EMOTIONAL INTELLIGENCE IN EDUCATION: GLOBAL RESEARCH TREND

Nor Syamimi Mohamed Adnan[1*], Ina Suryani[2], Suzana Sulaiman[3], Noor Farahhein Johari[4], Masturah Sabri[5], Jasin Abd Halim[6]

[1]Department of Language and General Studies, Universiti Malaysia Perlis, Malaysia
✉ syamimiadnan@unimap.edu.my   iD https://orcid.org/0009-0004-1849-9732

[2]Department of Language and General Studies, Universiti Malaysia Perlis, Malaysia
✉ inasuryani@unimap.edu.my   iD https://orcid.org/0000-0003-3193-4706

[3]Department of Language and General Studies, Universiti Malaysia Perlis, Malaysia
✉ suzana@unimap.edu.my   iD https://orcid.org/0009-0009-0903-2125

[4]Department of Language and General Studies, Universiti Malaysia Perlis, Malaysia
✉ farahhein@unimap.edu.my   iD https://orcid.org/0009-0003-3969-373X

[5]Department of Language and General Studies, Universiti Malaysia Perlis, Malaysia
✉ masturahsabri@unimap.edu.my   iD https://orcid.org/0000-0001-8166-9096

[6]Department of Language and General Studies, Universiti Malaysia Perlis, Malaysia
✉ jasinhalim@unimap.edu.my   iD https://orcid.org/0009-0001-7646-3517

Article Info

Abstract:

Emotional intelligence (EI) has become an increasingly important area of study in the field of education, recognized for its role in shaping student achievement, psychological well-being, and social development. However, despite its growing prominence, research on EI in education remains scattered across disciplines, making it difficult to capture global patterns and thematic directions. To address this gap, this study conducts a comprehensive bibliometric analysis to map the research trends, collaborative networks, and thematic hotspots of EI in educational contexts. Data were collected from the Scopus database through an advanced search using the keywords emotional, intelligence, education, and psychological, limited to English-language publications. A total of 553 documents were retrieved, cleaned, and harmonized using OpenRefine. Descriptive statistics and trend graphs were generated using the Scopus Analyzer, while VOSviewer software was employed to construct visualization maps for co-authorship, co-citation, and keyword co-occurrence. The analysis reveals a consistent upward trend

in publications from 2004 to 2024, with China, the United States, the United Kingdom, and Malaysia emerging as leading contributors, while Spain recorded the highest citation impact with 1,854 citations. Co-authorship analysis identified 34 countries surpassing the minimum threshold, resulting in eight clusters of international collaboration, with China and the United Kingdom positioned as central hubs of partnership. Keyword mapping highlighted dominant themes such as leadership, higher education, academic performance, and psychological well-being, demonstrating the multidimensional scope of EI research in education. These findings contribute to the body of knowledge by offering a comprehensive overview of the global intellectual structure, guiding future research directions, and underscoring the potential of EI as a vital framework for advancing educational practice and policy worldwide.

Introduction

Emotional Intelligence (EI) has emerged as a pivotal concept in the realm of education, reflecting a growing recognition of its impact on various aspects of student and teacher performance. Defined as the ability to recognize, understand, manage, and utilize emotions effectively, EI is increasingly seen as essential for fostering holistic development in educational settings (RAHMAN & MAHADI, 2024; Solih et al., 2024). The global research trend in EI underscores its significance, with a marked increase in publications and scholarly interest over the past few decades (RAHMAN & MAHADI, 2024; Yousaf et al., 2021). This surge in research highlights the multifaceted role of EI in enhancing academic achievements, improving social relationships, and promoting personal well-being among students and educators alike (Brandao De Souza & Jacomuzzi, 2025; Dolev & Leshem, 2017). This paper aims to explore the global research trends in EI within the educational context, providing a comprehensive overview of its development, applications, and future directions.

