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Bibliometric Analysis of Studies on Philosophy for Children In the Field of Education

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Abstract

The purpose of this study was to present a bibliometric analysis of scientific articles published in internationally indexed Web of Science (WoS) journals on the topic of philosophy for children in the field of education. This study of articles in the field of education focused on several key fields, including the number of studies, the journals in which they were published, an analysis of authors, the distribution of institutions and countries, the use of keywords, and the identification of general trends. The Bibliometrix program in the R library was employed for the analysis of the research. As a consequence of this analysis, 1120 articles published between 1977 and 2024 were identified as meeting the requisite criteria. In the field of education, the journal in which articles on "philosophy for children" were published most frequently was "Childhood and Philosophy". The author with the highest number of studies, citations, and index value in this field was K. Murris. The country in which the most studies were conducted was the United States of America, and the institution where the most studies were conducted was Montclair State University. The most significant keyword in this field was "philosophy for children". It is hypothesized that this comprehensive presentation of research findings will serve as a valuable reference point for future research endeavors and inform the direction of future research.

Key Words

Bibliometric analysis • Educational research • Philosophy for children

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Introduction

The period of childhood is of great significance with regard to the acquisition of knowledge, during which the individual experiences rapid and pronounced growth and development (Senemoğlu, 2009). It can be posited that the sentiments of innocence, curiosity, and discovery that emerge during this process exert a significant influence on the child's cognitive and emotional development. During this period, the mind attempts to make sense of the world over time, resulting in the development of cognitive processes and abilities that facilitate comprehension of life, individuals, and occurrences. Philosophy for children can be defined as an approach that facilitates the development of critical thinking, communication, and self-expression in children. The primary objectives of education, encompassing the child's ability to understand and interpret life, acquire essential life skills, and develop into a critical, inquisitive, and democratic citizen, have provided direction to philosophical studies conducted in the field of children's education.

The Philosophy for Children (P4C) approach is grounded in the universal nature of philosophy and the human cognitive process. Philosophy, as articulated by Aristotle in Ancient Greece, begins with curiosity and thus its origins trace back to the very existence of humanity. The curiosity and questioning of children and adults about life challenges the assumption that philosophy is not a relevant aspect of everyday life. We all engage in inquiries and hold philosophical beliefs, whether we are aware of it or not (Law, 2010; White, 2009).

In their initial interactions with the world, children typically begin their inquiries with questions such as "Why?", "What is this?" and "How?" which reflect their fundamental curiosity and desire to understand their surroundings. This approach is exemplified in dialogues such as those of Socrates, who believed that knowledge was not acquired through writing alone, but through dialogue and the asking of questions. Socrates views this approach as a means of acquiring knowledge and engaging in critical inquiry (Noddings, 2017). These dialogues with children are sometimes based on old questions that have been around for a long time, or new questions that have arisen depending on the time and context, or questions about everyday life.

Thinking is a natural function of the mind, whereas questioning is a skill that can be developed. One of the most crucial objectives of contemporary educational institutions is to enhance the cognitive abilities of their learners (Güneş, 2012). Furthermore, educators should integrate additional strategies to reinforce students' comprehension and abilities, as well as to comprehend the internal workings of their cognitive processes (Tekerci & Kılınç, 2023). The fostering of questioning as an important goal in environments that employ a philosophy of education that is conducive to dialogue and critical thinking is also regarded as a significant factor in the development of children's cognitive abilities (Kökten, 2023). Furthermore, the educational perspectives and philosophies of parents also influence the educational trajectory of their children (Yılmaz et al., 2023).

It is therefore surmised that the activities undertaken with the P4C approach will prove beneficial to children in a number of ways, particularly in relation to their emotional and mental development. First and foremost, despite the evolving roles of teachers and students, the most crucial skill to be cultivated is the capacity for critical thinking (Kurt et al., 2023). Philosophy encompasses a range of skills, including imagination, critical thinking, and logical reasoning.

The study of philosophy for children in education, as well as the Philosophy for Children (P4C) movement, may be traced back to the 1970s work of philosophers such as Matthew Lipman and Ann Sharp (Lipman & Sharp,

1978). Process-oriented approaches such as P4C facilitate the development of these skills through questioning and dialogue, while also imparting knowledge about reasoning (Fisher, 2001; Pardeles & Girod, 2006; Daniel & Auriac, 2011). Communication and empathy skills are essential for individuals to possess throughout their lifespan. These skills form an integral component of emotional intelligence, necessitating the ability to view events and situations from diverse perspectives, comprehend the sentiments, thoughts, and actions of others, and integrate these insights into one's own actions (Katz & Hadani, 2023). In accordance with the advancement of these competencies, the philosophy for children approach enables children to comprehend the world and the multifarious experiences within and beyond the academic setting. It facilitates their development into articulate and reasonable individuals, enables them to investigate their own ideas in relation to the ideas of others, and, on occasion, provides them with the reassurance that their peers share their sentiments and thoughts (Shaw, 2007). Philosophy also cultivates in children the capacity to understand their own feelings, thoughts, and beliefs; to embrace freedom and independence; to engage in creative thinking; and to question knowledge (Fisher, 2001; Lipman, 1995; Shaw, 2007; Trickey & Topping, 2004). This approach engages children's natural inclination towards curiosity and wonder, facilitating the development of their reasoning abilities, comprehension, and pursuit of meaning. Such activities facilitate the development of self-confidence and self-esteem (Shaw, 2007). Given the significance of philosophical inquiry for children, researchers engage in a range of studies employing diverse research methodologies. One such methodology is bibliometric analysis.

Bibliometric analysis is a method that provides information about the development, impact, and structure of the literature by evaluating the scientific literature of the relevant subject from various perspectives (Aria & Cuccurullo, 2017; Oliveira et al., 2019; Van Eck & Waltman, 2010). This analysis assesses trends and activity in a specific research area through a comprehensive review of scientific articles, authors, journals, keywords, and citations (Mongeon & Paul-Hus, 2015; Zupic & Čater, 2015). The most commonly employed techniques include citation analysis, co-author analysis, common word analysis, and scientific mapping. In particular, citation analysis examines the interconnections between academic papers to identify which studies have had a significant influence on the field. Co-author and vocabulary analysis, on the other hand, map out research areas and themes (Donthu et al., 2021; Garfield, 2009; Small, 1973). Moreover, scientific mapping and clustering techniques are instrumental in elucidating pivotal research domains and trends within the field, as they facilitate the visualization of the structure of publications (Cobo et al., 2011; Waltman et al., 2010). Researchers who intend to engage in international collaboration may utilize the findings of the present study to contact authors, countries, and organizations that are more amenable to such endeavors, thereby facilitating the production of joint publications. In this context, bibliometric data provides the potential for identifying collaborative opportunities and sources of support for research projects with an interest in the relevant subject area (Yıldızhan & Atmaca Aksoy, 2023).

In recent years, there has been a notable increase in the number of studies conducted in the field of philosophy for children in Türkiye. These studies are primarily based on the practical application of philosophical principles with children, particularly through the analysis of children's literature. Additionally, studies have been conducted to examine the existing literature and gain insight into the various research orientations that have emerged within this field. The research conducted by Durmuş and Çalışkan (2022) revealed that there has been a notable increase in studies conducted in the field of philosophy for children in Türkiye, including graduate theses and articles published in Turkish journals, over the past five years. Additionally, there has been a significant rise in the number of theoretical and review studies carried out in this area. In the comprehensive literature analysis conducted by

Lafcı Tor (2023), 14 master's theses, 7 doctoral dissertations, and 10 academic articles published between 2008 and 2023 were examined.According to the research findings, the reviewed studies primarily focused on the effects on participants' thinking skills, social competencies, philosophical thinking capacities, cognitive achievements, and creativity levels. Moreover, Lafcı Tor emphasized the absence of standardization in the terminology employed, particularly concerning the approaches, methods, and techniques utilized in these studies. Furthermore, Dirican (2024) conducted a bibliometric study encompassing all forms of publications across all domains of philosophical inquiry pertaining to children.

Apart from the above studies, no research examining Philosophy for Children (P4C) conducted in our country has been identified. One of these studies is a content analysis (Durmuş & Çalışkan, 2022), and another is a systematic review (Lafcı Tor, 2023). The study conducted by Dirican (2024) is a bibliometric analysis. What distinguishes the current research, which examines Philosophy for Children bibliometrically, from other studies is its exclusive focus on articles conducted in the field of education. In bibliometric studies, the commonalities and differences of prior research in the field are identified through bibliometric analysis. Therefore, the research questions guiding this study are presented below.

In the field of education, related to philosophy for children;

- How is the analysis of the publications?
- How is the analysis of authors in publications?
- How is institutional analysis in publications?
- How is country analysis in publications?
- How is the structure of the keywords in the publications?

