

A Bibliometric Landscape Analysis On Early Childhood Education

Ramzia Albakri¹, Shaikhah Al-Ainati², Abdul Rahman Bin S Senathirajah³, Norhafiza Binti Abd Aziz⁴, Rasheedul Haque⁵, Rajneesh Kumar Srivastava⁶

¹University of Business and Technology, Jeddah, Saudi Arabia. r.albakri@ubt.edu.sa, <https://orcid.org/0000-0002-7251-9878>

²Business Department, College of Business Studies, PAAET, Kuwait, sj.alainati@paaet.edu.kw, <https://orcid.org/0000-0003-0955-0124>

³Faculty of Business and Communication, INTI International University, Malaysia, Faculty of Management, Shinawatra University, Thailand, Wekerle Business School, Budapest, Hungary, <https://orcid.org/0000-0001-6044-9051>, arahman.senathirajah@newinti.edu.my

⁴Postgraduate Student Faculty of Business Management, fizaabdaziz14@gmail.com

⁵Associate Professor, SOMB, MILA University, Nilai, Malaysia, rasheedul.haque@mila.edu.my
<https://orcid.org/0000-0001-8170-5413>

⁶Principal-Bhavdiya Educational Institute DRML Awadh University Ayodhya, (UP), India
beiprincipal@bhavdiya.com, <https://orcid.org/0009-0009-1589-4936>

Abstract

Purpose – The purpose of this study is to analysis the publication trajectory relation information on early childhood education from 2000-2024. This because Early Childhood Education (ECE) is crucial to child development that sets the foundation for children well-being.

Design/methodology/approach – Using bibliometric analysis approach, data was extracted from Scopus database with information on publication status such as authors, country, sources, affiliation, keywords, and references which is key for this study. Further analysis using Vosviewer was conducted to provide a visual mapping for keyword, author and citation.

Findings – Publication analysis on Early Childhood Education (ECE) research from 2000 -2024 has seen a significant increase in 25 years from just 27 in 2000 to a high of 546 in 2023. This growth reflects an expanding interest in early childhood education research

Research limitations/implications – The time frame of this study from 2000-2025 is limited to publications in a 25-year period only. In this limited time frame, this study may have not included seminal work in the field of early childhood education.

Originality/value – This study will provide a holistic view on the numerous studies on early childhood that link high-quality early education to better academic outcomes, im-proved social skills, and enhanced emotional development later in life This study will aid sustainable growth in the future development of the new generation of workforce.

Keywords: Early Childhood Education, Bibliometric, Publication, Sustainable Growth

1.0 INTRODUCTION

1.1 Background of the Study

Early Childhood Education (ECE) is a key component in child development in the early years which will provide a strong foundation for his or her lifelong learning. ECE covers the period from birth to eight years old. During this time, key brain formation in a child enters a crucial stage which shapes a child's cognitive, social, and emotional abilities (Chawdhury et al., 2022). ECE importance is underlined by numerous studies that studied the connection between early education to academic success, enhanced social skills, and enhanced emotional development in the later life stage of a child (Camilli et al., 2010). Historically, ECE has seen strong contributions from educational reformers. Friedrich Froebel, also known as the father of kindergarten underlined the importance of play in children's learning. He believed that play played a key role in influencing learning and development. This approach has been foundational in ECE practices (Lascarides & Hinitz, 2000). Another notable landmark contribution was from Maria Montessori. She introduced child centric educational approaches that emphasized independence and self-directed learning amongst children. Her Montessori method, promoted the use of hands-on and collaborative play (Wickneswary et al., 2024). Finally, the work of John Dewey's work advocated experiential

learning. His methods called for an education system that emphasized critical thinking and problem-solving skills by using active participation and real-life experiences (Lascarides & Hinitz, 2000).

The landscape of ECE has been influenced by cultural, economic, and political factors. Globally, there has been a shift towards formalizing early childhood education. New Zealand has developed a ECE framework which is centered on accessibility, quality, and holistic development (Garvis & Pendergast, 2015). The same scenario is seen in Sweden. The Head Start program, in United States in 1965, aimed to provide early education to lower income families with children in the formative years. Numerous ECE studies have provided insights into good practices and highlighted the importance of early education (Linder & Simpson, 2018).