Literature Review

The study of EI in education has gained substantial momentum, as evidenced by the increasing number of publications and the diverse range of themes explored. Bibliometric analyses reveal a significant rise in EI-related research, particularly from 2012 to 2021, with notable

contributions from Western and Asian countries (Solih et al., 2024) . The thematic focus of these studies spans leadership skills, training, medical education, entrepreneurship, personality, special needs, and psychosocial aspects, indicating the broad applicability of EI in various educational contexts (Solih et al., 2024; Yousaf et al., 2021). Furthermore, the integration of EI into pedagogical practices and institutional strategies is seen as crucial for creating inclusive and empathetic learning environments (Brandao De Souza & Jacomuzzi, 2025; Reis da Silva, 2024).

Research has consistently shown that EI is a critical factor in achieving educational goals. For instance, studies conducted in high schools and universities demonstrate that EI can significantly enhance students' academic performance, social skills, and overall well-being (Hussainy et al., 2022; Stewart et al., 2010; Viñas & Blanco, 2022). In a high school in Spain, the implementation of EI-focused projects led to increased awareness and regulation of emotions among students, highlighting the practical benefits of incorporating EI into the curriculum (Viñas & Blanco, 2022). Similarly, in higher education, the EI of university professors has been linked to improved student engagement, motivation, and mental health, underscoring the importance of emotional competencies in teaching (Brandao De Souza & Jacomuzzi, 2025).

The role of EI in professional development and teacher training is another critical area of research. Studies indicate that EI training programs for teachers can lead to positive shifts in their emotional competencies, which in turn enhance their teaching practices and relationships with students (Dolev & Leshem, 2017; Maity et al., 2025). For example, a two-year EI development program for teachers in Israel resulted in improved emotional regulation and interpersonal skills, contributing to a more supportive and effective educational environment (Dolev & Leshem, 2017). These findings suggest that targeted EI training can have a profound impact on both educators and students, fostering a culture of empathy and resilience within schools.

Despite the growing body of research, there are still gaps and challenges that need to be addressed. One significant issue is the lack of longitudinal studies and culturally diverse research, which limits the generalizability of findings across different educational settings (Brandao De Souza & Jacomuzzi, 2025; Maity et al., 2025). Additionally, the reliance on self-report measures in many studies raises concerns about the accuracy and validity of the data (Halimi et al., 2021). Future research should focus on developing more robust assessment tools and exploring the long-term effects of EI interventions in diverse cultural contexts. By addressing these gaps, researchers can provide more comprehensive insights into the role of EI in education and inform evidence-based practices that enhance student and teacher outcomes.
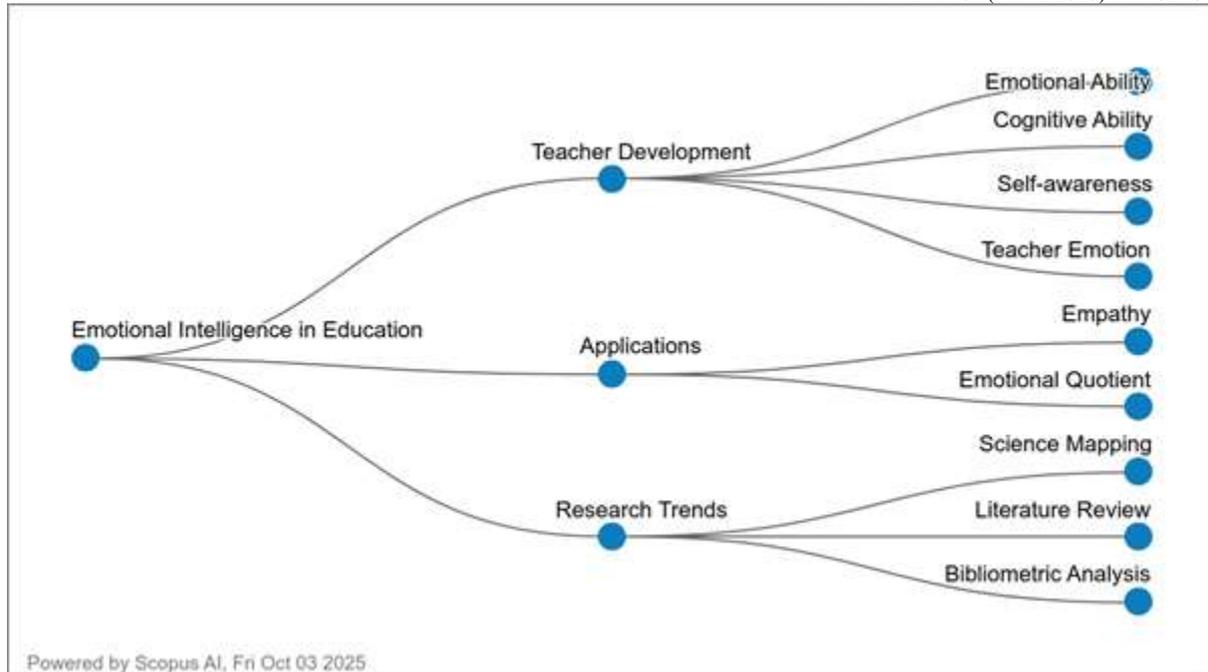
Figure 1: Conceptual Mapping of Research Clusters on Emotional Intelligence in Education Generated from Scopus Data

