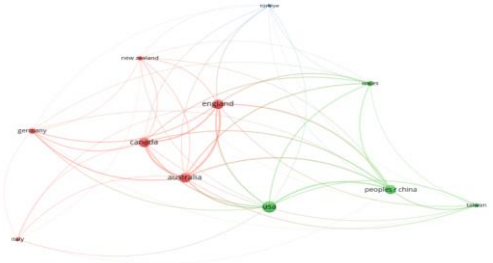
a) Citation Network Map of the Most Influential Articles in General and Specific Search Areas



b) Citation Network Map of the Most Influential Authors in General and Specific Search Areas

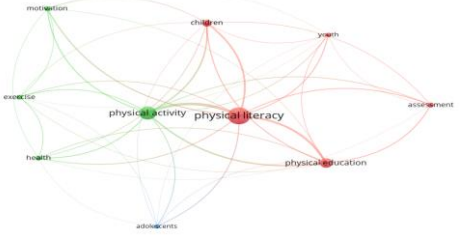


General Search (Physical Literacy)

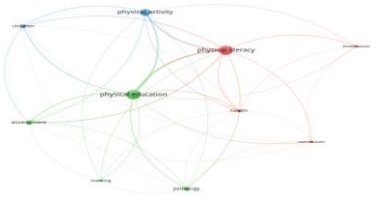


Specific Search (Physical Literacy and Physical Education)

c) Citation Network Map of the Most Influential Countries in General and Specific Search Areas

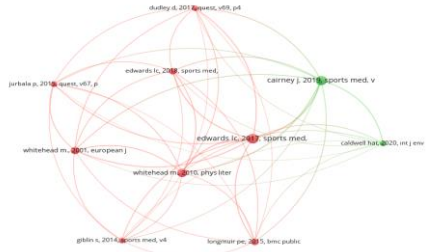


General Search (Physical Literacy)

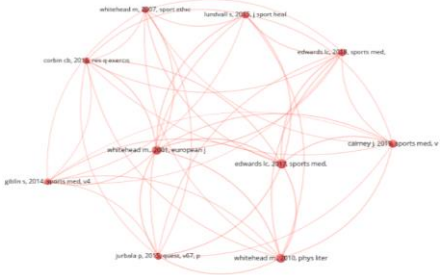


Specific Search (Physical Literacy and Physical Education)

d) Network Map Based on the Distribution of the Most Frequently Used Keywords in Articles within the General and Specific Search Areas

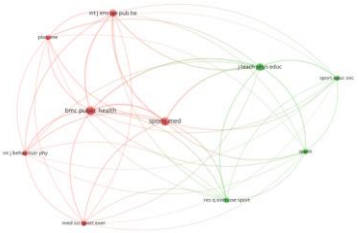


General Search (Physical Literacy)

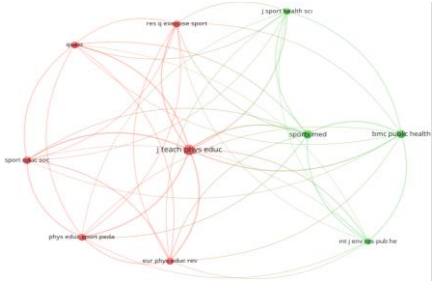


Specific Search (Physical Literacy and Physical Education)

e) Network Map Based on the Co-Citation Analysis of Articles within the General and Specific Search Areas

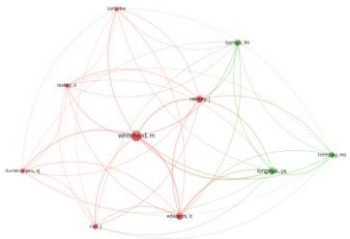


General Search (Physical Literacy)

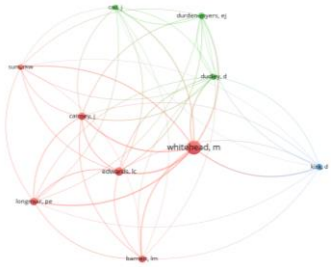


Specific Search (Physical Literacy and Physical Education)

f) Network Map Based on the Co-Citation Analysis of Journals Publishing Articles within the Scope of General and Specific Searches



General Search (Physical Literacy)



Specific Search (Physical Literacy and Physical Education)

g) Network Map of Articles in General and Specific Search Areas Based on Authors' Co-Citation Analysis

Discussion

This study aims to comprehensively evaluate trends in the literature on physical literacy and physical education, examining them from the general to the specific. In general, several bibliometric studies have examined physical literacy (Mendoza-Muñoz et al., 2022; Qian et al., 2025). On the other hand, to the best of our knowledge, no comprehensive bibliometric study has investigated physical literacy in the context of physical education, from the general to the specific. Therefore, to the best of our knowledge, this study is among the first bibliometric studies that analyses the literature, moving from the general to the specific, and seeks to highlight the most productive and prominent co-authors, the countries, journals, and institutions with the most scientific studies, the most cited articles, and the most frequently used keywords in the field of physical literacy and physical education.