In recent years, ECE has received much deserved attention in the global education community. Organizations such as UNESCO and UNICEF have called for access to high quality early childhood education. Sustainable Development Goals (SDGs) have targeted to ensure that all children should have access to quality early childhood education by 2030 (Haque et al., 2020).

Despite the recorded benefits of ECE, countries worldwide face challenges in providing access to quality ECE. Key challenges such as funding, teacher qualifications, and curriculum standards are affecting the quality and accessibility of early childhood education. To counter these challenges requires continuous research among educators, policymakers, and researchers.

This study aims to provide a 25 year analysis of the bibliometric landscape of ECE research from 2000 to 2024. By examining total publication by authors, country, sources, affiliation, keywords, and references this study seeks to identify current and past developments, influential studies, and gaps in ECE. This study will provide a practical roadmap for future research directions and contribute to the ongoing improvement of early childhood education practices globally.

The field of ECE has gained increasing attention in recent years, driven by a growing recognition of its importance in educational research and policy (Maharani, 2023). Understanding research trends in ECE is crucial for identifying advancements and gaps in the field. Bibliometric analysis, which systematically examines the volume and impact of published literature, plays a key role in this endeavor (Çelik, 2022). By analyzing the bibliometric landscape of ECE research from 2000 to 2024, this study aims to provide a comprehensive overview of the field's evolution and highlight areas that require further exploration.

This study using bibliometric analysis of PBL research developed the following research questions:

RQ1: What are the publication trends in the field of earlychildhood education ?

RQ2: Who are the most productive authors in the field of earlychildhood education ?

RQ3: What are the most productive institutions in the field of earlychildhood education ?

RQ4: What are the most active countries in the field of earlychildhood education ?

RQ5: What are the most highly cited documents in the field of earlychildhood education ?

This study will study ECE research published between 2000 and 2024. The key document source included academic journals, conference papers, and other forms of publications. Key metrics for analysis include publication count, citation analysis, geographical distribution, and thematic focus (Linder & Simpson, 2018). The findings of this study will contribute to the body of knowledge on ECE. By providing a trajectory view on research trends, this study will provide key insights for educators, policymakers, and researchers. Understanding these trends will guide future research studies and contribute to improved ECE educational practices (Schachter, 2015).

The paper is organized as follows: literature review synthesizes past and present research; the methodology section outlines the bibliometric process; the results section presents the key findings of the study and the conclusion caps the study's contributions and suggests future

2.0 LITERATURE REVIEW

Past studies in ECE have identified trends and gaps in the ECE field. Research into early childhood mathematics education, for instance has focused on the practices of teachers and prospective teachers (Linder & Simpson, 2018). Subsequent studies have identified evidence-based early childhood intervention practices, and literature reviews to highlight elements of effective ECE practices (Dunst, 2016). These reviews highlighted the diversity of research methodologies and the need to synthesis existing studies to provide much needed guidelines to develop best practices in ECE.

The current research on ECE have focused on the teaching, learning, and educator well-being aspects. Example is a recent bibliometric review had identified patterns in mathematics research in early childhood (Tsamwa et al., 2022). This study summed that publications related to this field had peaked in 2022

(Maharani, 2023). Another notable work had highlighted the need for using new technologies to aid in early childhood literacy (Lankshear & Knobel, 2003). A More importantly research on early childhood had zeroed on the importance of educators' well-being as it recognizing its key role in providing high-quality education and care (Cumming, 2017).

Theories applicable to ECE originates from various disciplines such as psychology, sociology, and education. Piaget's cognitive development theory and Vygotsky's sociocultural theory have been highly influential in understanding how children learn and develop (Ahmed et al., 2022). Piaget's theory showcased the systematic stages of cognitive development. Vygotsky's theory, had focused on the social context of learning while underscoring the role of language and social interaction in cognitive development (Fleer & Veresov, 2018).

Although there has been a high volume of publication into ECE, there is a scarcity of studies involving bibliometric studies which has studied the trajectory of published literature in the field. Bibliometric analysis allows for identification of research trends, publication data, and the productivity contribution of institutions, authors and countries (Barman et al., 2023). A more recent bibliometric study has observed that while there was a high production of research on ECE published worldwide but there remains a critical need for detailed analyses to comprehend the evolving landscape of ECE research (Çelik, 2022). Addressing this gap through bibliometric studies could help to determine emerging areas of interest and influential works ultimately guiding future research in ECE.