The concept paper on "Emotional Intelligence in Education: Global Research Trend" highlights the growing importance of emotional intelligence (EI) in shaping educational practices, teacher development, and research directions. Figure 1 illustrates the visualization of the global research trend, where three main clusters emerge: teacher development, applications, and research trends. Under teacher development, EI is linked with emotional ability, cognitive ability, self-awareness, teacher emotion, and empathy—emphasizing its role in enhancing teachers' personal growth and classroom management. Applications of EI in education extend to practical aspects such as fostering empathy, strengthening emotional quotient, and improving interpersonal relationships in learning environments. Meanwhile, research trends reveal a strong focus on systematic studies through bibliometric analysis, literature reviews, and science mapping, reflecting the global interest in evaluating EI's impact in educational settings. Overall, the synthesis of these themes shows that EI is not only a theoretical framework but also a practical and evolving field that enhances teacher capacity, supports student development, and continues to expand as a significant area of academic research worldwide.

In conclusion, the global research trend in EI within education highlights its critical role in promoting academic success, personal well-being, and effective teaching. The increasing scholarly interest and diverse thematic focus reflect the multifaceted nature of EI and its potential to transform educational practices. As research continues to evolve, it is essential to address existing gaps and challenges to fully harness the benefits of EI in education. By doing so, educators and policymakers can create more inclusive, empathetic, and effective learning environments that support the holistic development of students and teachers alike.

Research Question

The research question, together with the purpose, expected outcomes, and target audience, guides how data are found, collected, and presented. In this paper, the aim is to answer several key questions:

RQ1: What are the research trends in these studies according to the year of publication?
RQ2: What are the top 10 most cited articles?
RQ3: Where are the top 10 countries based on the number of publications?
RQ4: What are the popular keywords related to the study?
RQ5: What is co-authorship by countries' collaboration?

Methodology

Bibliometric analysis is a powerful method for systematically gathering, organizing, and interpreting bibliographic data derived from scientific publications (Alves et al., 2021; Assyakur & Rosa, 2022; Verbeek et al., 2002). Rather than limiting itself to descriptive statistics such as publication outlets, temporal distribution, or leading contributors (Wu & Wu, 2017), bibliometrics incorporates advanced analytical techniques, including co-citation and network mapping, to uncover intellectual structures within a field. A rigorous literature review requires an iterative and carefully designed process—beginning with the identification of precise keywords, followed by a comprehensive search strategy, and culminating in a critical analysis of the retrieved works. This methodological precision ensures the construction of a robust bibliography and the generation of reliable research insights (Fahimnia et al., 2015). In line with this, the present study emphasizes high-impact publications, as they offer deeper theoretical contributions and shape the trajectory of scholarly discourse. To guarantee accuracy and coverage, Elsevier's Scopus database was selected as the primary data source (Al-Khoury et al., 2022; di Stefano et al., 2010; Khiste & Paithankar, 2017). To further uphold scholarly rigor, only peer-reviewed journal articles were included, while books, book chapters, and lecture notes were excluded (Gu et al., 2019). The dataset comprised publications indexed between 2015 and October 2025, forming the basis for subsequent bibliometric mapping and trend analysis.