Method

Research Model

The research was carried out using the method of bibliometric analysis to examine scientific studies on philosophy for children in the field of education published in internationally indexed journals (Web of Science: SSCI, SCI-Expanded and AHCI). Bibliometrics is the quantitative measurement of the characteristics of documents related to publications in a field of research. Bibliometrics makes scholarly activity visible by examining the productivity, impact, and information flow of scholarly publications (Broadus, 1987; Pritchard, 1969). Bibliometric analysis is a method of analysis based on the systematic examination of various characteristics of scientific publications. These analyses aim to reveal the overall profile of a research field by evaluating scientific output, citation data, keywords, co-citation networks and author productivity (Ellegaard & Wallin, 2015; Thelwall, 2008; Zupic & Čater, 2015). Bibliometric analyses are used to determine the evolution of research over time, leading authors, institutions, and impact levels of publications (Cobo et al., 2011; Perianes-Rodriguez et al., 2016). In this context, the bibliometric analysis procedure highlighted in the literature and commonly used was applied. This procedure is as follows (Aria & Cuccurullo, 2017; Cobo et al., 2011; Ellegaard & Wallin, 2015; Van Eck & Waltman, 2014; Waltman, 2016):

1. **Identifying the Study Question**: Before conducting a bibliometric analysis, it is necessary to define a clear research question or objective. This defines the topic, time period and types of publications to be analyzed.

2. **Data Collection:** Various databases (e.g. Web of Science, Scopus, PubMed) are used to collect data relevant to the research question. At this stage, relevant publications are searched and downloaded using criteria such as keywords, authors, year of publication and journals.
3. **Data Cleansing and Preparation:** Data collected can often be disorganised and incomplete. Data cleaning involves removing duplicate records, completing missing data and making the dataset suitable for analysis.
4. **Analysis and Processing:** Bibliometric analysis involves various statistical and visualisation techniques. These include co-authorship analysis, citation analysis, co-term analysis and network analysis. These analyses reveal key trends in the research field, the most influential works and authors, and cross-cutting connections.
5. **Visualisation:** Some analyses are presented using different visualisation methods such as maps, network diagrams, word clouds and time series charts.
6. **Interpreting and Reporting Findings:** The findings of the analysis are interpreted in a way that helps to answer the research question. The findings are organised into a written report or article to be shared with the scientific community. The report should identify knowledge gaps, trends and future research directions in the research field.

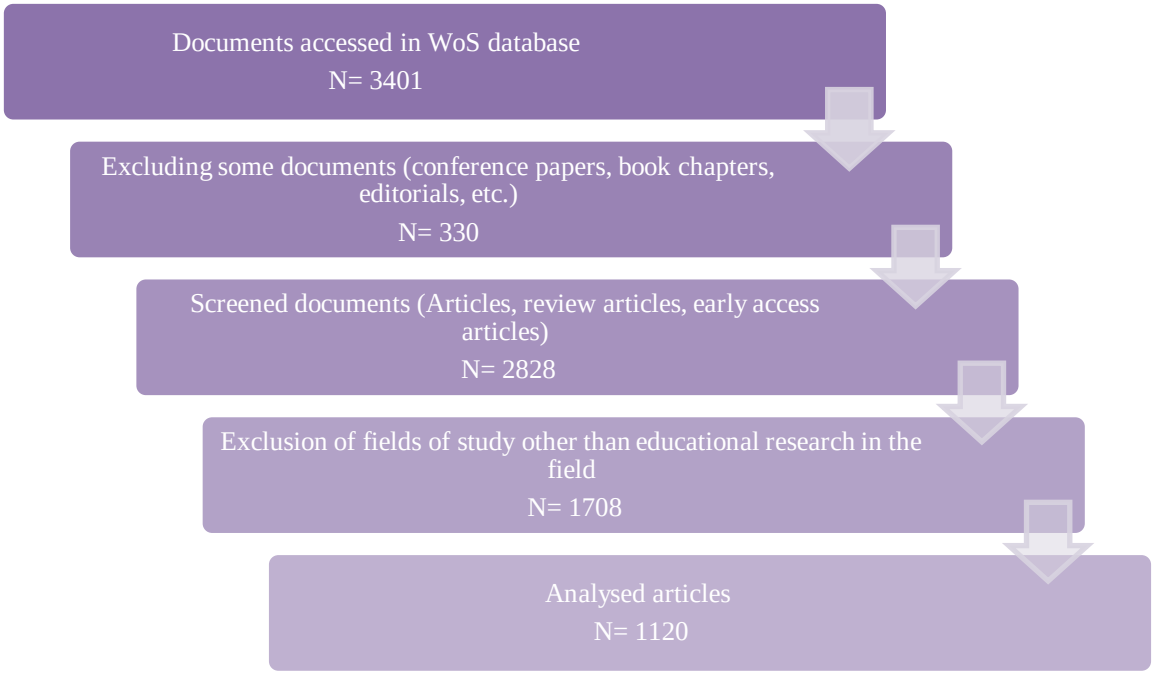
The purpose of the bibliometric analysis method was to examine and summarise the scientific studies in the literature on philosophy for children in the field of education according to the defined criteria. In this way, it aims to provide a different perspective on the literature by better understanding and evaluating the literature on the research topic.

Data Set

The study analysed relevant publications scanned in the Web of Science (WoS) database produced by Clarivate Analytics. The researchers preferred WoS because it contains scientific publications (journals, proceedings, online books, editorial materials) with a high impact value scanned in indexes such as SCI, SSCI, AHCI worldwide, because of the accessibility of the database and the possibility to download data from the scanned journals suitable for bibliometric analysis programs and to filter the desired data. In comparison to the Web of Science (WoS), Scopus, Dimensions, and Google Scholar, WoS is the most preferred database for bibliometric studies due to its rigorous indexing standards and reliable citation analysis tools. The selectivity of WoS enables it to concentrate on basic science studies, particularly in high-quality journals (Birkle et al., 2020; Singh et al., 2021). While Scopus and Dimensions offer broader coverage in the field of applied sciences, they are less precise in data accuracy and less consistent in citation standardization (Stahlschmidt & Stephen, 2021; Visser et al., 2020). While Google Scholar offers a comprehensive scope, it is less reliable than selective databases such as WoS in bibliometric analyses due to concerns regarding data accuracy, transparency, and high self-citation rates (Gusenbauer & Haddaway, 2020; Levine-Clark & Gil, 2021). In this context, a search was carried out in the WoS database on 19.10.2024 to access scientific publications on philosophy for children in the field of education. In this search, the subject field option was preferred for each concept, and the concept “philosophy” was entered first, and then the concept “children” was entered by combining it with AND. The result of the search was a total of 3401 scientific publications. Some operations were then carried out according to the purpose of the study (see Table 1).

Table 1

Roadmap for Obtaining Research Data



As can be seen from Table 1, only articles related to the research topic were selected from the WoS database. Among these articles, preference was given to articles in the field of Educational Research, and the research was based on the analysis of these articles. It was assumed that the 1120 articles obtained as a result of these screening and filtering processes were suitable for the purpose of the study.

Data Analysis

The output (.bib) of the bibliographic data in the study consists of data such as author name, title, author institution and country, keywords, abstract. The data obtained in the research were analysed using descriptive analysis and mapping techniques. For these analyses, the program Bibliometrix in the R library was used (Aria & Cuccurullo, 2017). Bibliometrix was developed by Massimo Ariaa and Corrado Cuccurullob from Italian universities as a software tool for scientific mapping analysis. In comparison to other programs, Bibliometrix's comprehensive features, encompassing data preprocessing, performance analysis, science mapping, and visualization, are particularly noteworthy (Moral-Muñoz et al., 2020). To illustrate, the Biblioshiny interface offers a user-friendly experience that does not require technical expertise, while simultaneously supporting sophisticated analyses such as co-citation, trend analysis, and thematic mapping (Darvish, 2018). Furthermore, its compatibility with multiple databases, including Web of Science, Scopus, and PubMed, makes it an optimal choice for integrated analysis of data from disparate sources. As a result of the analysis performed with this tool, results such as distribution of studies by years, author rankings, journal distributions, institution distributions, citation rankings, co-author citation network and common word analysis are reported.

Validity and Reliability

For the validity of the study, the process of obtaining the data and the date when the dataset was collected were explained in detail. The steps involved in the data analysis process and the reasons for choosing the bibliometric

analysis method were included. To ensure the reliability of the sudy, the findings were presented directly and discussed in accordance with the study.

Findings

The results of the study were analysed according to the research questions. In this context, the bibliometric and descriptive findings of the data analysed in relation to the research questions are presented below.