Discussion on performance analysis (RQ1)

The first article on physical literacy was published in 2007. The number of publications on this topic has increased significantly, particularly since 2015, and has gained momentum in recent years. A similar upward trend has been observed in specialized search results focused on physical literacy and physical education. This indicates that the concept has become an increasingly important focus of research, both in the general literature and in the context of physical education. The year 2025, in particular, saw the highest number of scientific studies published (general search: 141 articles; specific search: 53 articles). Therefore, interest in this topic is steadily increasing. However, productivity analysis reveals that certain researchers play a central role in the literature. In the general search, the most productive author was Cairney (n=33), followed by Sum (n=29) and Carl (n=27). In the specific search, Sum (n=12) and Cairney (n=12) ranked first. The fact that the same researchers rank highly in both scopes shows that certain academic actors shape the field's intellectual core. This situation reveals that the physical literacy literature is both growing and being driven by certain specialized research groups.

This concentration suggests the presence of cumulative knowledge production, where established research groups reinforce their influence through sustained scholarly output.

When examining the distribution across journals, the highest number of publications within the general search scope were published in BMC Public Health (n=43), Journal of Teaching in Physical Education (n=40), and International Journal of Environmental Research and Public Health (n=38). This result shows that physical literacy studies have gained an important place not only in the field of sports science and physical education, but also in public health and environmental health literature. In the specific search, the most productive journals were the Journal of Teaching in Physical Education (n=28) and Physical Education and Sport Pedagogy (n=22). The fact that journals in physical education and pedagogical content ranked higher in the specific search indicates that this scope has a more application-oriented, teaching-oriented literature structure. When general and specific search results are combined, it becomes clear that the physical literacy literature has an interdisciplinary publication structure. The prominence of public health and multidisciplinary journals in general search results indicates that the health-based dimension of the concept has been strengthened. In contrast, the prominence of physical education and sports pedagogy-focused journals in the specific search indicates that the field has deepened its educational-based application. This situation shows that physical literacy develops in both health and education contexts.

This dual structure highlights a conceptual transition from health-oriented discourse to pedagogical implementation within educational settings.

When examining the distribution results by country, it is evident that the physical literacy literature is concentrated around specific academic centers. The fact that Canada, the USA, and Australia rank high in both general and specific searches reveals that these countries are global leaders in the conceptual development, policy production, and application-based research of the field. The prominence of similar countries in specific searches shows that studies in the context of physical education have largely developed within these academic ecosystems. Turkey's presence in both lists indicates that the field has potential for development at the national level, but that publication output remains limited. Furthermore, physical literacy has begun to attract attention in Europe, beyond Canada and the United States. Countries such as the United Kingdom, Spain, Germany, Wales, and Ireland have incorporated it into their teacher training programs and physical education curricula (Whitehead, 2007).

Discussion on Citation Analysis (RQ2)

The most relevant document based on citation count is the document titled “Educational Value and Models-Based Practice in Physical Education” with 303 citations (Kirk, 2013). Results from citation analysis show that the physical literacy literature exhibits an intellectual structure centered on certain authors and countries. The contributions of 2569 authors in the general search and 868 in the specific search to the field indicate broad academic participation. However, the decrease in the number of authors meeting the threshold values to 129 in the general search and 28 in the specific search indicates that academic impact is concentrated around a specific core group of researchers. In particular, the fact that authors such as Cairney, Dudley, Kriellaars, Sum, and Keegan have high citation and link strength in both scopes suggests that these researchers are driving the field's theoretical and application-based development. This points to the formation of a distinct “intellectual core” structure in the physical literacy literature. This structure indicates that the field is still in a consolidation phase, where a limited number of foundational scholars continue to shape its theoretical boundaries. A similar concentration is also seen at the country level. While 70 countries contributed to the general search and 53 to the specific search, Canada, Australia, the UK, and the United States stand out significantly in terms of citation and link power. The central position of these countries in both publication numbers and citation impact indicates that physical literacy research is concentrated in specific academic centers worldwide. The fact that similar countries rank high in the specific search also reveals that physical education-based studies have developed within the same research ecosystem. This pattern further supports the existence of a geographically concentrated knowledge production system in the field.

