Special Needs in Music Education from an Inclusive Perspective: A Bibliometric Review

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ABSTRACT
Inclusive education strives to provide equal educational opportunities for all individuals. Special music education also aims to meet all students' diverse needs. However, there are few studies using bibliometric to analyze inclusive music with special needs. The purpose of this study is to use Vosviewer and CiteSpace software to analyze the research on inclusive special music education from 2013 to 2022. Using the PRISMA protocol, the researchers extracted bibliometric data from Scopus database to analyze the development and research trends of inclusive special music education from various perspectives, including countries, universities, authors, journals, years, and publishers. This study found that the overall number of papers published in 696 studies that met the inclusion criteria showed an increasing trend year by year. The United States became the country with the largest number of publications (n=157). The keyword "child" emphasizes the current research hotspots in this field. Inclusive is an important research perspective of current special music education, and the integration of inclusive special music education with music therapy, psychology and other research fields is also the research trend in this field. The researchers discussed the research background of inclusive special music education, evaluated the research status, and provided theoretical inspiration for future research in this field.

Contribution/Originality: This study has contributed to the field of inclusive music education by employing bibliometric method. The study has utilized software to visually analyze the existing research in this area, which is a novel approach within this field. The study has the potential to advance the progress of inclusive music education.
1. Introduction

Inclusive education has gained worldwide recognition since its introduction in the United Nations Salamanca Declaration in 1994 (Ainscow et al., 2019). Inclusive education aims to create effective educational environments for all students. In recent years, research and development focused on inclusive education have increased. Comarú et al. (2021) conducted a bibliometric and descriptive analysis of inclusive education in science education, which revealed an increase in the number of articles related to science education and inclusive education. Although numerous studies have examined the concept of inclusive education, there is still a need for research on inclusive special music education for students. Sanagi (2016) notes that scholars have defined inclusive education in various ways, and Messiou (2017) argues that different people have varied concepts of inclusive education. Many countries still focus on special needs or other marginalized groups (Ainscow et al., 2006). From the perspective of policy development, Slee and Allan (2001) discuss how the policy of inclusive education is influenced by traditional formal education and special education.

There remains a research gap in inclusive special music education for students. While music education provides numerous benefits to children, including the development of perceptual skills and spatial reasoning (Hallam, 2010), educators should comply with the law while actively seeking ways to make teaching more inclusive (Abramo, 2012). Thus, the current study aims to address this research gap by conducting a bibliometric review of research publications on inclusive special music education for students. Through this research, the researcher explore the current state of research, identify gaps in the literature, and provide insights for future research in this field. The specific objectives of the study are:

i. To identify the current state of research on inclusive special music education for students;
ii. To analyze the research trends in inclusive special music education, including countries, universities, authors, journals, years, and publishers;
iii. To assess the research methods and approaches used in studies on inclusive special music education for students;
iv. To identify research gaps and provide theoretical insights for future research in this field.

This paper aims to conduct a bibliometric review of research publications related to inclusive special music education for students with visual impairments. The study used the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) protocol to extract bibliometric data from the Scopus database, and has used VOSviewer software. The research provided insights into the development and research trends of inclusive special music education from various perspectives, including countries, universities, authors, journals, years, and publishers.

The researchers first discussed the connection between inclusive education and music inclusive education before describing the research methodologies utilized. The focus of the study is the integration of students with special needs in music classes. By analyzing the year of publication, number of papers published by authors, country, authors’ institutions, and keywords, the author summarized the latest research focus themes through VOSviewer and CiteSpace software.
2. Literature Review

2.1. The perspective of inclusive special education

Inclusive education is a concept that has impacted the development of special education. It aims to eliminate barriers and discrimination faced by students with special needs by placing them in typical classrooms and providing them educational opportunities alongside peers. However, despite inclusive education’s benefits, special education still faces challenges and difficulties.