Analysis of Publications on Philosophy for Children in the Field of Education

Distribution of Publications by Year

In the field of education, there were 1120 articles on philosophy for children. Figure 1 shows the distribution of articles in this field by year.

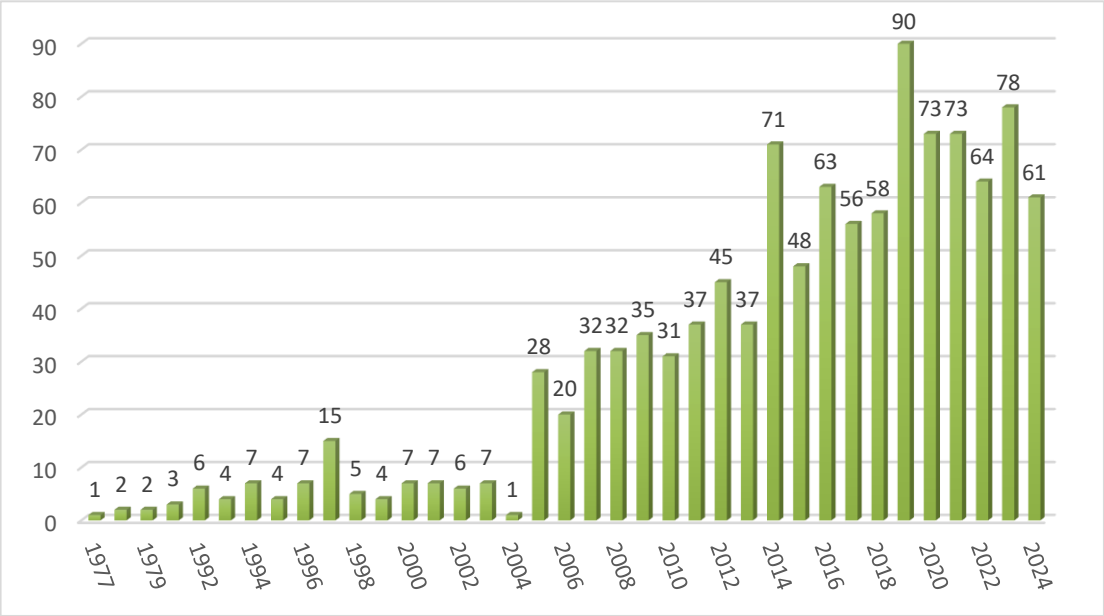


Figure 1. Distribution of publications in the field of education by years

Figure 1 shows that research publications started in 1977. The highest number of publications was in 2019 (90 publications), while the lowest number was in 1977 and 2004 (one publication each). In the field of education, publications on philosophy for children started to increase from 2005 onwards. In 2023, 78 publications were identified and in 2024, 61 publications were identified at the time of the review.

Journal Analysis of Publications

In the field of education, 309 journals published on philosophy for children. Figure 2 shows the top 10 journals with the highest number of publications in this field.

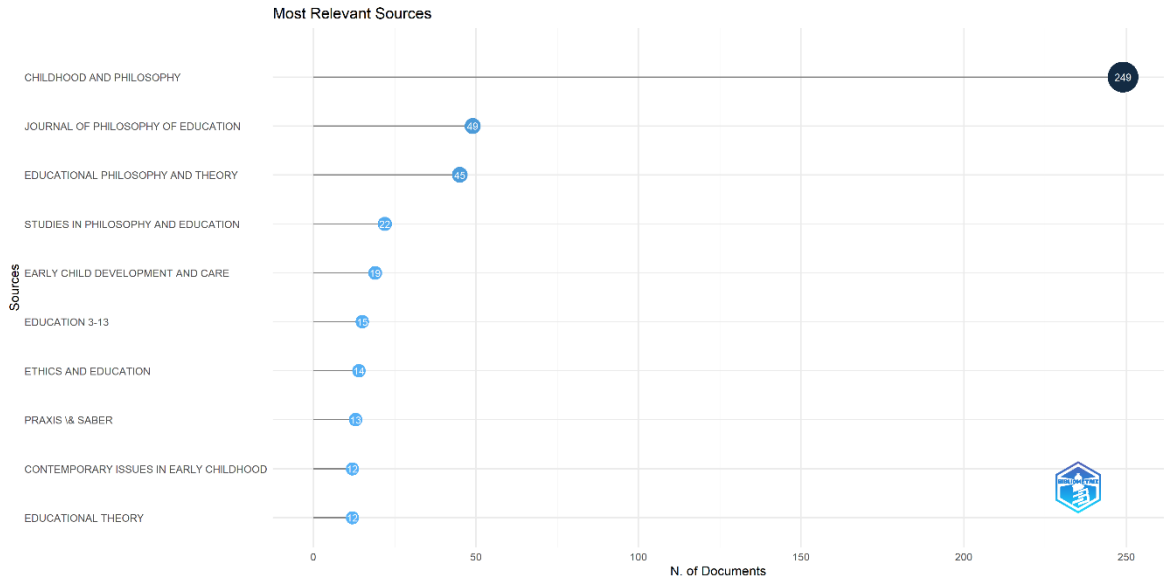


Figure 2. Distribution of publications in the field of education by journals

Table 2

The Effectiveness of Philosophy-Related Journals for Children in the Field of Education

No	Journal	h_index	g_index	m_index	Total Citations	Total Articles	Publication Start
1	Journal of Philosophy Of Education	14	24	0,56	633	49	2000
2	Educational Philosophy and Theory	13	18	0,813	424	45	2009
3	Childhood and Philosophy	8	13	0,4	371	249	2005
4	Studies in Philosophy and Education	8	15	0,471	243	22	2008
5	Early Child Development and Care	7	12	0,368	162	19	2006
6	Contemporary Issues in Early Childhood	6	12	0,3	144	12	2005
7	Thinking Skills and Creativity	6	8	0,375	106	8	2009
8	American Annals of The Deaf	5	9	0,152	93	9	1992
9	Australasian Journal of Early Childhood	5	6	0,313	44	8	2009
10	Ethics and Education	5	11	0,263	121	14	2006

Upon examination of Table 2, it becomes evident that the Journal of Philosophy of Education has the highest number of publications related to philosophy for children in the field of education, with an h-index value of 14 and a g-index value of 24. This indicates that the journal has a high citation impact, with a notable number of articles receiving significant attention from the academic community. It is noteworthy that the journal Educational Philosophy and Theory has a high h-index (13) and g-index (18), as well as the highest m-index (0.813). This indicates that, despite being a relatively new publication, the journal has been able to make a significant impact in a relatively short time. Furthermore, Childhood and Philosophy and Studies in Philosophy and Education also merit mention, with an h-index of 8. Of these, Childhood and Philosophy has received over 300 citations in total and is the most prolific journal, with 249 articles published. Studies in Philosophy and Education has a g-index of 15 and an m-index of 0.471. It should be noted that other journals have lower index values, yet they contribute to the advancement of the research field. Furthermore, the publication years of the journals included in the table span a period between 1992 and 2009, with the majority of them commencing publication in the 2000s.

Analysis of Authors Related to Philosophy for Children in the Field of Education

Authors' Publication Distribution

In the field of education, 200 authors have published on the subject of philosophy for children. Figure 3 illustrates the 10 most prolific authors in this field, ranked according to the number of publications.