Based on the above review, it can be summarized that early childhood education has a long and well dated historical origins rooted in the contributions of pioneering educational reformers. Previous studies have synthesized key patterns in ECE providing a foundation for current and future research. In tandem, recent studies continue to explore different aspects of ECE, such as interventions, professional development, and educator well-being (Ramalingam et al., 2024). ECE related theories encompasses fields from psychology, sociology, and education (Yixin et al., 2018). However it should be noted there remains a lack of bibliometric studies, which are key to mapping the trajectory of publication in ECE research. Therefore, this study is timely as it will address this gap in the body of literature which can aid our can enhance our understanding of the impact and direction of ECE research. This will ultimately be contributing to more effective educational practiced based research.

3.0 METHOD

The data used utilized in this study was extracted from the Scopus Database. The justification of using this database is on the account it it being the largest collection of academic published work with over almost 40,000 and close to a collection of 20 titles. Scopus also provides information on citation covering citation counts, h-index, g index and m index. This is information aids in evaluating the impact and influence of research articles and authors (Khalil & Haque, 2022). The targeted keywords was "Early Childhood Education", "The search query used was: TITLE-ABS-KEY ("Early Childhood Education") AND (PUBYEAR, 2000-2024) OR EXCLUDE (PUBYEAR, 2018). The previous studies were not included as the focus of this study was on the more recent studies in a 25 year timeframe. This study has employed the use of good practices in previous studies (Wider, 2023; Jiang et al., 2023).

A total of 4044 documents meeting the search criteria were identified. The bibliometric data on the 4044 documents included total publications and further analyzed according to document type, source type, country, author, title and source of publication. Citation count. Data extracted from Scopus were exported through MS Excel for further descriptive analysis. The study further used bibliomagika 2.8.1 to run in-depth analysis. Further analysis using Vosviewer was conducted to provide a visual mapping for keyword, author and citation.

4.0 ANALYSIS AND RESULTS

4.1 Main Information.

Table I data reveals information of scholarly impact in the ECE field. The total number of citations in the 25 year period is 40,783, averaging 9.19 citations per paper. This can be interpreted that on average each paper has been cited over nine times (Sivagurunathan et al., 2025). This reflects the relevance and influence of published work in ECE. Based on 3095 cited papers, the average number of citations per cited paper increases to 13.18. This underlines the high impact of the most influential works (Malarvizhi et al., 2024).

The data shows an average of 1699.29 citations per year. This high citation rate suggests that research in early childhood education is important and a highly referenced area of study. Additionally, the citation per author valued at 3.54, indicating that each author has, on average, received multiple citations (Haibin et al., 2022).

The h-index of 76 indicates that at least 76 papers have each been cited at least 76 times, depicting its productivity and citation impact. The g-index of 119 further reinforces this by emphasizing the higher impact of highly cited papers, as it considers the top publications that have received the most citations (Rajendran & Haque, 2022). The m-index of 3.040, which adjusts the h-index for the number of years since the first publication, suggests a steady and significant impact of research output over time (Haque & Srivastava, 2014).

Furthermore, the sum of citations within the h-core, which is 24,923, shows the substantial citation impact of the core influential papers (Sumi et al., 2025). This concentration of citations by a select group of publications indicates that a significant portion of the research output is highly impactful (Mehta et al., 2025).

Table 1. Citation Metrics

Main Information	Data
Publication Years	2000 - 2024
Total Publications	4440
Citable Year	25
Number of Contributing Authors	11516
Number of Cited Papers	3095
Total Citations	40,783
Citation per Paper	9.19
Citation per Cited Paper	13.18
Citation per Year	1699.29
Citation per Author	3.54
Author per Paper	2.59
Citation sum within h-Core	24,923
h-index	76
g-index	119
m-index	3.040
Source: Generated by the authors	

4.2 Annual Publication Trends

Based on Table 2 and Figure 1, publication analysis on ECE research from 2000 to 2025 has seen a significant increase over the years, from just 27 in 2000 to a high of 546 in 2023. This growth reflects an expanding interest and scholarly output in early childhood education research. Correspondingly, the number of contributing authors (NCA) reached a high of 1727 in 2023, indicating increased collaboration engagement.