Data Search Strategy

In conducting the search for strategic data, the Scopus advanced search function was employed using the search string: TITLE (emotional" AND intelligence AND education OR Psychological) AND (LIMIT-TO (LANGUAGE, "English")). The access date for this retrieval was October 2025. To ensure accuracy and relevance, several screening criteria were systematically applied as outlined in Table 1. The language was restricted to English to ensure accessibility and consistency in interpretation, while non-English publications were excluded. The timeline was confined to the period between 2015 and 2025, thereby focusing on the most recent decade of scholarship, while studies published before 2015 were excluded to avoid outdated perspectives. Only journal articles were considered, with conference papers, book chapters, and other forms of literature excluded, as journal articles generally represent peer-reviewed, high-quality sources. Furthermore, only publications in the "Final" stage were retained, excluding those still marked as "In Press" to ensure reliability and completeness of information. The subject areas were limited to Environmental Science, Energy, and Social

Sciences, while other domains were excluded to maintain a sharp focus on fields most relevant to the intersection of emotional intelligence, education, and psychology. Through this rigorous selection process, the final dataset comprised 553 articles, representing a robust and refined body of literature. This dataset provides a strong foundation for bibliometric analysis by offering insights into contemporary research trends, thematic developments, and scholarly contributions over the last decade. By filtering through strict inclusion and exclusion criteria, the study ensures methodological rigor and produces findings that are both credible and highly relevant to advancing understanding in the field.

Scopus	TITLE ("emotional" AND intelligence AND education OR Psychological) AND (LIMIT-TO (LANGUAGE, "English"))
	Assess date 03 October 2025

Table 1
The Search String

TABLE 2
The Selection Criterion Is Searching

Criterion	Inclusion	Exclusion
Language	English	Non-English
timeline	2015-2025	<2025
Literature type	Journal (Article) All	None
Publication Stage	Final In Press	None

Data Analysis

VOSviewer, developed by Nees Jan van Eck and Ludo Waltman at Leiden University, the Netherlands (van Eck & Waltman, 2010, 2017). has emerged as one of the most widely adopted tools for bibliometric analysis and visualization. Renowned for its intuitive design and analytical power, the software enables researchers to construct and explore complex networks of scientific literature, including co-authorship, co-citation, and keyword co-occurrence patterns. By generating network visualizations, clustering related items, and producing density maps, VOSviewer transforms vast and intricate bibliometric datasets into accessible, visually interpretable knowledge structures. Its adaptability and continuous updates ensure relevance across diverse disciplines, while its metrics computation and customization options provide scholars with precise analytical control. Notably, the software's ability to integrate with multiple bibliometric databases enhances its scope and applicability, making it an indispensable

resource for both novice and advanced researchers. Ultimately, VOSviewer's strength lies in its capacity to reveal the intellectual structure and evolving dynamics of research fields, thereby offering critical insights into scientific landscapes and scholarly development. The association strength measure is defined as being proportional to the ratio between the observed frequency of co-occurrences of items i and j and the expected frequency of such co-occurrences under the assumption of their statistical independence (Van Eck & Waltman, 2007).

The dataset, encompassing publication year, title, author names, journal source, citation counts, and keywords in PlainText format, was extracted from the Scopus database for the period spanning 2020 to October 2025. The data were subsequently processed using VOSviewer (version 1.6.20), a software specifically designed for bibliometric mapping and clustering. By employing VOS clustering and visualization techniques, the software facilitated the generation of bibliometric maps that reveal structural patterns within the dataset. Serving as an alternative to Multidimensional Scaling (MDS), VOSviewer situates items within a low-dimensional space such that the spatial distance between any two items directly reflects their degree of relatedness or similarity (van Eck & Waltman, 2010). While conceptually similar to MDS (Appio et al., 2014), VOSviewer diverges in its normalization procedure: rather than relying on similarity metrics such as cosine or Jaccard indices, VOS employs the association strength (ASij) as a more suitable normalization method, calculated as follows (Van Eck & Waltman, 2007):

$$AS_{ij} = \frac{C_{ij}}{w_i w_j}$$

which is the association strength defined as being proportional to the ratio between the observed frequency of co-occurrences of items i and j and the expected frequency of their co-occurrence under the assumption of statistical independence (Van Eck & Waltman, 2007).