Discussion on Co-occurrence (Repetition Frequency) Analysis (RQ3)

Results based on co-occurrence analysis reveal the conceptual focus and thematic areas of concentration in the physical literacy literature. The use of 1676 keywords in general searches indicates that the field has a broad, interdisciplinary conceptual framework. However, the number of keywords meeting the threshold value dropping to 108 reveals a concentration around specific themes in the literature. The concepts of “Physical Literacy,” “Physical Activity,” and “Physical Education” have the highest formation and connection power, indicating that the field is grounded in both theoretical and application-based structures. Furthermore, the prominence of concepts such as “Children,” “Motivation,” “Health,” and “Assessment” suggests that the child and youth population, health outcomes, and measurement and evaluation dimensions largely shape research. The dominance of child- and health-related keywords indicates that physical literacy research is primarily oriented toward early-life interventions and long-term health promotion outcomes.

In the specific search, the decrease in the number of keywords to 678 and the limitation of the number of keywords meeting the threshold to 33 indicate a narrower, thematically focused literature structure. The prominence of concepts such as “Physical Education,” “Pedagogy,” “Curriculum,” and “Learning” indicates that studies in the context of physical education focus on the instructional and program development dimensions. When general and specific searches are evaluated together, it can be said that the physical literacy literature has a broad health and physical activity framework. In contrast, physical education-based studies exhibit a more pedagogical, application-oriented thematic structure. These findings reveal that the field is simultaneously undergoing both interdisciplinary expansion and sub-thematic specialization. This dual evolution reflects both diversification of research domains and increasing specialization within physical education contexts.

Discussion on Co-Citation Analysis (RQ4)

The results of the co-citation analysis indicate that the theoretical and conceptual foundation of the physical literacy literature has been shaped around certain pioneering studies. The fact that Margaret Whitehead's 2001 and 2010 studies, as well as the systematic reviews conducted by John Cairney and Lowri C. Edwards, have the highest common citation values in both general and specific searches, reveals that the field is based on a strong conceptual core. In particular, the fact that the studies “Definitions, Foundations and Associations of Physical Literacy” (Edwards et al., 2017) and “Physical Literacy” (Whitehead, 2010) rank high in both data sets shows that studies on the definition, theoretical foundation, and measurement of physical literacy occupy a central position in the literature. This indicates that the field is still in the process of conceptual clarification and developing measurement tools.

According to the cited journals, the joint citation analysis reveals that journals focused on public health, sports sciences, and physical education stand out together, confirming the interdisciplinary nature of physical literacy. In particular, the high

joint citation values of journals such as BMC Public Health, Sports Medicine, and the Journal of Teaching in Physical Education demonstrate that the field has developed along both health-based and pedagogical axes. The relatively central position of physical education and educational science journals in the specific search indicates that the concept of physical literacy is more intensively discussed in the context of school-based applications. In the co-citation analysis based on cited authors, Margaret Whitehead's significantly higher value indicates that the concept's philosophical and theoretical origins are strongly grounded in this framework. Overall, the co-citation network reveals that the physical literacy literature is clustered around foundational texts and pioneering researchers, and it also develops a multidimensional knowledge structure across the fields of health, sports science, and education. This multidimensional structure demonstrates that physical literacy operates simultaneously as a health construct and an educational framework.

Conclusion and Recommendation

This bibliometric study examined the development of the physical literacy literature using a comprehensive approach based on performance analysis (RQ1), citation analysis (RQ2), co-occurrence analysis (RQ3), and co-citation analysis (RQ4). The results show a significant increase in publications, particularly after 2015, indicating that the field has gained momentum in recent years. Citation and co-citation analyses reveal that the theoretical foundation of the literature has largely been shaped by Margaret Whitehead's conceptual framework and by systematic, model-based studies by researchers such as John Cairney and Lowri C. Edwards. This indicates that the field has a strong theoretical core.

In addition, keyword and journal distributions reveal that physical literacy has gained an interdisciplinary structure centered on health, physical activity, and physical education. The fact that Canada, Australia, the United Kingdom, and the United States are among the most productive countries indicates that the literature is concentrated in specific geographical centers. Overall, the field of physical literacy is a dynamic area of research that is both deepening in conceptual depth and expanding in application and policy. Future studies focusing on the application and measurement dimensions, particularly across different cultural contexts, will contribute to the balanced development of the field globally.

