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THE EFFECT OF SPORT ON STUDENTS' SOCIAL ATTITUDES AND CHARACTER: A BIBLIOMETRIC STUDY OF ATTITUDE EDUCATION RESEARCH"

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Abstract. This study examines the impact of sports attitude education on students' social attitudes and character through a bibliometric analysis of related literature. Using data from Scopus, the study identifies publication trends, influential authors, and popular keywords in sports attitude education from 2014 to 2024, encompassing 1,528 articles. The findings indicate that sports education significantly contributes to students' character development, emphasizing the importance of sports in education to support their social and personal growth. Additionally, the study finds that certain countries, such as the United States and the United Kingdom, maintain strong academic collaborations in this field. These findings provide insights for researchers and practitioners on the importance of integrating sports into school curricula to foster positive attitudes and character development in students.

Keywords: Physical Education, Students, Attitudes, Bibliometric Analysis, Research Trends,

I. INTRODUCTION

Sports education has long been recognized as an effective way to enhance students' physical and mental well-being. However, the benefits of sports education are not limited to physical health. It also plays a crucial role in shaping character and teaching values that are essential for success in life (Bisa, 2023). Attitude towards sports is an external variable that can only influence children through their sports behavior (Lian et al., 2021). Sports activities not only help students in terms of physical aspects, but they also enhance positive character and leadership skills (Marini et al., 2021). Students with a positive view of their physical abilities are more motivated to strive harder in PE (Sepriani et al., 2024). The importance of physical education (PE) in helping students acquire values and skills that support their motor, cognitive, emotional, personal, and social growth as well as their ability to integrate into society now and prepare them for the future is widely acknowledged (Opstoel et al., 2020). Sports and physical education are vital components of education in the modern era. School-aged children and adolescents should participate in moderate-to-vigorous PA for at least 60 minutes each day (Hutzler et al., 2019). Physical education is not only about ensuring physical fitness, it also has a holistic approach that provides students with the knowledge, skills and attitudes necessary to adopt a healthy lifestyle (Sarikabak et al., 2024; Marheni et al., 2024).

Research has shown that sports education can have a positive impact on character development. Hellison and Templin conducted a study and found that sports education can increase personal and social responsibility among students (Ellison et al., 2019). A vital component of everyone's health is sport; via exercise, people can get fitter (more than healthy) (Paramitha et al., 2022). Sports have long been recognized as an important activity in the field of education, not only to improve physical health but also to shape students' character and social attitudes (Kumar, 2017). Sports and physical activity are great ways to spread values that lead to social and personal growth (Domínguez et al., 2021). Positive character development could be accomplished through the learning exercises in physical education and sports classes. Sports and physical education are seen as suitable ways to help students improve their social and personal skills, including cooperation, social responsibility, and other prosocial abilities, because of their social nature (Franco et al., 2021). Integrating sports learning with life skills can enable students to engage actively with their community and outside the school environment, even without teacher supervision (Fitri et al., 2020). According to the social learning perspective, attitudes, like other human characteristics, are the outcome of interactions between task- and activity-specific or environmental and personal elements, all of which influence behavioral intentions and, eventually, the behavior that results (Hutzler et al., 2019). Attitudes are a person's internal

states or attitudes toward anything that they can assess (Díez-Palomar et al., 2020). Although there is considerable research supporting the impact of sports on students' attitudes and character, there remains a lack of studies analyzing the development of literature and research trends related to this topic globally