Citation metrics provide insights into the impact and influence of the research. The total citations (TC) generally increased over the years, with the highest value of 2413 citations in 2009 and 3172 in 2016. However, the average citations per paper (C/P) show a downward trend in recent years, dropping from 52.48 in 2002 to just 0.41 in 2024. This decline can be attributed to new publications that have not yet had sufficient time to accumulate citations.

Table 2. Publication by Year

Year	TP	NCA	NCP	TC	C/P	C/CP	h-index	g-index	m-index
2000	27	40	23	946	35.04	41.13	11	27	0.440
2001	20	42	18	844	42.20	46.89	8	20	0.333
2002	21	45	18	1102	52.48	61.22	11	21	0.478
2003	26	46	19	403	15.50	21.21	11	20	0.500

2004	24	46	21	339	14.13	16.14	9	18	0.429
2005	30	58	26	511	17.03	19.65	11	22	0.550
2006	40	72	32	688	17.20	21.50	16	26	0.842
2007	88	140	52	1472	16.73	28.31	16	38	0.889
2008	54	113	50	1080	20.00	21.60	18	31	1.059
2009	90	161	68	2413	26.81	35.49	23	48	1.438
2010	103	181	83	1792	17.40	21.59	23	40	1.533
2011	109	205	94	1885	17.29	20.05	22	39	1.571
2012	114	242	98	1404	12.32	14.33	20	33	1.538
2013	160	322	137	1871	11.69	13.66	21	36	1.750
2014	173	342	150	2540	14.68	16.93	27	44	2.455
2015	192	417	168	2822	14.70	16.80	28	44	2.800
2016	192	493	163	3172	16.52	19.46	30	49	3.333
2017	253	556	183	2521	9.96	13.78	26	41	3.250
2018	309	719	246	2588	8.38	10.52	23	37	3.286
2019	333	911	266	2976	8.94	11.19	24	39	4.000
2020	388	1075	298	3095	7.98	10.39	23	40	4.600
2021	375	1084	263	1832	4.89	6.97	18	27	4.500
2022	497	1528	330	1585	3.19	4.80	14	24	4.667
2023	546	1727	238	789	1.45	3.32	10	16	5.000
2024	276	951	51	113	0.41	2.22	5	5	5.000
Grand Total	4440	11516	3095	40783	9.19	13.18	448	785	