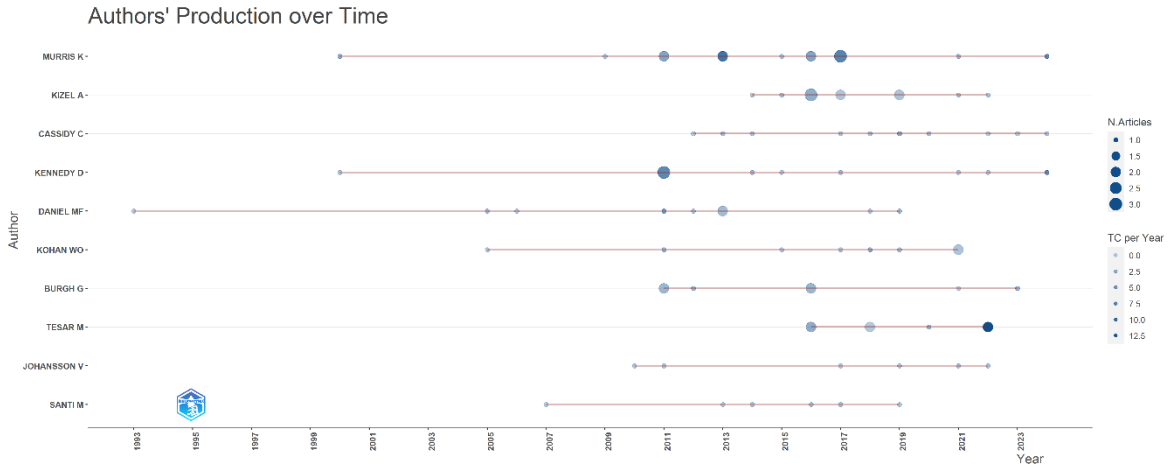


Figure 3. Authors' production

The data presented in Figure 3 encompasses the 30-year interval between 1993 and 2023 and illustrates the number of publications and annual citation impact (TC per Year) of the contributing authors. The size of the dots represents the number of articles published by each author (N. Articles), while the shades of colour indicate the number of citations received by each article per year. In the field of education, K. Murris had the highest number of publications on the subject of philosophy for children, with a total of 14 articles. The next most prolific author is A. Kizel, with 11 articles, followed by C. Cassidy and D. Kennedy with 10 articles each, and M. F. Daniel with nine articles. The next most prolific authors are W. O. Kohan with eight articles, G. Burgh and M. Tesar with seven articles, and V. Johansson and M. Santi with six articles. Furthermore, the figure demonstrates that K. Murris is one of the authors with the most extensive academic publication history and has produced a significant number of highly cited works, particularly in recent years. Despite having a relatively shorter publication history, M. Tesar

has demonstrated a noteworthy citation impact with his recent works. It is evident that the majority of authors have been active in the field since the 2000s, demonstrating a notable surge in academic productivity, particularly after 2010. M. F. Daniel's academic output, commencing in 1993, represents the earliest publication history depicted in the graph. The rise in research output and the citations received by these publications indicate that the research topic is attracting increasing attention, and that significant contributions are being made in this field.

Citation Analysis of Authors

In the field of education, 240 authors were cited in publications on philosophy for children. The top 10 authors, as determined by ranking, are presented in Figure 4.

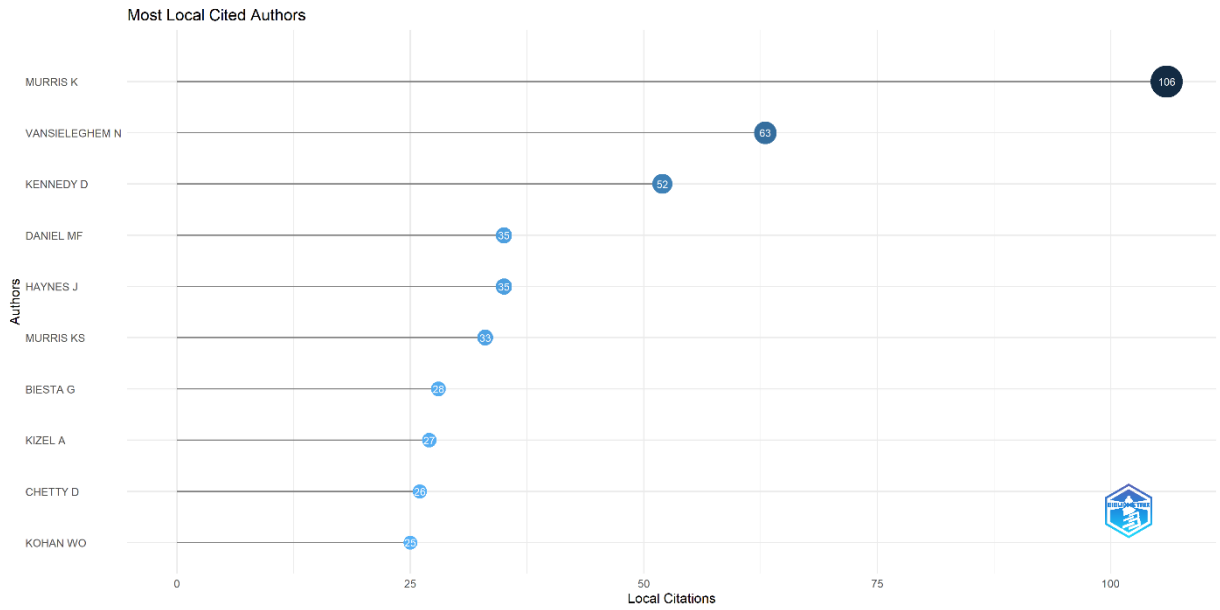


Figure 4. Most local cited authors in the field of education

As illustrated in Figure 4, K. Murris is the most frequently cited author, with 106 local citations. This is followed by N. Vansieleghem with 63 citations and D. Kennedy with 52 citations. These three authors may be considered to be among the most prominent in the field of research on this topic. Furthermore, the first three ranked authors receive a significantly greater number of citations than the others. This distribution demonstrates that there are notable differences between the authors in terms of scientific impact and recognition. M. F. Daniel and J. Haynes, with 35 citations, and K. S. Murris, with 33 citations, are also of importance in terms of local citations. This illustrates that the works of these authors in the ranking have made a substantial contribution to the relevant literature.

Index Values of Authors

The productivity of authors is not only evaluated according to the number of publications they produce. Furthermore, the total number of citations is not considered an isolated indicator. In addition to this, other metrics such as the h-index, g-index and m-index are employed to assess the productivity and impact of authors within their respective fields. Table 3 presents a ranking of authors publishing on philosophy for children in the field of education, based on their h-index.

Table 3

Productivity and Effectiveness of Authors Publishing on the Research Topic

No	Author	h_index	g_index	m_index	Total Citations	Total Article	Career Start
1	K. Murris	9	14	0,36	354	14	2000
2	D. Kennedy	7	10	0,28	139	10	2000
3	G. Burgh	5	7	0,357	80	7	2011
4	C. Cassidy	5	7	0,385	62	10	2012
5	M. F. Daniel	5	9	0,156	130	9	1993
6	M. Tesar	5	7	0,556	80	7	2016
7	L. D'olimpio	4	5	0,4	37	5	2015
8	J. Haynes	4	5	0,2	100	5	2005
9	A. Kizel	4	6	0,364	52	11	2014
10	S. Lyle	4	4	0,235	186	4	2008

As indicated in Table 3, K. Murris, who commenced his academic career in 2000 and is one of the most frequently cited authors (354 citations) in the field of study under consideration, has an h-index value of 9 and a g-index value of 14. This suggests that the author's scientific output is well-balanced. Nevertheless, the m-index value of 0.360 may suggest that the author's citation rate is relatively low despite a lengthy academic career. The discrepancy between the h-index (7) and g-index (10) values of D. Kennedy, the second-ranked author, suggests that some of his publications are cited more frequently than others. Nevertheless, the author's annual productivity remains relatively low, with an m-index value of 0.280. G. Burgh and C. Cassidy are notable for their 5 h-index and 7 g-index, while their m-index values are 0.357 and 0.385, respectively. Despite having been active since 1993, M. F. Daniel has a relatively low m-index value (0.156), which suggests that his academic impact per year is limited. However, M. Tesar, who has been active since 2016, has the highest m-index value (0.556), indicating a high citation impact in a relatively short period of time. A. Kizel, who ranks highly in terms of the number of publications (11 articles), has a medium h-index (4) and g-index (6) value. S. Lyle, who ranks second in terms of total number of citations, has a g-index value (4) equal to the h-index value (4), indicating a more homogeneous distribution of citations among publications.

Co-authorship Network

A co-authorship structure was established among 24 researchers specialising in the field of education and related to the subject field of philosophy for children. Figure 5 illustrates this structure.