Bibliometrics is the study of the measurement and analysis of information contained in scientific publications, but not specifically related to physical activity. Bibliometric analysis is a popular and rigorous method for exploring and analyzing large volumes of scientific data (Donthu et al., 2021 (Ahmad Karisman et al., 2024)). This popularity is caused by a number of factors, such as the advancement, availability, and accessibility of scientific databases like Google Scholar, Scopus, and Web of Science as well as bibliometric tools like R and VOSviewer (Passas, 2024). As a result, this method distinguishes between two forms of scholarly research that mainly address the findings of a particular topic: review papers and bibliometric analyses (Alsharif & Baharun, 2020). The primary focus of this study is to conduct a bibliometric analysis of research related to physical education and associated topics between 2014 and 2024. This study aims to examine the keywords selected by the authors, analyze publications and citations, papers, top authors, journals, and countries that are active in this field. This study aims to examine the keywords selected by the authors, analyze publications and citations, papers, top authors, journals, and countries that are active in this field. Through these findings, researchers and readers can understand the importance of sports on the social attitudes and character of a student. With these findings, researchers and readers can identify research gaps that have not been widely discussed, as well as understand the current and future areas of study.

II. METHODS

We began this investigation by utilizing bibliometric analysis to gather a large body of literature related to the impact of sports on students' attitudes and character. Bibliometric studies address various units of analysis, including documents (publications), authors, organizations (research institutions), countries, journals (source titles), or keyword (Lis, 2020). Database as the main source for bibliographic research on this topic. This involved a comprehensive background analysis covering approximately 1,528 articles over 10 years, from 2014 to 2024. Our exploration of the Scopus database on 16 October 2024 aimed to collect journals and articles. Using a science mapping approach, we studied the existing literature and analyzed bibliographic data taken from various documents in this field (Apriady et al., n.d.)

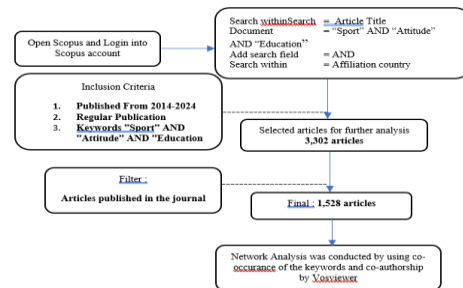


Fig. 1. Document Article Filtering Process in Scopus

To increase the relevance of our data, we narrowed our search to specifically focus on the topics of sports, attitudes, and education, extracting relevant information such as details, quotes, abstracts, keywords and other findings. We used keywords such as “sports attitudes” and “student character”. Our search concentrated solely on article titles to ensure truly relevant reports, as overly broad searches can overlook clearly related studies. The specific keywords used in our search are outlined below.

TITLE-ABS-KEY (sport AND attitude AND education) AND PUBYEAR > 2013 AND PUBYEAR < 2025 AND (LIMIT-TO (DOCTYPE , "ar")) AND (LIMIT-TO (LANGUAGE , "English"))

III. RESULTS

1) DOCUMENT PUBLISHED

Based on the "Document of Year" graph, it can be noted that 110 articles were published in 2014. In 2015 and 2016, there was a decline to 105 and 99 articles, respectively. In 2017 and 2018, the numbers increased again to 126 each year. In 2019 and 2020, the number of article publications rose further to 138 and 149. In 2021 and 2022, the number of published articles continued to increase, reaching 179 and 180. However, in 2023-2024, there was a decline again to 164 and 163 articles. there will be a decline in 2023-2024 which explains that research on sports attitude education is becoming less popular

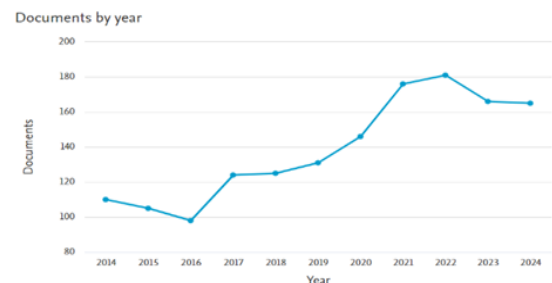


Fig. 2. Document Published on Scopus Databased

In Table 1, there are the top 10 authors with the most influential articles in Sport Attitudes Education research. The first position is held by Kroshus et al., with 266 citations. The second position is occupied by Sukendri et al., with 228 citations. In third place is Shields & Synnot with 217 citations. Casey holds the fourth position with 173 citations. The fifth position is held by Kroshus, Baugh et al., with 173 citations. In

sixth place is Stoszkowski & Collins with 163 citations. The seventh position is held by Hing et al., with 159 citations. Dijkstra et al. occupy the eighth position with 157 citations. The ninth position is held by Kroshus et al., with 138 citations, and Radu et al. take the tenth position with 109 citations. This table summarizes the most influential articles and their respective citation counts.