Figure 1. Total Publications and Citations by Year

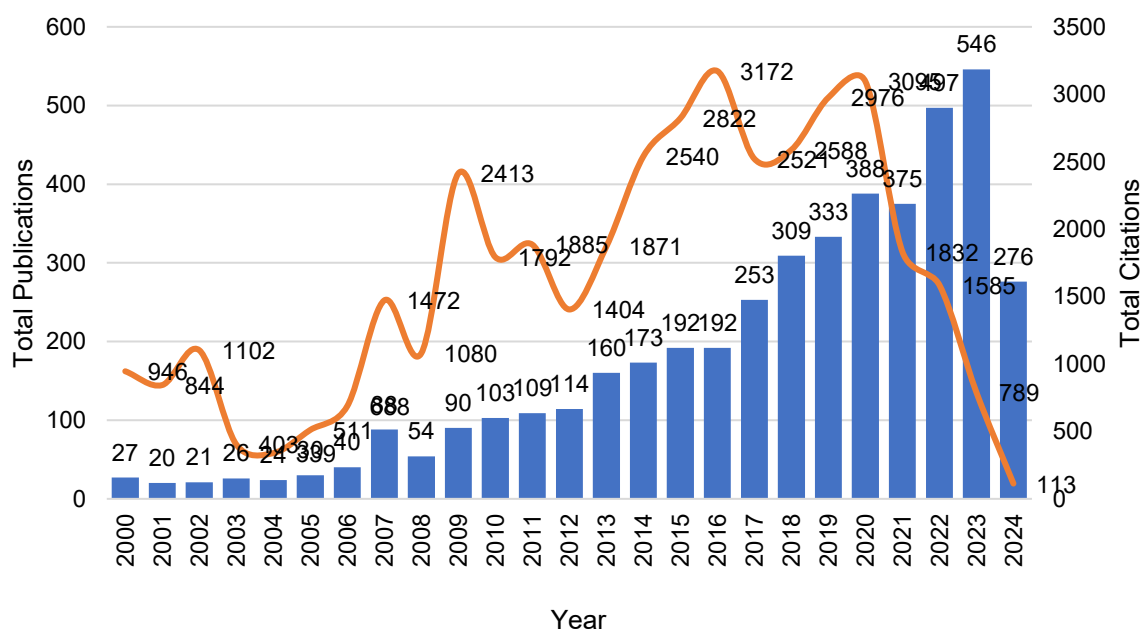
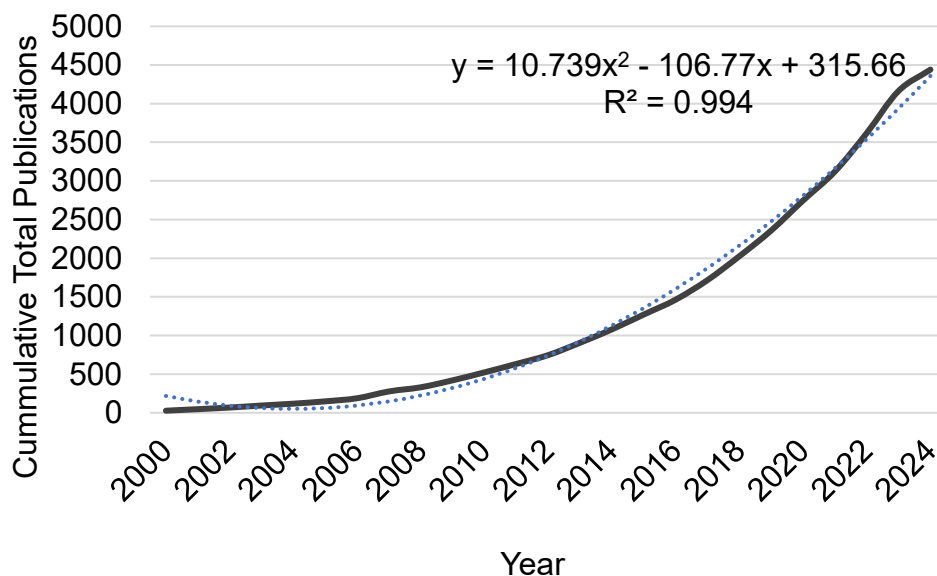


Figure 2 below shows the cumulative total publications in ECE research from 2000 to 2024, following a quadratic growth model. The equation $y=10.739x^2 - 106.77x + 315.66$ with $R^2=0.994$ indicates good fit, illustrating a significant increase in research publication output. The steady growth, especially post-2010, highlights the growing academic interest in ECE research. The exponential rise in recent years, particularly around 2017-2024, underscores ECE's growing importance and the increasing recognition of its educational benefits.

Figure 2. Cumulative Total Publications by Year



Source: Generated by the authors

4.3 Documents Profiles

Based on the Table 3 below, it is revealed amongst the document types, articles (66.35%) and Book Chapters (18.96%) are the most published document covering over 85% of the total publications. Other notable document types include review (4.55%) and conference papers (3.36%). The lesser common documents published are letters, notes, and short surveys which shows that the main focus is on traditional scholarly publications.

Table 3. Document Type

Document Type	Total Publication	Percentage (%)
Article	2946	66.35%
Book Chapter	842	18.96%
Review	202	4.55%
Conference Paper	149	3.36%
Book	119	2.68%
Editorial	97	2.18%
Erratum	50	1.13%
Note	26	0.59%
Letter	5	0.11%
Short Survey	2	0.05%
Retracted	2	0.05%

The bibliometric analysis of ECE research (2000–2024) shows that articles (74.32%) and books (18.56%) dominate the publication landscape, accounting for the majority of the total publications. Other document types, such as book series and conference proceedings contribute minimally, highlighting a preference for traditional research dissemination formats in ECE.

Table 4. Source Type

Source Type	Total Publications	Percentage (%)
Journal	3300	74.32%
Book	824	18.56%
Book Series	190	4.28%

Conference Proceeding	126	2.84%
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Source: Generated by the authors

Analysis on Table 5 below reveals a majority of publication in English (90.83%), followed by Spanish (6.04%) and Portuguese (3.29%). German (0.81%) and French (0.45%) also have some notable contributions. The remaining languages, including Turkish, Croatian, and others, collectively represent less than 1% of the total publication. This suggests a strong preference for English in ECE research publications.