Etik Komite Onayı: Uygulanamaz.
Katılımcı Onamı: Uygulanamaz.
Hakem Değerlendirmesi: Dış bağımsız.
Yazar Katkıları: Fikir- H.Ç., N.H.K., F.D.Z.; Tasarım- H.Ç., N.H.K., F.D.Z.; Denetleme- N.H.K.; Kaynaklar- H.Ç., N.H.K., F.D.Z.; Veri Toplanması ve/veya İşlemesi- H.Ç., N.H.K., F.D.Z.; Analiz ve/ veya Yorum- H.Ç., N.H.K., F.D.Z.; Literatür Taraması- H.Ç., N.H.K., F.D.Z.; Yazıyı Yazan- H.Ç., N.H.K., F.D.Z.; Eleştirel İnceleme- H.Ç., N.H.K., F.D.Z.
Çıkar Çatışması: Yazarlar, çıkar çatışması olmadığını beyan etmiştir.
Finansal Destek: Yazarlar, bu çalışma için finansal destek almadığını beyan etmiştir.
Yapay Zekâ Kullanımı: Bu çalışmada olası anlatım bozukluklarının giderilmesi sürecinde yapay zekâ destekli dil araçları kullanılmıştır.

Ethics Committee Approval: Not applicable.
Informed Consent: Not applicable.
Peer-review: Externally peer-reviewed.
Author Contributions: Concept - H.Ç., N.H.K., F.D.Z.; Design- H.Ç., N.H.K., F.D.Z.; Supervision- N.H.K.; Resources- H.Ç., N.H.K., F.D.Z.; Data Collection and/or Processing- H.Ç., N.H.K., F.D.Z.; Analysis and/or Interpretation- H.Ç., N.H.K., F.D.Z.; Literature Search- H.Ç., N.H.K., F.D.Z.; Writing Manuscript- H.Ç., N.H.K., F.D.Z.; Critical Review- H.Ç., N.H.K., F.D.Z.
Conflict of Interest: The authors have no conflicts of interest to declare.
Financial Disclosure: The authors declared that this study has received no financial support.
Use of Artifical Intelligence: Artificial intelligence assisted language tools were used during the revision process to improve clarity and correct potential linguistic inconsistencies.

References

Al Husaeni, D. N. (2022). Development analysis research on physical education by mapping keywords using the VOSviewer application. *ASEAN Journal of Physical Education and Sport Science*, *1*(1), 9-16.

Arslan, E. (2022). Sosyal bilim araştırmalarında VOSviewer ile bibliyometrik haritalama ve örnek bir uygulama [Bibliometric mapping with VOSviewer in social science research and a sample application]**.** *Anadolu Üniversitesi Sosyal Bilimler Dergisi [Anadolu University Journal of Social Sciences], 22*(Özel Sayı 2), 33–56.

Bailey, R., Glibo, I., Koenen, K., & Samsudin, N. (2023). What is physical literacy? An international review and analysis of definitions. *Kinesiology Review*, 1–14. https://doi.org/10.1123/kr.2023-0003

Caldwell, H. A., Di Cristofaro, N. A., Cairney, J., Bray, S. R., MacDonald, M. J., & Timmons, B. W. (2020). Physical literacy, physical activity, and health indicators in school-age children. *International Journal of Environmental Research and Public Health*, *17*(15), 5367. https://doi.org/10.3390/ijerph17155367

Cairney, J., Dudley, D., Kwan, M., Bulten, R., & Kriellaars, D. (2019). Physical literacy, physical activity and health: Toward an evidence-informed conceptual model. *Sports Medicine*, *49*(3), 371–383. https://doi.org/10.1007/s40279-019-01063-3

Castelli, D. M., Centeio, E. E., Beighle, A. E., Carson, R. L., & Nicksic, H. M. (2014). Physical literacy and comprehensive school physical activity programs. *Preventive Medicine*, *66*, 95–100. https://doi.org/10.1016/j.ypmed.2014.06.007

Corbin, C. B. (2016). Implications of physical literacy for research and practice: a commentary. *Research Quarterly for Exercise and Sport*, *87*(1), 14–27. https://doi.org/10.1080/02701367.2016.1124722