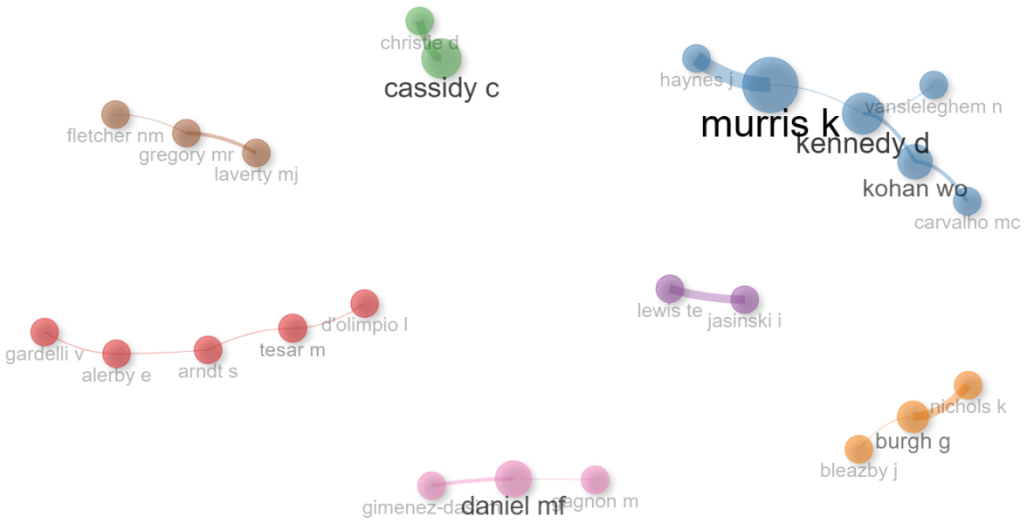


Figure 5. Co-authorship network

The analysis of author co-occurrences within the context of the research reveals the emergence of seven predominant network structures. The authors with the highest link strength are indicated by a darker tone. The thickness of the links between authors is indicative of the extent of research conducted among those authors. The cluster exhibiting the greatest degree of collaboration among authors (comprising six authors) is represented by the dark blue cluster network. In this structure, which exhibits the greatest number of instances of co-authorship, the names K. Murris and J. Haynes are particularly prominent, appearing in the central position. In addition to these two individuals, others such as D. Kennedy, W. O. Kohan and M. C. Carvalho also demonstrate robust connections within the network. With regard to the number of co-authors, there is evidence of collaboration between five authors within the red cluster. In terms of the strength of the connection between authors, the collaboration between C. Classidy and D. Christie in the green cluster, I. Jasinski and T. E. Lewis in the purple cluster, and G. Burgh and K. Nichols in the orange cluster is particularly noteworthy. The structure of the networks demonstrates that some researchers are more isolated than others, while others are engaged in intense collaboration.

Co-citation Network Analysis

In the field of education, there are instances of co-citations in publications pertaining to the philosophy of children's literature. The results of the analysis of 50 co-citations in these publications are presented in Figure 6.

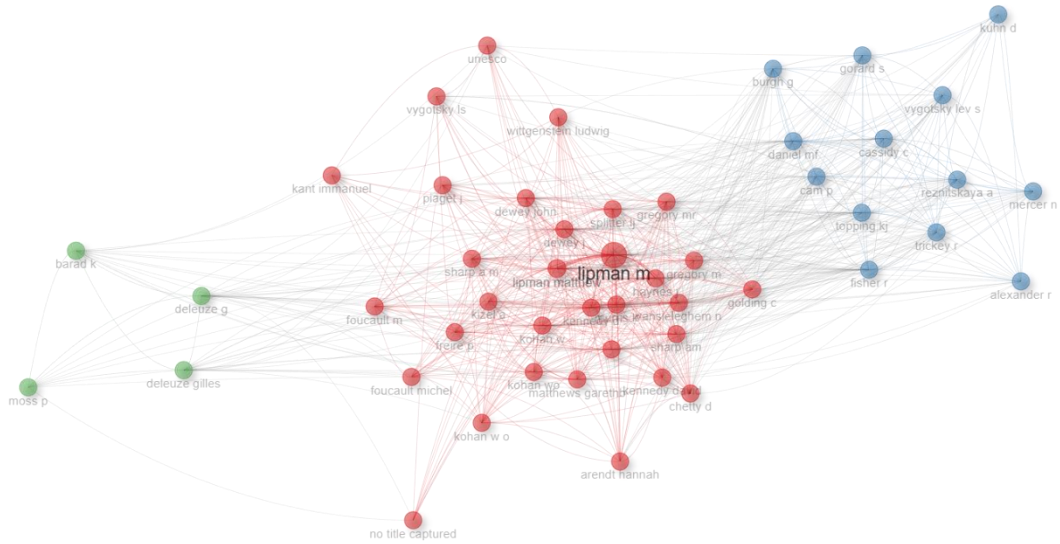


Figure 6. Co-citation network analysis

Upon analysis of the co-citations, the intellectual structure of the publications within the scope of the research is revealed, resulting in the identification of three co-citation clusters. The term 'co-citation' is used to describe the phenomenon of an article being referenced in the bibliography of at least two other articles. This method allows the identification of the most prominent intellectual contributions within a given subject field. As illustrated in Figure 6, Matthew Lipman's (2003) *Thinking in Education* and the 1980 publication *Philosophy in the Classroom*, also by the same author, occupy a central position within the network, with numerous citations from other publications. This illustrates that these two publications have made a significant contribution to the development of literature on philosophy for children in the field of education. In 1916, John Dewey published *Democracy and Education: An Introduction to the Philosophy of Education* represents a historical node and an early work that provides a historical foundation for the field of education. Earlier studies within the network provide the basis for subsequent research. The dense connections in the red cluster indicate that the work of the researchers in this group is frequently co-cited, indicating that they are conceptually close. The blue cluster represents a different subgroup of research by a small group of authors. The green cluster reflects a smaller group of authors. However, there is no centralised and prominent name in these clusters.

Institutional Analysis of Related Publications for Children in the Field of Education

Distribution of Publications by Institutions

In the field of education, researchers in 921 institutions produced publications on philosophy for children. Table 4 presents the ten institutions with the highest number of publications in this subject within the field of education.

Table 4

Institutions Publishing on Philosophy for Children in the Field of Education

Institutions	Total Article
Montclair State University	40
The University of Auckland	36
University of Strathclyde Glasgow	33
The University of Queensland	30
Rio de Janeiro State University	24
University of Haifa	24
Monash University	23
Université de Montréal	21
University of Cape Town	19
Columbia University in the City of New York	18

Table 4 reveals that Montclair State University is the most prolific institution in the field of education publishing on philosophy for children, with 40 articles. The next most prolific institutions are the University of Auckland (36 articles), the University of Strathclyde Glasgow (33 articles), and the University of Queensland (30 articles). The institutions with 24 articles are Rio de Janeiro State University and the University of Haifa. The lowest-ranking institutions in the table are Monash University (23 articles), Université de Montréal (19 articles), University of Cape Town (19 articles), and Columbia University in the City of New York (11 articles).

Collaboration Network of Institutions

A number of publications on the subject of philosophy for children in the field of education were produced as a result of collaborative efforts between various institutions. A total of 28 collaborative publications have been produced by these institutions within the scope of co-authorship. This structure is illustrated in Figure 7.

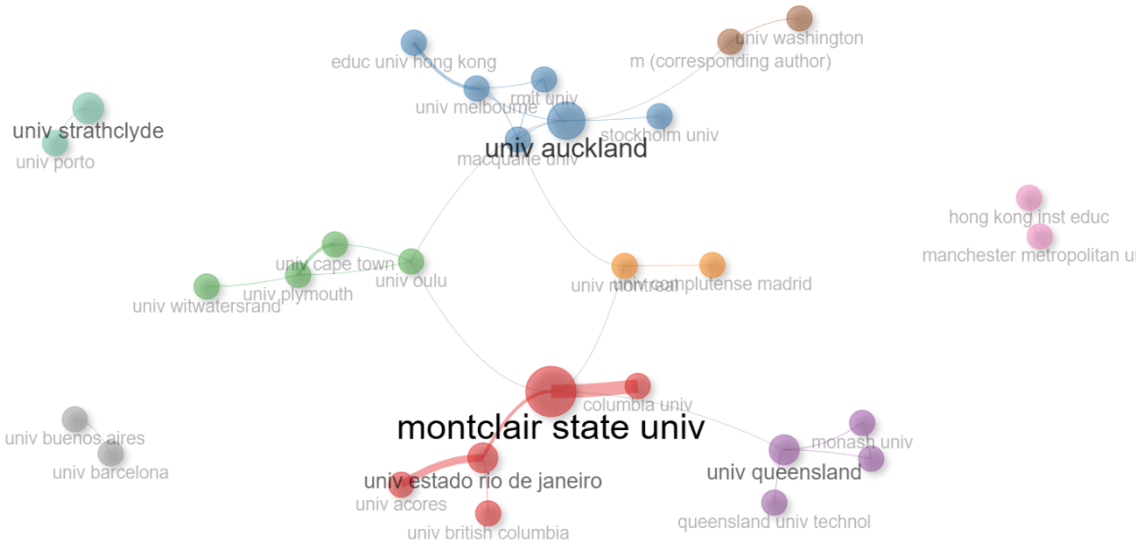


Figure 7. Collaboration network of institutions

When the coexistence of the institutions within the scope of the research is analyzed, it is seen that 9 common structures are formed. The structures are formed in accordance with the degree of similarity in the subject matter covered by the authors of the institutions. The structures exhibiting the highest degree of connection are indicated by a darker coloration. The cluster exhibiting the most intense collaboration is the red cluster. Montclair State University, situated within the red cluster, exhibits the highest degree of co-authorship. Furthermore, the university engages in collaborative efforts with three other clusters with regard to co-publication. The thickness of the links between Montclair State University and Columbia University and Rio de Janeiro State University and Universidade dos Açores in this cluster indicates a high level of collaboration between these institutions.