Finding and Discussions

This section presents and discusses the main findings of the bibliometric analysis conducted on the relationship between economic growth and the equity–debt composition of foreign direct investment (FDI). The results are organized according to the research questions outlined earlier, focusing on publication trends, citation performance, country contributions, keyword co-occurrences, and patterns of international collaboration. Each subsection interprets the statistical outputs and visual maps generated by Scopus Analyzer and VOSviewer, supported by descriptive analysis to highlight important developments and patterns within the field.

What Are the Research Trends in These Studies According to The Year of Publication?
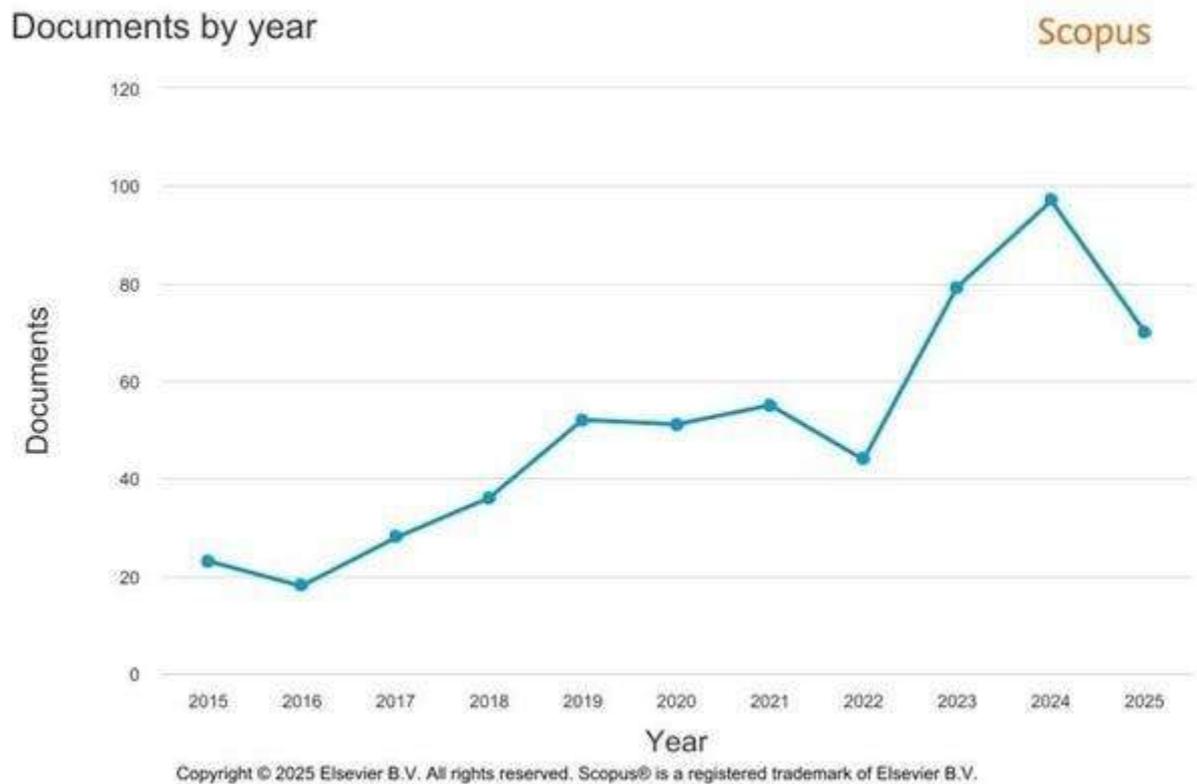
Figure 2: Publication Trend on *Emotional Intelligence in Education* From 2015 To 2025 Based on Scopus Data

The publication trend on *Emotional Intelligence in Education* from 2015 to 2025, as illustrated in **Figure 2,** demonstrates a steady upward trajectory with notable fluctuations across the decade. In the early years (2015–2017), the number of publications remained relatively modest, ranging between 18 and 28 documents, reflecting the field's gradual emergence as a significant research area. A marked increase is observed from 2018 onwards, with outputs climbing to 36 in 2018 and stabilizing around 50–55 publications annually between 2019 and 2021. This pattern suggests growing recognition of emotional intelligence as an important dimension within educational psychology and pedagogy, likely driven by increased emphasis on holistic student development and non-cognitive skills in global education systems. The substantial jump in 2022, where publications reached 44 after a relative dip in 2021, indicates a rejuvenation of scholarly interest, potentially linked to post-pandemic educational reforms where emotional and psychological well-being became central themes in teaching and learning discourse.