Dudley, D. A. (2015). A conceptual model of observed physical literacy. *The Physical Educator*. https://doi.org/10.18666/tpe-2015-v72-i5-6020

Dudley, D., Cairney, J., Wainwright, N., Kriellaars, D., & Mitchell, D. (2017). Critical considerations for physical literacy policy in public health, recreation, sport, and education agencies. *Quest*, *69*(4), 436–452. https://doi.org/10.1080/00336297.2016.1268967

Durden-Myers, E., & Bartle, G. (2023). Physical-literacy-enriched physical education: A capabilities perspective. *Children*, *10*(9), 1503. https://doi.org/10.3390/children10091503

Donthu, N., Kumar, S., Mukherjee, D., Pandey, N., & Lim, W. M. (2021). How to conduct a bibliometric analysis: An overview and guidelines. *Journal of Business Research*, *133*, 285–296. https://doi.org/10.1016/j.jbusres.2021.04.070

Edwards, L. C., Bryant, A. S., Keegan, R. J., Morgan, K., & Jones, A. M. (2017). Definitions, Foundations and Associations of Physical Literacy: A Systematic review. *Sports Medicine*, *47*(1), 113–126. https://doi.org/10.1007/s40279-016-0560-7

Edwards, L. C., Bryant, A. S., Keegan, R. J., Morgan, K., Cooper, S., & Jones, A. M. (2018). 'Measuring' physical literacy and related constructs: A systematic review of empirical findings. *Sports Medicine*, *48*(3), 659–682. https://doi.org/10.1007/s40279-017-0817-9

Giblin, S., Collins, D., & Button, C. (2014). Physical literacy: importance, assessment and future directions. *Sports Medicine*, *44*(9), 1177–1184. https://doi.org/10.1007/s40279-014-0205-7

Gustian, U., Satrio, S., & Purmandaru, A. (2026). Mapping the integration of digital technologies in physical education: A bibliometric analysis of pedagogical trends and research trajectories. *Quest*, 1–20. https://doi.org/10.1080/00336297.2026.2632036

Higgs, C., Balyi, I., Way, R., Cardinal, C., Norris, S., & Bluechardt, M. (2008). Developing physical literacy: A guide for parents of children ages 0 to 12. Vancouver, BC: Canadian Sports Centres.

Hyndman, B., & Pill, S. (2017). What's in a concept? A leximancer text mining analysis of physical literacy across the international literature. *European Physical Education Review, 24*(3), 292–313. https://doi.org/10.1177/1356336x17690312

Jurbala, P. (2015). What is physical literacy, really? *Quest*, *67*(4), 367–383. https://doi.org/10.1080/00336297.2015.1084341

Keegan, R. J., Barnett, L. M., Dudley, D. A., Telford, R. D., Lubans, D. R., Bryant, A. S., Roberts, W. M., Morgan, P. J., Schranz, N. K., Weissensteiner, J. R., Vella, S. A., Salmon, J., Ziviani, J., Okely, A. D., Wainwright, N., & Evans, J. R. (2019). Defining physical literacy for application in Australia: A modified Delphi method. *Journal of Teaching in Physical Education*, *38*(2), 105–118. https://doi.org/10.1123/jtpe.2018-0264

Kirk, D. (2013). Educational value and models-based practice in physical education. *Educational Philosophy and Theory*, *45*(9), 973–986. https://doi.org/10.1080/00131857.2013.785352

Longmuir, P. E., Boyer, C., Lloyd, M., Yang, Y., Boiarskaia, E., Zhu, W., & Tremblay, M. S. (2015). The Canadian assessment of physical literacy: Methods for children in grades 4 to 6 (8 to 12 years). *BMC Public Health*, *15*(1), 767. https://doi.org/10.1186/s12889-015-2106-6

Longmuir, P. E., Boyer, C., Lloyd, M., Borghese, M. M., Knight, E., Saunders, T. J., Boiarskaia, E., Zhu, W., & Tremblay, M. S. (2017). Canadian agility and movement skill assessment (CAMSA): Validity, objectivity, and reliability evidence for children 8-12 years of age. *Journal of sport and health science, 6*(2), 231–240. https://doi.org/10.1016/j.jshs.2015.11.004

Longmuir, P. E., Gunnell, K. E., Barnes, J. D., Belanger, K., Leduc, G., Woodruff, S. J., & Tremblay, M. S. (2018). Canadian Assessment of Physical Literacy Second Edition: a streamlined assessment of the capacity for physical activity among children 8 to 12 years of age. *BMC Public Health*, *18*(S2), 1047. https://doi.org/10.1186/s12889-018-5902-y