Table 1. Top 10 articles with the most citations on Scopus

No.	Document Title	Authors and Year	Citation Total
1.	Concussion under-reporting and pressure from coaches, teammates, fans, and parents	(Kroshus et al., 2015)	266
2.	Using an extended Technology Acceptance Model to understand students' use of e-learning during Covid-19: Indonesian sport science education context	(Sukendro et al., 2020)	228
3.	Perceived barriers and facilitators to participation in physical activity for children with disability: A qualitative study	(Shields & Synnot, 2016)	217
4.	Models-based practice: Great white hope or white elephant?	(Casey, 2014)	174
5.	Understanding concussion reporting using a model based on the theory of planned behavior	(Kroshus, Baugh, et al., 2014)	173
6.	Sources, topics and use of knowledge by coaches	(Stoszkowski & Collins, 2016)	163
7.	Risk factors for gambling problems: An analysis by gender	(Hing et al., 2016)	159
8.	Managing the health of the elite athlete: A new integrated performance health management and coaching model	(Dijkstra et al., 2014)	157
9.	NCAA concussion education in ice hockey: An ineffective mandate	(Kroshus, Daneshvar, et al., 2014)	138
10.	The impact of the COVID-19 pandemic on the quality of educational process: A student survey	(Radu et al., 2020)	109

2) Author Analysis

Figure 3 illustrates that among the 10 most productive researchers in the field of Sport Attitude Education, several have made significant contributions through their publications. Table 2 shows that Kroshus, Baugh, Mihlaik Jona, Jonaldson, and Samiento have all provided valuable contributions, with nine to twenty-four publications offering insights into sports education. They are followed by Belski, Daneshvar, Gildner, Kay, and Valovic McLeod, who have made important contributions with six to eight

articles highlighting key aspects of Sport Attitude Education research. However, in terms of citation count, the order of authors shifts, with Kroshus having the highest citations, demonstrating an impressive level of productivity with twenty-four articles. These researchers reflect their commitment to innovation and advancing knowledge in the field of Sports Education.

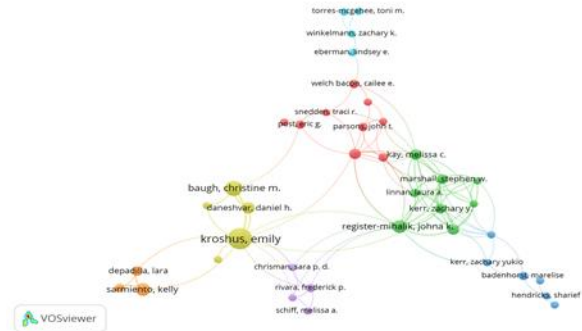


Figure 3. Productive Authors based on Documents and Citation

Table 2. Authors, documents and citations.

No.	Author	Doc.	Cite	No.	Author	Doc.	Cite
1.	Kroshus, Emily	24	922	6.	Belski, Regina	8	339
2.	Baugh, Christine	12	862	7.	Daneshvar, Daniel h	7	457
3.	Register	9	145	8.	Gildner, Paula	6	45
4.	Donaldson, Alex	9	295	9.	Kay, Melissa c	6	59
5.	Samiento, Kelly	9	116	10.	Valovic mcleod, Tamara c	6	162

3) Country Analysis

Table 3 lists the top 10 countries based on document production in the field, with the United States leading with 409 documents, followed by the United Kingdom with 151 documents, and Spain, Australia, and China each contributing 119, 119, and 103 documents, respectively. Table 3 also shows the top 10 countries based on citations, where the United States ranks first with 6,134 citations, followed by the United Kingdom with 2,853, and Australia with 2,777 citations. Figure 4 illustrates the distribution of collaboration networks, highlighting the United States as the most central country, followed by the United Kingdom, Australia, Spain, and China. These countries demonstrate strong academic collaboration and significant presence in the field, reflecting their leadership and influence in Sport Attitude Education research."