Country Analysis of Publications on Philosophy for Children in the Field of Education

Distribution of Publications by Country

In the field of education, research on philosophy for children has been conducted in 66 countries. Table 5 presents the 15 institutions with the highest number of publications in this subject field.

Table 5

Countries with the Most Publications on Philosophy for Children in Education

Countries	**Total Article**
United State of America	543
United Kingdom	382
Brazil	220
Australia	207
Canada	152
Spain	103
New Zealand	99
South Africa	77
Italy	73
Sweden	64
Türkiye	57
China	56
Portugal	51
Ireland	47
Argentina	45

A review of Table 5 reveals that the United States is the most prolific nation in terms of publishing on philosophy for children in the field of education, with a total of 543 articles. Subsequently, the United Kingdom ranks second with 382 articles, followed by Brazil (220 articles), Australia (207 articles), Canada (152 articles), and Spain (103 articles). With fewer than 100 articles, New Zealand (99 articles), South Africa (77 articles), Italy (73 articles), and Sweden (64 articles) are among the top 10 countries in terms of publishing on philosophy for children in the field of education. It is noteworthy that Türkiye, China, Portugal, Ireland, and Argentina have made a significant contribution to the literature with 57, 56, 51, 47, and 45 articles, respectively.

Distribution of Corresponding Authors by Country

In the field of education, researchers from 67 countries have produced publications on philosophy for children. Figure 8 shows the top 15 countries with the highest number of publications in this subject field.

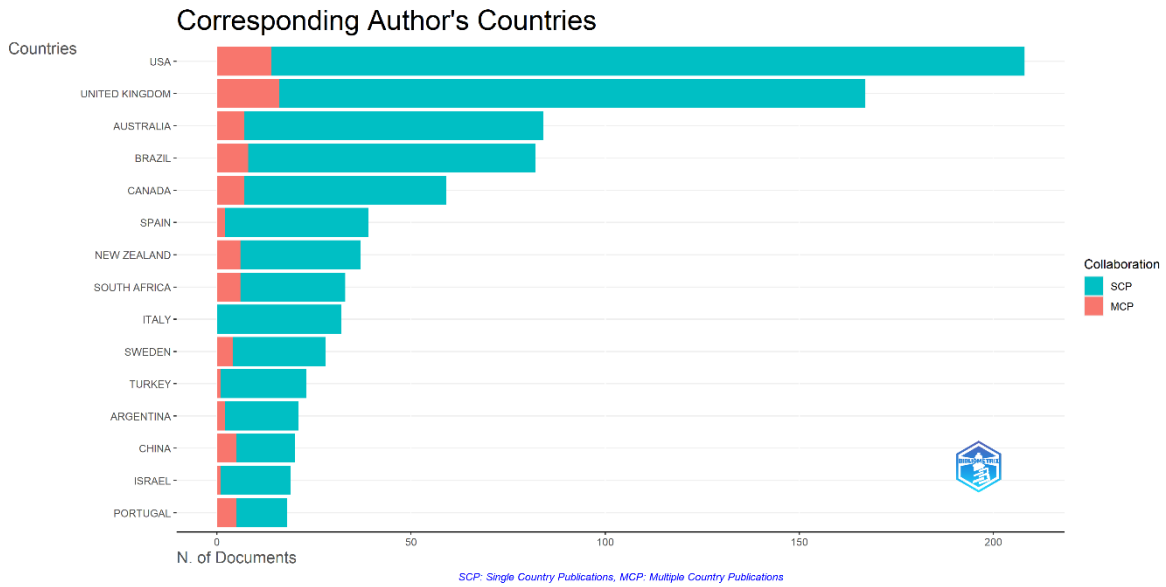


Figure 8. Distribution of publications by country

Figure 8 illustrates the number of publications and the types of collaborations by country of the lead authors engaged in publishing on philosophy for children in the field of education. The data are presented in two categories, distinguished by color, corresponding to single country publications (Single Country Publications) and multiple country publications (Multiple Country Publications). The former category encompasses works originating from a single country, whereas the latter category includes those resulting from collaborations with multiple countries. The United States of America (USA) is the foremost contributor in terms of both the total number of articles (208) and in-country collaboration (SCP=194 articles). The United Kingdom occupies the second position in terms of the total number of articles (167) and the first position in terms of international collaboration (MCP=16 articles). Subsequently, Australia (84 articles), Brazil (82 articles), and Canada (59 articles) are the next most prolific countries. Additionally, it is notable that countries such as Spain (39 articles), Türkiye (22 articles), and Argentina (19 articles) have produced relatively few articles, which are typically based on studies conducted through in-country collaborations. In Italy, all 32 articles were based on in-country collaborations. The majority of countries demonstrate a higher SCP rate than their MCP rate, indicating a tendency towards national-level research activities.

Countries' Collaboration World Map

In the field of education, collaborative publications on philosophy for children have been produced between countries. A total of 94 distinct collaborative efforts were identified between these countries. These collaborative efforts are illustrated in Figure 9.

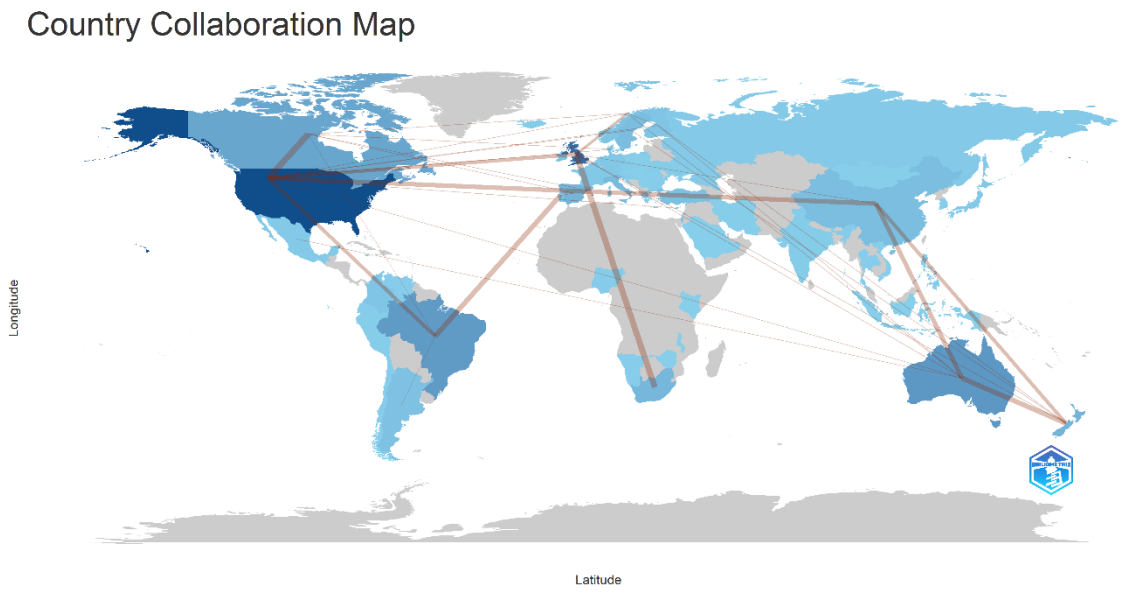


Figure 9. Collaboration of countries in publications

The map illustrating the extent of international collaboration in the field of philosophy for children in education depicts the intensity of cross-country collaboration as reflected in the darker blue tones, while the number of lines signifies the volume of research collaborations between countries. As illustrated in the map, the United States occupies a central position, indicated by its dark blue color and extensive network of connections, with 45 collaborations spanning 22 countries. The United Kingdom is the next most active participant, with 27 collaborations involving 14 different countries. Additionally, Australia (19 collaborations with 7 different countries), Canada (15 collaborations with 11 different countries), and Brazil (15 collaborations with 8 different countries) also demonstrate notable global engagement. Notably, the United Kingdom and South Africa (eight times) and the USA and Canada (eight times) have established the most cooperation. These countries are followed by Australia and New Zealand and Brazil and Portugal with six collaborations each. Additionally, some regions (e.g., much of Africa and parts of Asia) have relatively fewer links, indicating potential fields for improvement in global academic collaboration.

Keyword Structure of Publications on Philosophy for Children in the Field of Education

Keyword Analysis

In the field of education, a total of 2,728 distinct keywords were identified based on their appearance in publications on philosophy for children, with each keyword representing a minimum of one occurrence. The top 50 keywords are presented in a word cloud format in Figure 10.