The years 2023 to 2025 highlight a clear peak in scholarly attention, with 79 documents in 2023, 97 in 2024, and 70 in 2025 (as of October). The surge in 2023–2024 reflects the consolidation of emotional intelligence as a global research hotspot, likely fueled by the integration of socio-emotional learning frameworks in education policies, the rise of digital learning environments requiring adaptive interpersonal skills, and increasing cross-disciplinary collaborations linking psychology, education, and social sciences. The slight drop in 2025

compared to 2024 may be attributed to incomplete data capture for the current year, as bibliometric datasets accessed before year-end often underrepresent the final publication count. Overall, this decade-long trend underscores the rising global importance of emotional intelligence in education, with the sharp growth in recent years signaling its position as a critical factor in shaping future educational practices and leadership development.

What Are The Top 10 Most Cited Articles?

Table 3: Most Cited Articles on Emotional Intelligence in Education

Authors	Year	Source title	Cited by
Chandra (2021)	2021	Asian Education and Development Studies	172
Sun et al., (2019)	2019	Computers in Human Behavior	129
(Martínez-Monteagudo et al., (2019)	2019	Personality and Individual Differences	110
Guerra-Bustamante et al., (2019)	2019	International Journal of Environmental Research and Public Health	107
Li et al., (2015)	2015	Journal of Psychiatric and Mental Health Nursing	101
Sánchez-Álvarez et al., (2020)	2020	Frontiers in Psychology	100
Maguire et al., (2017)	2017	Higher Education Research and Development	100
Gong et al., (2019)	2019	Frontiers in Psychology	99
Dugué et al. (2021)	2021	Nurse Education in Practice	95
Alotaibi et al. (2020)	2020	Leadership and Organization Development Journal	93

According to Table 3, the top ten most cited articles from 2020 to 2023 demonstrate that the literature on Emotional Intelligence in Education has evolved into a prominent global research trend, highlighting its crucial role in fostering emotional, psychological, and academic development. The highest-cited article by Chandra (2021), which examines emotional intelligence and coping strategies during the COVID-19 pandemic, reflects the worldwide relevance of EI in managing academic stress and promoting resilience during crises. Similarly, studies by Sun et al. (2019) and Guerra-Bustamante et al. (2019) emphasize the importance of EI in adolescent well-being and behavioral regulation, illustrating how emotional competencies contribute to stable mental health and better learning outcomes. The inclusion of teachers and nursing students as study samples in several works (e.g., Martínez-Monteagudo et al., 2019; Li et al., 2015) further demonstrates that emotional intelligence is increasingly regarded as a professional competency essential for preventing burnout, enhancing resilience, and improving job performance.

The dominance of publications from 2015 to 2021 indicates a growing recognition of emotional intelligence as a protective psychological factor in the face of rapid educational and social transformation. This trend underscores the global awareness that non-cognitive skills, such as emotional regulation, empathy, and interpersonal understanding, are vital for success in both academic and professional settings. The consistently high citation counts across these studies highlight not only the interdisciplinary relevance of emotional intelligence but also its practical application in addressing real-world challenges such as online learning adaptation, mental health support, and leadership effectiveness. Overall, emotional intelligence has emerged as a core construct linking education, psychological well-being, and personal growth—affirming its status as a key pillar in contemporary educational research and practice.

Where Are the Top 10 Countries Based on The Number of Publications?

Figure 3. Top 10 Countries by Number of Publications on *Emotional Intelligence in Education* (2015–2025) Based on Scopus Data

The distribution of publications on *Emotional Intelligence in Education* from 2015 to 2025 shows that Spain leads with 87 documents, followed by China (61), India (58), the United States (53), and the United Kingdom (45). These top five countries dominate global contributions, collectively accounting for more than half of the total output. Spain's prominence may reflect strong academic interest in emotional intelligence as part of its educational and psychological research agendas, where social-emotional learning and teacher training have been widely integrated into education policies. Similarly, China and India's significant outputs can be attributed to their large education systems, increasing emphasis on student well-being, and expanding research capacity. The United States and the United Kingdom, as global leaders in psychology and education research, also show strong contributions, highlighting the international recognition of emotional intelligence as a key component in fostering student performance, resilience, and teacher development.