Table 5. Languages

Language	Total Publication	Percentage (%)
English	4033	90.83%
Spanish	268	6.04%
Portuguese	146	3.29%
German	36	0.81%
French	20	0.45%
Turkish	8	0.18%
Croatian	5	0.11%

Source: Generated by the authors

Bibliometric analysis by subject area indicates that the dominant subject areas are Social Sciences (82.27%), Psychology (33.90%), Medicine (8.06%), and Arts and Humanities (6.80%). Other key areas include Nursing (5.07%) and Business, Management and Accounting (3.11%). The diverse range of subjects, from social science to Neuroscience, underlines the broad interdisciplinary application of ECE in various academic research.

Table 6. Subject Area

Subject Area	Total Publication	Percentage (%)
Social Sciences	3653	82.27%
Psychology	1505	33.90%
Medicine	358	8.06%
Arts and Humanities	302	6.80%
Computer Science	255	5.74%
Nursing	225	5.07%
Business, Management and Accounting	138	3.11%

Source: Generated by the authors

4.4 Most Productive Authors

Analysis of author contributions in Table 7 highlights the distribution of publications among top authors in early childhood education research. The bibliometric analysis of author contributions reveals that Garvis, S. is the most prolific author with 27 publications (0.61%), followed by Li, H. and Vandebroek, M., each with 23 publications (0.52%). Other notable contributors include Sumsion, J. with 22 publications (0.50%) and a cluster of authors such as Irvine, S., Wong, S., and Yoong, S.L., each contributing 20 publications (0.45%).

Table 7. Most Productive Authors

Author Name	Total Publication	Percentage (%)
Garvis, S.	27	0.61%

Li, H.	23	0.52%
Vandenbroeck, M.	23	0.52%
Sumsion, J.	22	0.50%
Irvine, S.	20	0.45%
Wong, S.	20	0.45%
Yoong, S.L.	20	0.45%

Source: Generated by the authors

4.5 Most Productive Institutions

Table 8 highlights significant contributions from various institutions. The bibliometric analysis of institutional contributions highlights that Göteborgs Universitet leads with 84 publications (1.89%), followed closely by Helsingin Yliopisto with 82 publications (1.85%). Queensland University of Technology ranks third with 76 publications (1.71%). Other significant contributors include Monash University with 68 publications (1.53%) and the University of Jyväskylä with 67 publications (1.51%), reflecting a strong research presence across these institutions.

Table 8. Most productive institutions with minimum of five publications

Institution	Total Publication	Percentage (%)
Göteborgs Universitet	84	1.89%
Helsingin Yliopisto	82	1.85%
Queensland University of Technology	76	1.71%
Monash University	68	1.53%
University of Jyväskylä	67	1.51%
Macquarie University	65	1.46%
Tampere University	54	1.22%
Charles Sturt University	52	1.17%
The University of Hong Kong	51	1.15%
The Education University of Hong Kong	51	1.15%
University of Melbourne	47	1.06%
UCL Institute of Education	43	0.97%
Columbia University	43	0.97%
University of Toronto	41	0.92%
The University of Auckland	40	0.90%

Source: Generated by the authors

4.6 Most Productive Countries

The bibliometric analysis of country contributions shows that the United States leads with 923 publications (20.79%), followed by Australia with 570 publications (12.84%) and Spain with 400 publications (9.01%). Europe is well-represented with significant contributions from the United Kingdom (7.61%), Finland (5.32%), and several other countries.

The United States contributes strongly to publications on early childhood education due to its extensive funding. These fundings are channel through its Department of Education and the National Institute of Child Health and Human Development. In addition, the presence of numerous specialized research centers and universities researching early childhood education provides the catalyst for a productive research environment in ECE field (Furu et al., 2023). US also emphasis on evidence-based policies and practices, contributing to its high publication rates (Ravanis, 2022).