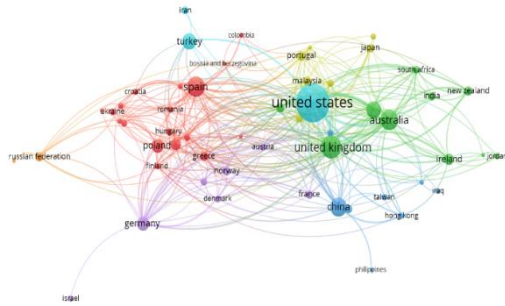


Fig 4. Most productive countries based on documents and citations
 Table 3. Country, documents and citations.

No.	Author	Doc.	Cite	No.	Author	Doc.	Cite
1.	United States	409	613	6.	Canada	81	136
2.	United Kigdom	151	285	7.	Turkey	73	340
3.	Spain	119	113	8.	Poland	54	265
4.	Australia	119	277	9.	German y	54	544
5.	China	103	462	10.	Italy	41	639

4) Co-occurrence Analysis of Keywords

In this study, co-word analysis (co-occurrence of keywords) was carried out using the VOSviewer software (Taqi, 2019). Therefore, analyzing keyword changes can reveal the characteristics and evolution trends of publications (He et al., 2023). This analysis makes the assumption that terms that come together a lot in the same review documents are related (Narong & Hallinger, 2023)

Keywords can provide core information about the content of an article, and when two or more keywords appear together in the same article, they are referred to as co-keywords (Guo et al., 2019). Co-keyword analysis is used to explore the relationships between concepts or themes within a literature, revealing patterns of association and helping to identify groups of related research topics. This method is valuable for understanding the interconnections of ideas and themes across academic disciplines or specific fields of study, facilitating insights into prevailing themes and emerging trends in the scientific literature (Su & Lee, 2010). In the realm of scientific knowledge, co-keyword analysis can be used to identify popular research topics and track research. In this study, we created a co-keyword graph using the co-keyword function in VOSviewer, employing a fractional counting method, setting a minimum occurrence of 2 for keywords, and using author keywords as the unit of analysis. Each cluster has been grouped and presented in Table 4 and Figure 5 of the cluster analysis

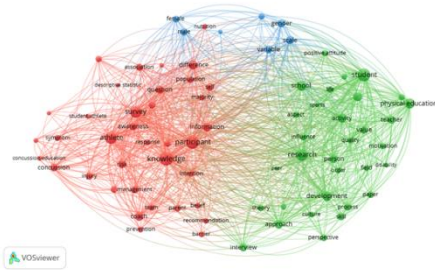


Fig 5. Keyword Analysis

Table 4. Clusters and Keywords based on VOSviewer

Cluster	Item	Colour	Present	Total
Cluster 1	Association, athlete, awareness, barrier, belief, coach, concussion, concussion education, concuision knowledge, cross sectional study, descriptive statistic, difference, high school, Information, injury, intention, knowledge, main outcome measure, majority, management, measure, nutrition, parent, participant, player, population, prevention, question, recommendation, respondent, response, risk, self, student athlete, survey, symptom, team	Red	49%	37
Cluster 2	Activity, approach, aspect, class, course, culture, development, disability, field, influence, interview, life, motivation, opportunity, order, paper, peer, person, perspective, physical activity, physical education, positive attitude, process, quality, research, chool, skill, sports, student, teacher, theory, value	Green	43%	32
Cluster 3	Attitudes, female, gender, male, scale, significant difference, variable	Blue	9%	7
Total			100 %	76