Emerging economies such as Malaysia (29), Turkey (26), Indonesia (20), Pakistan (19), and South Africa (15) also contribute meaningfully, reflecting growing regional awareness of the importance of emotional and psychological dimensions in education. The increasing number of publications from these countries may be explained by the rising adoption of socio-emotional learning frameworks, international collaborations, and policy shifts prioritizing holistic education. For instance, Malaysia and Indonesia have emphasized character building and emotional well-being in their national education agendas, while Turkey and Pakistan show expanding interest in psychological and leadership development in schools. South Africa's contributions, though relatively smaller, reflect ongoing research in addressing socio-emotional challenges in diverse and complex educational contexts. Overall, the geographic spread of publications demonstrates both the global relevance of emotional intelligence in education and the varying levels of institutional support, research infrastructure, and cultural emphasis placed on emotional and social competencies in different regions.

What Are the Popular Keywords Related to The Study?

Figure 4: Network Visualization of the Most Frequent Keywords Related to Emotional Intelligence in Education

Co-occurrence analysis of author keywords, as applied in VOSviewer, is a bibliometric technique used to identify the frequency with which particular terms appear together across publications. The underlying concept is that keywords appearing together in multiple documents are likely to share conceptual or thematic relationships, thereby forming clusters that highlight research patterns and intellectual structures within a field. In this study, the analysis was performed using the full counting method, where each occurrence of a keyword is equally weighted. A minimum threshold of five occurrences was applied to filter out infrequent terms, leaving 196 of the total 1488 keywords for analysis. Additionally, a minimum cluster size of six was set, resulting in the generation of eight distinct clusters. This

methodological setting ensures both inclusivity of significant terms and clarity in network visualization, allowing major themes to emerge while avoiding excessive fragmentation.

The findings contribute substantially to the body of knowledge on emotional intelligence in education by highlighting its centrality and diverse linkages across psychological, educational, and health domains. The keyword "emotional intelligence" recorded the highest occurrence (454) and strongest total link strength (3240), establishing it as the dominant construct in this research domain. Closely related terms such as "psychological well-being," "students," "mental health," "nursing education," "academic performance," and "empathy" reflect the breadth of applications, ranging from student outcomes and teacher development to resilience, leadership, and clinical education. The clustering of keywords reveals how emotional intelligence intersects with pressing issues such as stress management, coping strategies, professional development, and educational achievement. This underscores the role of emotional intelligence as a multidisciplinary construct bridging psychology, education, health sciences, and organizational studies. By mapping these connections, the analysis not only captures the current thematic landscape but also points to emerging research directions, strengthening the scholarly understanding of emotional intelligence as both a theoretical and applied construct in educational contexts.

What Is Co-Authorship by Countries' Collaboration?
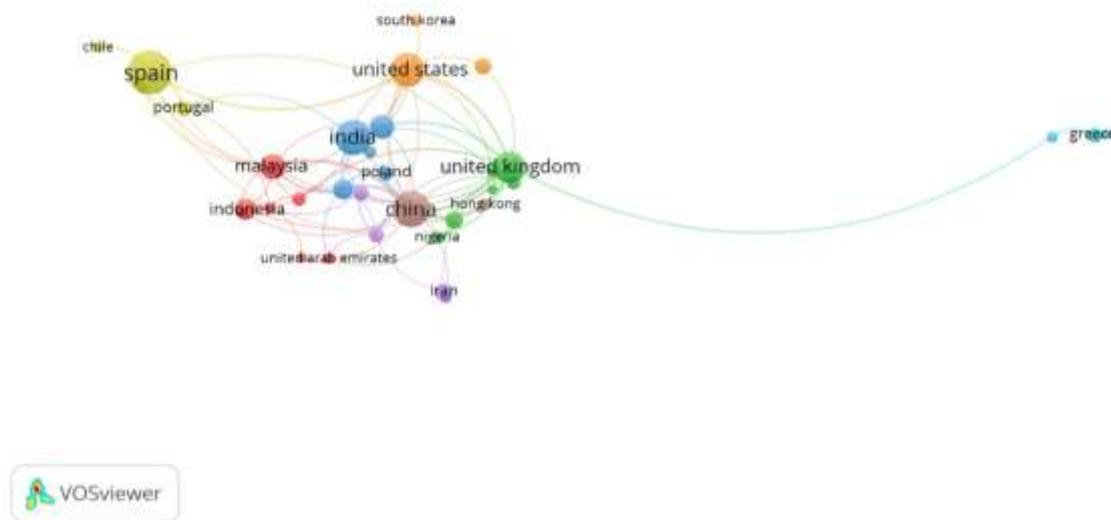
Figure 5: International Collaboration Map on Emotional Intelligence in Education