Table 9. Top 20 Countries contributed to the publications

Country	Continent	Total Publications	Percentage (%)
United States	North America	923	20.79%
Australia	Oceania	570	12.84%
Spain	Europe	400	9.01%
United Kingdom	Europe	338	7.61%
Finland	Europe	236	5.32%
Brazil	South America	220	4.95%
Sweden	Europe	187	4.21%
Canada	North America	180	4.05%
Norway	Europe	173	3.90%
New Zealand	Oceania	152	3.42%
Germany	Europe	135	3.04%
China	Asia	129	2.91%
Indonesia	Asia	118	2.66%
Turkey	Europe	99	2.23%
Hong Kong	Asia	95	2.14%

Source: Generated by the authors

4.7 Publications by Source Titles

The Table 10 below highlights the most active source titles publishing 50 or more documents. Analysis of early childhood education journals shows that "Early Childhood Education Journal" is the most productive with 123 publications. This is closely followed by "European Early Childhood Education Research Journal" with 119 publications and the "Early Child Development and Care" with 116 publications. These journals possess high citation rate. The "Early Childhood Education Journal" and the "European Early Childhood Education Research Journal" received 1500 and 1590 citations.

Table 10. Most active source titles that published 20 or more documents

Most Productive Source Title	TP	NCA	NCP	TC	C/P	C/CP	<i>h</i>	<i>g</i>	<i>m</i>
Early Childhood Education Journal	123	352	89	1500	12.20	16.85	21	34	0.840
European Early Childhood Education Research Journal	119	255	91	1590	13.36	17.47	22	36	1.222
Early Child Development and Care	116	294	108	1234	10.64	11.43	19	27	0.760
Contemporary Issues in Early Childhood	89	172	78	963	10.82	12.35	17	25	1.000
Early Years	86	228	71	938	10.91	13.21	18	27	0.783
Australasian Journal of Early Childhood	67	191	59	575	8.58	9.75	12	18	1.091
International Journal of Early Years Education	63	128	55	648	10.29	11.78	13	22	0.520

Source: Generated by the authors

4.8 Highly Cited Documents

Based on Table 11, Campbell et al. (2002) lead with 708 citations (Campbell et al., 2002). Currie (2001) follows with 490 citations, emphasizing early childhood education programs. Leana et al. (2009) and Dahlberg et al. (2007) each have commendable citation rates, reflecting on quality in ECE. Kim (2020) stands out with a high citation rate of 53.40 per year. This can be possibly attributed to the timely relevance of learning and teaching online during covid-19