IV. DISCUSSION

Based on the research results, several key findings emerge regarding research trends and contributions in the field of Sport Attitude Education from 2014 to 2024. The publication trend analysis shows a fluctuating pattern over the decade, with significant peaks in 2020, 2021, and 2022, indicating increasing interest and investment in this area of study. However, there was a decline in publication trends in this field in 2023 and 2024. The significant impact article based on the highest

number of citations was written by Kroshus in 2015, titled 'Concussion under-reporting and pressure from coaches, teammates, fans, and parents,' which has accumulated 266 citations. This article discusses the importance of addressing sports injuries in students.

Figure 3 highlights the significant contributions of the 10 most productive researchers, such as Kroshus, Baugh, Register, Donaldson, Sarmiento, and Belski, who have collectively published numerous meaningful articles in this domain. These contributions not only enrich the academic discourse but also reflect a commitment to advancing knowledge and innovation in adapting sport attitude education for students. Additionally, the citation analysis emphasizes the significant impact of Kroshus's extensive work in this field. Tables 3 and 4 provide insights into the global landscape of research productivity and impact. The United States emerges as the leader in document production and citations, followed by the United Kingdom and Spain. As the top contributor, the U.S. has established strong collaboration networks with countries including the UK, Spain, Australia, and China, highlighting the global nature of research efforts in sport attitude education.

This study also employs co-keyword analysis to uncover relationships and thematic clusters among research topics. This methodological approach facilitates the identification of key themes and emerging trends within the literature, offering a structured understanding of the interconnections of ideas and facilitating future research directions. From the emergence of keywords, the topic of physical education for individuals with disabilities is particularly interesting to explore. Physical activities have a significant impact on students' character and social attitudes. This can be seen from the clusters and percentage occurrences, such as in Cluster 1: 'Association, athlete, awareness, barrier, belief, coach, concussion, concussion education, concussion knowledge, cross-sectional study, descriptive statistic, difference, high school, information, injury, intention, knowledge, main outcome measure, majority, management, measure, nutrition, parent, participant, player, population, prevention, question, recommendation, respondent, response, risk, self, student athlete, survey, symptom, team,' which are frequently mentioned keywords in the analysis documents. However, many issues remain under-researched or require further investigation, such as how various approaches to Sport Education can influence the social and character development of students. Overall, this comprehensive analysis provides valuable insights into the evolution, trends, and collaborative dynamics of research in Sport Attitude Education. These findings not only inform current scholarship but also serve as a roadmap for future research aimed at improving students' attitudes and character through sports and physical education.

This study has several limitations that need to be considered. First, there is a reliance on English-language publications indexed in Scopus. Second, there is a lack of articles related to the theme, especially from indexed or non-indexed sources. Third, this analysis is constrained by data availability up to 2024, which may miss recent developments beyond this period. Fourth, despite efforts in keyword selection, some relevant articles may have been overlooked,

affecting the comprehensiveness of the study. These limitations underscore the need for future research to address these gaps and provide a more comprehensive understanding of the influence of sports on students' attitudes and character.

V. CONCLUSION

In summary, this study provides insights into the impact of sports attitude education on students' social attitudes and character. Bibliometric analysis shows that sports education has a positive effect on character formation, social responsibility, and students' social skills. Through data analysis from Scopus, the study identifies publication trends from 2014 to 2024 and highlights influential countries, authors, and keywords in this field. The United States leads research contributions with the highest number of publications and significant international collaboration, followed by the United Kingdom, Spain, Australia, and China.

Several prominent researchers, such as Kroshus and Baugh, have made significant contributions with high publication and citation counts. Keyword analysis reveals key themes, including sports education for individuals and the impact of physical activity on students' social attitudes. The study also highlights certain limitations, such as reliance on English-language publications and data limited to 2024. These findings offer insights for future research on the development of students' attitudes and character through physical education and sports.

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