Co-occurrence co-authorship by countries in VOSviewer refers to the mapping and visualization of collaborative relationships between authors affiliated with different countries. When two or more researchers from different nations co-author a publication, this link is counted as a co-occurrence, representing international research collaboration. In this context, VOSviewer clusters countries into groups based on the strength of their collaboration ties,

highlighting which nations frequently work together and how they are positioned in the global research network. For this analysis, the settings applied were the full counting method (where each co-authorship link is fully counted), with a minimum threshold of 5 documents. Out of 82 countries identified, only 34 met this threshold, and with a minimum cluster size of 5, the system generated 8 distinct clusters. These clusters visualize the underlying collaboration structures and patterns among countries, showing not just individual productivity but also interconnectedness.

The findings contribute significantly to the body of knowledge by offering evidence of the global distribution and intensity of research collaborations. For example, countries such as China, Spain, the United States, and the United Kingdom emerge as central nodes due to their high document counts and strong link strengths, indicating their influential role in international research. Meanwhile, countries like Malaysia, Pakistan, and India demonstrate growing participation, strengthening their visibility in the academic landscape. The clustering analysis highlights regional and linguistic partnerships (e.g., European, Asian, or Middle Eastern clusters), which help scholars and policymakers understand research dynamics and potential opportunities for new collaborations. Overall, this contributes to knowledge on how research networks are structured globally, guiding future collaboration strategies and reinforcing the importance of international partnerships in advancing scientific progress.

Conclusion

The purpose of this study was to explore global research trends on emotional intelligence in education, focusing on the volume of publications, most influential contributions, and collaborative networks. By applying bibliometric analysis, the study sought to answer questions related to publication growth, citation patterns, dominant keywords, and country-level collaboration.

The findings demonstrate a steady rise in research output between 2015 and 2025, with notable surges in recent years that reflect the growing recognition of emotional intelligence as a key dimension in education. Spain, China, India, the United States, and the United Kingdom emerged as the leading contributors, while countries such as Malaysia, Turkey, and Indonesia showed significant progress in regional engagement. Citation analysis revealed that Spain achieved the highest impact, while co-authorship mapping identified eight clusters of international collaboration, with China and the United Kingdom serving as pivotal nodes. Keyword analysis highlighted leadership, psychological well-being, higher education, and academic performance as the dominant themes shaping current scholarship.

This study contributes to the field by offering a comprehensive overview of how emotional intelligence has developed as both a theoretical and practical framework in education. The results underscore the role of emotional intelligence in improving teaching practices, student outcomes, and institutional strategies, thereby extending the scope of existing literature.

The implications for practice are significant, suggesting that policymakers and educators should prioritize integrating emotional intelligence into teacher training, curriculum development, and leadership programs. Such efforts can create more supportive and empathetic learning environments that promote holistic student development.

Nonetheless, limitations exist due to reliance on Scopus-indexed, English-language publications and the exclusion of alternative databases, which may narrow the scope of insights. Future research should consider broader datasets, culturally diverse contexts, and longitudinal studies to capture deeper perspectives on emotional intelligence in education.

In summary, this bibliometric study confirms the rising global importance of emotional intelligence as an educational research domain. By mapping its intellectual and collaborative structures, the study emphasizes the value of bibliometric analysis as a tool to understand evolving research landscapes and provides a foundation for future investigations that can further enhance educational practices worldwide.

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