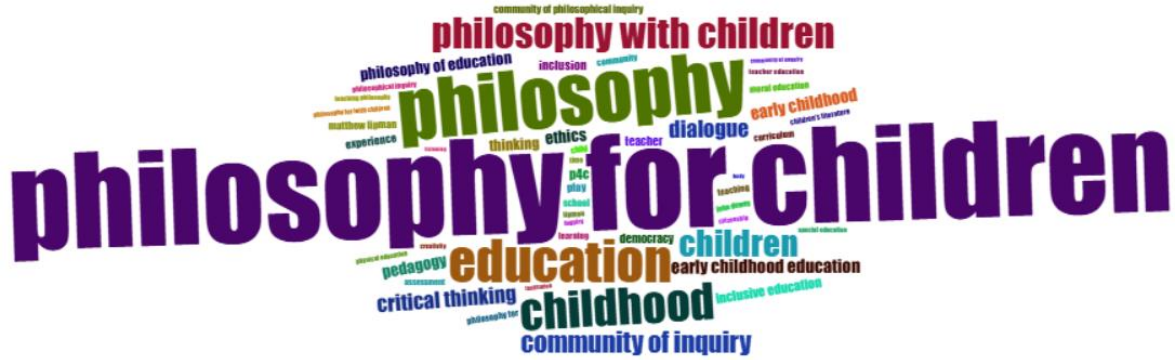


Figure 10. Keyword analysis of articles

Figure 10 illustrates that *philosophy for children* is a keyword that recurs 166 times in the articles included in the present study. The keyword in the center represents the primary focus of the subject field. The size of the words is indicative of the frequency of use of the keywords in the research on the subject field. The other most frequently used keywords in the articles examined within the scope of the research are *philosophy* (104 times), *education* (73 times), and *childhood* (64 times). These emphasize the importance of philosophy in children's education. The term *philosophy with children* is used 54 times, making it the most frequently preferred concept within the subject field. Moreover, concepts such as critical thinking, dialogue, and ethics exemplify the fundamental abilities and focal points cultivated in philosophical education for children. Furthermore, terms such as *early childhood education* and *pedagogy* indicate the educational approaches and methods utilized in this field. The prominence of *critical thinking* and *dialogue* in the word cloud serves to indicate the principal aims of philosophical education for children. While critical thinking facilitates the development of children's independent decision-making and analytical abilities, dialogue-based learning methodologies enhance their proficiency in social communication. The prominence of the concepts of *ethics* and *inclusive education* in the research findings demonstrates the significant role that philosophical education plays in the development of values and the promotion of inclusion. Instilling ethical thinking at an early age facilitates children's comprehension of the concepts of right and wrong. Inclusive education is predicated on the creation of an egalitarian learning environment, wherein all children are afforded the opportunity to participate in philosophical discourse.

Trend Topics Analysis

One of the most crucial aspects of bibliometric research is the examination of current trends in research within a given subject field. The 34 trend topics identified in the analysis of the publications included in this study are presented in Figure 11.

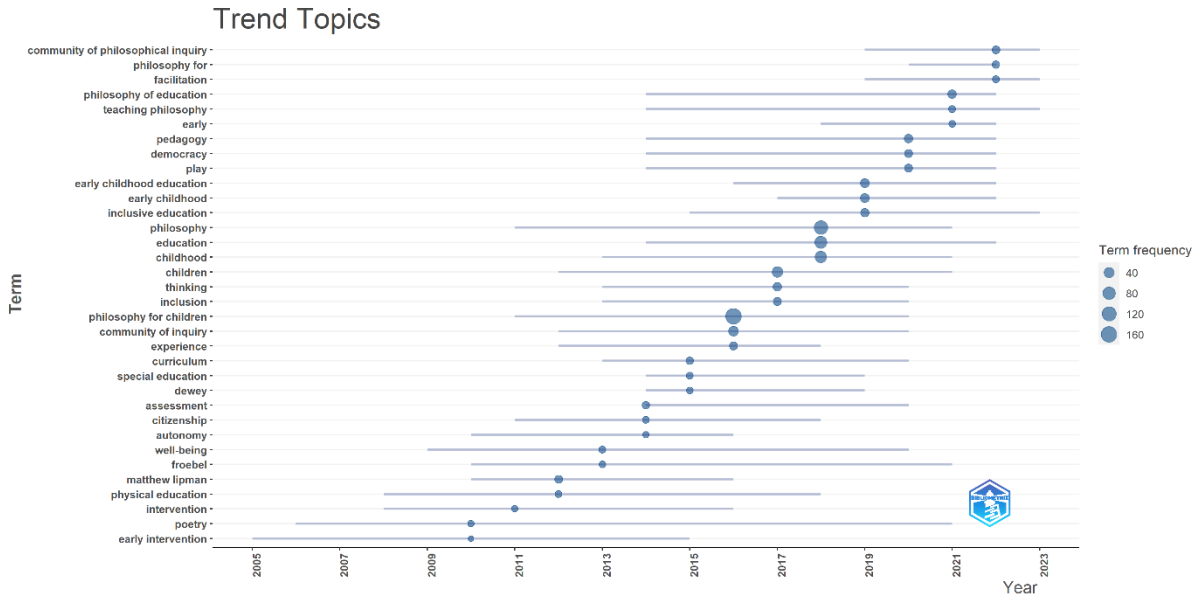


Figure 11. Trend topics analysis of articles

Figure 11 illustrates the prevailing trend in terms of the keywords favored by authors in publications on philosophy for children in the field of education as of 2005. The frequency of each term is represented by the size of the balloon, with larger balloons indicating a higher frequency of use. The initial trend in research appears to commence with *early intervention.* As illustrated in the figure, the core concepts of philosophy for children and philosophy became a prominent and frequently utilized element in research from 2011 onwards. The concepts of *early childhood education*, *critical thinking*, *democracy*, and *pedagogy* were frequently discussed and employed in the context of philosophical education of children and educational pedagogy. The concepts of *children, thinking,* and *inclusion* which are employed with moderate frequency, reflect the fundamental tenets of philosophical education, including the promotion of critical thinking and an inclusive approach towards the child as the primary beneficiary of philosophical education. Moreover, the concepts of *curriculum*, *special education,* and *assessment* underscore the structural aspects of integrating philosophical education into the broader educational system. A notable observation in the graph is the prominence of the names *Dewey, Matthew Lipman,* and *Froebel* among the prominent educational theorists. This illustrates that the practice of philosophy for children is grounded in a robust theoretical framework and is informed by philosophical and pedagogical foundations, particularly pragmatic and democratic educational approaches. In recent years, there has been a notable increase in the use of terms such as *community of philosophical inquiry*, *facilitation,* and *inclusive education.* These concepts indicate that collaborative learning environments and inclusive practices have gained importance in children's philosophical education. In particular, the *community of philosophical inquiry* stands out as an important method that supports children's participation in philosophical dialogue and collective thinking processes. This situation reveals that philosophical education for children is a tool that strengthens the culture of social participation and dialogue as well as individual thinking skills.

Discussion, Conclusion and Suggestions

This study presents a bibliometric analysis of articles published in Web of Science on philosophy for children in the field of education. Its purpose is to provide a comprehensive perspective on the subject field. The results

demonstrate the historical development of the field, as well as its current status and trends. In this context, 1120 articles were obtained and the results of the analysis of these articles were discussed in relation to other studies in the related literature.

The publication timeline of work on philosophy for children in education begins in 1977. During these years, philosophers such as Matthew Lipman and Ann Sharp laid the groundwork for the Philosophy for Children (P4C) movement. This movement is an innovative approach to teaching children critical thinking, questioning, and philosophical dialogue skills (Lipman & Sharp, 1978). The trend of change in the number of publications shows a significant acceleration since 2005. Among the reasons for this increase, besides the changes in educational paradigms, is the prominence of approaches such as critical thinking and inquiry learning. This is because P4C adapts to postmodern approaches in education and increasingly emphasizes the importance of philosophical dialogues in education (Välitalo et al., 2016). In fact, keyword analyses show that the concept of "critical thinking" is frequently used. The P4C method has been shown to develop children's reading, reasoning, critical thinking, argumentation, and cognitive skills, and thus this field is growing as a broad field of interest in education (Daniel & Auriac, 2011; Trickey & Topping, 2004). This growth, which peaked with 90 studies published in 2019, shows that the field has broad interest in academic circles and is constantly evolving. This trend may indicate that educators and researchers increasingly recognize the importance and potential of philosophical thinking for children, and feel the need to conduct more research on the topic.