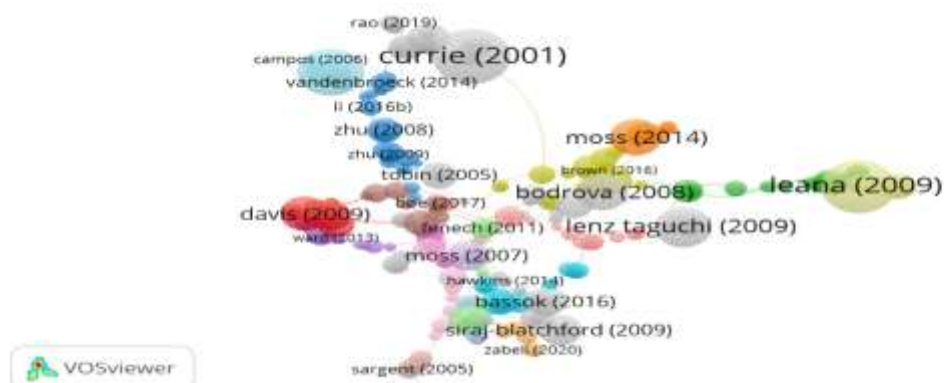
Table 11. Top 10 highly cited articles

No.	Author(s)	Title	Source Title	TC	C/Y
1	Campbell F.A.; Ramey C.T.; Pungello E.; Sparling J.; Miller-Johnson S. (2002)	Early childhood education: Young adult outcomes from the abecedarian project	Applied Developmental Science	708	30.78
2	Currie J. (2001)	Early childhood education programs	Journal of Economic Perspectives	490	20.42
3	Leana C.; Appelbaum E.; Shevchuk I. (2009)	Work process and quality of care in early childhood education: The role of job crafting	Academy of Management Journal	449	28.06
4	Dahlberg G.; Moss P.; Pence A. (2007)	Beyond quality in early childhood education and care: Languages of evaluation: Second edition	Beyond Quality in Early Childhood Education and Care: Languages of Evaluation: Second Edition	405	22.50
5	Fantuzzo J.; Tighe E.; Childs S. (2000)	Family involvement questionnaire: A multivariate assessment of family participation in early childhood education	Journal of Educational Psychology	357	14.28
6	Tanaka F.; Cicourel A.; Movellan J.R. (2007)	Socialization between toddlers and robots at an early childhood education center	Proceedings of the National Academy of Sciences of the United States of America	317	17.61
7	Couse L.J.; Chen D.W. (2010)	A tablet computer for young children? Exploring its viability for early childhood education	Journal of Research on Technology in Education	283	18.87
8	Reynolds A.J.; Temple J.A.; Ou S.-R.; Arteaga I.A.; White B.A.B. (2011)	School-based early childhood education and age-28 well-being: Effects by timing, dosage, and subgroups	Science	272	19.43
9	Kim J. (2020)	Learning and Teaching Online During Covid-19: Experiences of Student Teachers in an Early Childhood Education Practicum	International Journal of Early Childhood	267	53.40
10	Lenz Taguchi H. (2009)	Going beyond the theory/practice divide in early childhood education: Introducing an intra-active pedagogy	Going Beyond the Theory/Practice Divide in Early Childhood Education: Introducing an Intra-Active Pedagogy	261	16.31

4.9 Keyword Analysis The visualization of the keyword co-occurrence network depicts the presence of three primary clusters within early childhood education. The three primary clusters are early childhood education, preschool child/physical activity and /child/childhood/infant.

The red cluster is the most central, highlighting its critical role in early childhood education research. The central keyword, "early childhood education," is connected to related terms such as "teachers," "educational technology," "ict," "pedagogy," "professional development," "evaluation," "assessment," and "play." This cluster

Figure 5. Citation Analysis on Documents



5.0 CONCLUSION

Publication analysis on ECE research from 2000 to 2025 has seen a significant increase over the years, from just 27 in 2000 to a high of 546 in 2023. This growth reflects an expanding interest and scholarly output in early childhood education research. Amongst the document types, articles and Book Chapters are the most published document covering over 85% of the total publications. A majority of publication are in English followed by Spanish and Portuguese. The dominant subject areas are Social Sciences, Psychology, Medicine and Arts and Humanities (Alex et al., 2025). Analysis of institutional contributions highlights that Göteborgs Universitet leads with publications followed closely by Helsingin Yliopisto. In terms of country contributions shows that the United States leads followed by Australia and Spain. Keyword analysis show the emergence of three primary clusters are early childhood education, preschool child/physical activity and /child/childhood/infant (Aziz et al., 2025). The visualization of the co-authorship network in early childhood education research, denotes the intricate web of collaborations among scholars in this field. The interconnectedness and clustering of the published documents reveal thematic groupings into the development and evolution of research in early childhood education. This analysis points to emerging research trends within this domain.

6.0 LIMITATIONS

There are some limitations of this study which warrants some highlighting. The time frame of this study from 2000 to 2024 is confined to publication in a 25 year period only. This may cause this analysis to miss out on any pioneering or seminal work that was conducted pre 2000. The absence of much earlier studies may not allow for a full overview of the entire production and trajectory of ECE publication. Secondly this study focus was only on the Scopus database. Other prominent database such as Web of Science were not included in this study. This will not allow for a comprehensive bibliometric analysis on the entire publication of ECE research. A comparison study of Scopus and Web of Science could also identify further areas needing more research into the ECE domain. Furthermore, this study does not include maximum spanning tree which can links the topics which have the strongest connections. The maximum spanning tree allows for the identification of the different “community” structures within the tree.

7.0 FUTURE RESEARCH

Future research can use a longer time frame such as from the 1970s to 2024. This will enable us to capture the full trajectory of ECE publication since its inception to the current date. It will also provide a more holistic view for the entire publication history related to ECE research. Secondly, future studies can include other prominent database such as Web of Science. This will also allow for a comprehensive bibliometric analysis on the entire publication of ECE research. A comparison study of Scopus and Web of Science could also identify further areas needing more research into the ECE domain. Future studies should include maximum spanning tree which can links the topics which have the strongest connections. The maximum spanning tree allows for the identification of the different “community” structures within the tree.

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