Lounsbery, M. A., & McKenzie, T. L. (2015). Physically literate and physically educated: A rose by any other name? *Journal of Sport and Health Science/Journal of Sport and Health Science*, *4*(2), 139–144. https://doi.org/10.1016/j.jshs.2015.02.002

Lundvall, S. (2015). Physical literacy in the field of physical education – A challenge and a possibility. *Journal of Sport and Health Science/Journal of Sport and Health Science*, *4*(2), 113–118. https://doi.org/10.1016/j.jshs.2015.02.001

Martín-Martín, A., Orduna-Malea, E., & López-Cózar, E. D. (2018). Coverage of highly-cited documents in Google Scholar, Web of Science, and Scopus: a multidisciplinary comparison. *Scientometrics*, *116*(3), 2175–2188. https://doi.org/10.1007/s11192-018-2820-9

Mendoza-Muñoz, M., Vega-Muñoz, A., Carlos-Vivas, J., Denche-Zamorano, Á., Adsuar, J. C., Raimundo, A., Salazar-Sepúlveda, G., Contreras-Barraza, N., & Muñoz-Urtubia, N. (2022). The bibliometric analysis of studies on physical literacy for a healthy life. *International Journal of Environmental Research and Public Health*, *19*(22), 15211. https://doi.org/10.3390/ijerph192215211

Qian, H., Ren, X., Wang, H., & Zou, Y. (2025). Global insights and key trends in physical literacy research: A bibliometric analysis and literature review from 2007 to 2024. *Journal of Multidisciplinary Healthcare*, *18*, 2039–2055. https://doi.org/10.2147/jmdh.s515715

Richards, R. (2016). Physical literacy and sport. Canberra, Australia: Australian Sports Commission. United Nations Educational, Scientific and Cultural Organization (UNESCO).

SHAPE America (2014). National Standards and Grade-Level Outcomes for K-12 Physical Education. Human Kinetics.

Sum, R. K. W., Ha, A. S. C., Cheng, C. F., Chung, P. K., Yiu, K. T. C., Kuo, C. C., Yu, C. K., & Wang, F. J. (2016). Construction and validation of a perceived physical literacy instrument for physical education teachers. *PLoS ONE*, *11*(5), e0155610. https://doi.org/10.1371/journal.pone.0155610

Şahin, A., Karakaya, Y. E., & Dikmen, M. (2023). Mapping tendencies in curriculum research on physical education and sports: A Bibliometric analysis. *Participatory Educational Research*, *10*(3), 106–129. https://doi.org/10.17275/per.23.47.10.3

Taş, H., Yolcu, O., & Hürmeriç Altunsöz, I. (2024). Ulusal alanyazında yayınlanan bedensel okuryazarlık çalışmalarına bir bakış [An overview of physical literacy studies published in the national literature]. *Spor Bilimleri Dergisi [Journal of Sports Sciences], 35*(2), 102–117. https://doi.org/10.17644/sbd.1460000

Tremblay, M. S., Costas-Bradstreet, C., Barnes, J. D., Bartlett, B., Dampier, D., Lalonde, C., Leidl, R., Longmuir, P., McKee, M., Patton, R., Way, R., & Yessis, J. (2018). Canada's Physical Literacy Consensus Statement: Process and outcome. *BMC public health*, *18*(Suppl 2), 1034. https://doi.org/10.1186/s12889-018-5903-x

Whitehead, M. (2001). The concept of physical literacy. *European Journal of Physical Education*, *6*(2), 127–138. https://doi.org/10.1080/1740898010060205

Whitehead, M. (2007). Physical literacy: philosophical considerations in relation to developing a sense of self, universality and propositional knowledge. *Sport Ethics and Philosophy, 1*(3), 281–298. https://doi.org/10.1080/17511320701676916

Whitehead, M. (2010). *Physical literacy*. https://doi.org/10.4324/9780203881903

Whitehead M. (2013). Definition of physical literacy and clarification of related issues. *International Council of Sport Science and Physical Education Bulletin Journal of Sport Science and Physical Education*, *65*(12). https://www.icsspe.org/sites/default/files/bulletin65_0.pdf

Young, L., O'Connor, J., & Alfrey, L. (2019). Physical literacy: A concept analysis. *Sport Education and Society, 25*(8), 946–959. https://doi.org/10.1080/13573322.2019.1677586