The fact that the studies on philosophy for children were published in 309 different journals shows the diversity of this research field within academic publications and the wide audience it reaches. As Basourakos (2000) notes, this situation shows that philosophy for children intersects with different disciplines such as education, psychology and sociology. Analyzing the distribution of journals, the journal *Childhood and Philosophy* has by far the highest number of publications. However, when the effectiveness indicators of journals such as h-index, g-index and m-index are taken into account, well-established journals such as *Journal of Philosophy of Education* and *Educational Philosophy and Theory* stand out in terms of h-index values. This situation emphasizes the importance of not only the number of publications but also the quality of publications and shows that the h-index can be used as an effective measure in this context (Pagel & Hudetz, 2011). It is stated that measures such as the h-index are a reliable method for evaluating the academic effectiveness of journals; this method reflects the long-term performance and effectiveness of articles (Hodge & Lacasse, 2011). However, instead of relying solely on the h-index, a multiple evaluation method supported by additional indicators such as the m-index and g-index should be adopted, which provides a more comprehensive assessment of impact and performance (Khan et al., 2013). In addition, the effectiveness of the h-index values of journals is a measure of the impact and value of studies in the field of philosophy for children in education on the academic world.

The contribution of 200 authors working on philosophy for children in education shows that research efforts in this field are supported by a large and diverse community. In terms of author productivity, names such as K. Murris, M. F. Daniel, and A. Kizel stand out quantitatively. In terms of the most cited authors, names such as K. Murris, N. Vansieleghem and D. Kennedy are at the top of the list. However, when evaluated according to citation-based metrics such as the h-index, it is clear that K. Murris, D. Kennedy and G. Burgh are the leading authors in the field. The top authors and their impact indicators (h-index, g-index, m-index) reveal the prominent figures of philosophy for children in the academic literature and the quality of the work done in this field. This indicates the

interdisciplinary nature of the field and its support by a broad research community. In the co-authorship network analysis, K. Murris and J. Haynes were identified as the authors with the most robust collaboration network. In addition to these authors, other notable figures such as D. Kennedy, W. O. Kohan, and M. C. Carvalho have also demonstrated a high level of connectivity within the network. A co-citation analysis has demonstrated that Matthew Lipman's work is regarded as the foundational text of the field and has significantly influenced subsequent research. Lipman's contributions to the field, including "Thinking in Education" (2003) and "Philosophy in the Classroom" (1980), established the theoretical and practical foundations of the philosophy for children approach and significantly influenced the development of the literature. John Dewey's 1916 seminal work, "Democracy and Education: An Introduction to the Philosophy of Education" also merits recognition as a historical reference point.

From an institutional standpoint, it is notable that Montclair State University plays a pivotal role in the field of research under consideration. Its central position within the co-authorship network serves to confirm the university's productivity and interactivity. The Institute for the Advancement of Philosophy for Children (IAPC), which was established by Matthew Lipman and Ann Sharp, has exerted a significant global influence, with numerous educators and researchers from around the world having contributed to this model (Cam, 2017; Gregory, 2011). In contrast, academic institutions such as the University of Auckland, the University of Strathclyde in Glasgow, and the University of Queensland have also made notable contributions to the advancement of this field. The role of the University of Strathclyde in Glasgow became apparent with the research conducted by Cassidy and Christie in 2013 on thinking skills and philosophical inquiry. The influence of the University of Queensland is evident in Burgh and Thornton's (2016) examination of the evolution of the philosophy for children movement in Australia. This illustrates the significance of philosophy for children in academic settings and the breadth and intricacy of research in this domain. Additionally, there is a close collaborative relationship between Montclair State University and Columbia University, as well as between Rio de Janeiro State University and Universidade dos Açores. This collaboration was further reinforced by Kohan's (2014) research on the philosophy of childhood in Latin America.

A review of published research in the field of philosophy for children reveals that scholars from 66 countries have contributed to this field of study, indicating a global interest and impact. The country analysis demonstrates that the United States is the leading nation in philosophy for children research. The historical process that commenced with Lipman's establishment of the IAPC in the USA is a key point of reference. However, it is important to acknowledge the significant contributions made by countries such as the United Kingdom, Brazil, Australia, and Canada to the field. These countries have integrated philosophical thinking into their educational policies, thereby contributing to the development of the field (Scholl et al., 2016). The preponderance of European and North American countries may be attributable to the historical and philosophical underpinnings of the subject matter in these regions. It was determined that the United Kingdom and South Africa exhibited the greatest degree of collaboration in the subject field. This indicates that historical and cultural ties can reinforce cooperation networks and the global influence of the United Kingdom (Chinchilla Rodríguez et al., 2019). The structures of collaboration and co-authorship across countries demonstrate that the research has a global perspective. However, the observation that some regions (e.g., most of Africa and parts of Asia) have relatively fewer links indicates potential fields for improvement in global academic collaboration. Furthermore, the inclusion of Türkiye on the list with 57 publications indicates that interest in this field is growing in Türkiye. Indeed, recent years have seen a

number of studies by researchers from Türkiye, including Akkocaoğlu Çayır and Akkoyunlu (2016), Karadağ and Demirtaş (2018), Budak Çalışkan (2022), and Dirican (2024), which have been published in the literature. A review of the distribution of philosophy studies for children across countries reveals a global proliferation of such initiatives, with some countries demonstrating a particularly robust approach.

The use of 2728 different keywords demonstrates the extensive scope of research in the field of philosophy for children. Upon analysis of the keyword clouds, it becomes evident that the concepts of "philosophy for children", "community of inquiry", "dialogue", "ethics" and "critical thinking" emerge as prominent themes within the research landscape. These concepts confirm that the P4C approach, as developed by Matthew Lipman and Ann Sharp, is designed to foster critical thinking, ethical inquiry, and philosophical dialogical abilities in children. The emphasis on these concepts, which constitute the fundamental tenets of the field, reflects the philosophical and pedagogical roots of research in the field (Cam, 2017; Daniel & Auriac, 2011; Vansieleghem & Kennedy, 2011). A review of trend topic analyses reveals a clear trend in research in the field since 2005. Topics such as "early childhood education", "facilitation", "inclusive education" and "community of philosophical inquiry" have emerged as prominent fields of interest in recent years. This situation indicates that P4C is not only applicable to middle or high school children, but it has also begun to be implemented in preschool education. It is therefore important to initiate philosophical inquiry processes from an early age (Karadağ et al., 2017). These results, in conjunction with the evolution of P4C's agenda, also indicate a heightened emphasis on the principles of inclusion and facilitation in education. In particular, the increased prominence of themes such as "inclusive education" is indicative of an effort to expand the applicability of philosophy in all fields of education (Haynes, 2021). This shift demonstrates that P4C is a dynamic field, with research continually re-evaluating philosophical approaches to children's education.

As the findings of this study were limited to publications in the Web of Science database, the inclusion of studies in different databases (e.g., Scopus, Google Scholar) did not encompass the entirety of research in the field. Furthermore, the analyses were based on quantitative data in terms of citations and publication numbers, and the impact of qualitative research in pedagogical and cultural contexts was not sufficiently examined. The limited geographical distribution of P4C studies in parts of Africa and Asia indicates a need for further investigation into the applicability and challenges of philosophical education in these regions. Future studies should address the implications of P4C in different socio-cultural contexts, its role in teacher education, and its impact on long-term learning outcomes in greater depth.

It can be stated that the subject of philosophy for children in the field of education has attracted increasing attention in recent years, resulting in a notable accumulation of scientific knowledge in this domain. The findings of the study offer valuable insights into the historical evolution, current state, and potential future trajectories of the field. The trends and key points in the development of the field offer researchers new perspectives and research topics. Furthermore, this study reiterates the importance of interdisciplinary collaborations and the necessity of integrating diverse perspectives. In light of these considerations, the following recommendations can be put forth for consideration by those responsible for developing and implementing educational policies and practices.

- It is imperative that children's critical thinking and communication skills be developed by including philosophical inquiry and dialogue-based activities in curricula from the earliest stages of education.

- It is recommended that professional development programs be organized and supported with pedagogical tools for teachers to utilize P4C methods effectively in their classrooms.
- Inclusive education practices that facilitate the participation of all children in philosophical discourse, acknowledging socio-economic and cultural differences, should be implemented.
- Pilot projects based on P4C should be initiated in schools to facilitate the collection of long-term data on learning outcomes. Furthermore, successful practices should be disseminated.
- Philosophical education should be integrated with other academic disciplines, such as mathematics, science, and the arts, in order to ensure an interdisciplinary approach.
- It is recommended that collaboration between educational institutions, policymakers, and other relevant stakeholders be strengthened in order to facilitate the implementation of P4C as a systematic education policy.

Ethic

This study is in the category that does not require ethical approval.

Author Contributions

The authorship contribution is equally distributed, with the first author and the second author each contributing 50% to the study.

Conflict of Interest

There is no potential conflict of interest related to the research, authorship and/or publication of this study.

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