One of the most significant challenges faced by inclusive education is the shortage of teachers with special educational training and qualifications (Avramidis et al., 2000). Thornton et al. (2007) believed the shortage of special education teachers resulted from the insufficient supply and increased demand caused by demographic changes and the accountability movement. Another important problem in the development of special education is the shortage of teaching resources. This shortage affects the learning of students with special needs and significantly impacts teachers. Hester et al. (2020) found the original reason for teachers leaving the field of special education originated from the lack of school support and corresponding teaching resources. Edward et al. (2018) found that special education workers working with limited resources may experience increased stress.

Compared with general education, special education has many shortcomings in teaching and teaching staff construction. Teaching students with special needs separated from the general population impacts physical, mental and academic progress. The emergence of the concept of inclusive education has promoted the development of special education, which has improved the inequality of educational opportunities and resources. Friend et al. (2010) noted the implementation of cooperative teaching is beneficial for students with disabilities to be more able to access the general curriculum. This cooperative teaching involves the general education teacher, the special education teacher, and/or another expert teaching together in the general education class. Mag et al. (2017) noted that inclusive education has been firmly established as the main policy for children with special needs or disabilities. The implementation of inclusive education within special education can promote the elimination of obstacles and discrimination. Begeny and Martens (2007) posit that integration can prepare students with disabilities for better integration into community life, and it expands the teachers’ instructional strategies for inclusive classrooms.

Despite the significant strides made by the concept of inclusive education in advancing special education, challenges and difficulties still persist in special education. The qualification of teachers have a significant impact on the inclusion of special education. Cooc (2019) found that in classrooms with a high proportion of students with special needs, teachers may have the least qualifications and the greatest professional development needs. In addition, the shortage of teachers with special educational abilities combined with the professional development needs of current teachers have impacted policy on the education of disabled children. Crispel and Kasperski (2019) stressed the importance of teacher training, and believed that not only teachers of special education, but all teachers should integrate the concept of inclusive education into their planning in order to address the needs of students. Putting disabled students in typical classrooms without teacher training will result in challenges for the teacher and the students. Therefore, previous scholars have studied teachers’ attitudes towards
inclusive education. Avramidis et al. (2000) investigated the attitude of preservice teachers towards inclusive education. The data showed that the respondents had a positive attitude towards inclusive education, but their perceived abilities decreased with the physical severity of the child. McHatton and Parker (2013) conducted a longitudinal study to compare the attitudes of pre-service teachers in general education and special education. The results showed that after working in an inclusive education environment, pre-service teachers in general education improved their attitude towards inclusive education. Alnahdi and Schwab (2021) found a significant positive correlation between teachers' inclusive attitude and teachers' self-efficacy in the inclusive classroom. At the same time, participants with disabled relatives showed a more positive attitude towards integration education.

Special education is aimed at students with special needs. The reserve of special education teachers and the lack of pre-service training and teaching resources have hindered the development of special education. Although, with the progress of society, the learning needs and conditions of special students have gradually attracted public attention. However, the emergence of inclusive education provides a new direction for special education. It is helpful to eliminate barriers and discrimination by placing students with special needs in general classrooms to receive education with typical students. There remain problems and gaps in the research for implementation inclusive education. The researchers hope to provide readers with a basic understanding of the inclusive development of special education through this literature review.

2.2. Special music education for inclusive purposes

Music learning has far-reaching significance for human development. Regelski (2005) emphasized the pragmatism and sociality of music in origin, meaning and value, and the practical orientation of music education emphasized the appreciation in use, that allows students and society to find meaning in music. Sloboda (2001) posits that school music education needs tacit understanding between teachers, students, parents, government, and other stakeholders to operate effectively. The current conceptualized and organized classroom music may not be the appropriate carrier of mass music education. The researcher have identified the problems and changes that need to occur in the development of music education. Young (2016) reviewed the research on music education for early children and identified a focus on the young children's music experiences. At the same time, he suggested that political decisions related to music education should be handled and decided by people who are invested in music education. Burnard (2007) discussed how to promote the reform of music education and teaching by reshaping creativity and technology.

Special music education is music education for students with special needs. Students with special needs have different needs for education due to physical or psychological differences. Some studies have found that music education is beneficial for students with special needs. Darrow (2011) believes that music education can provide support for communication, cognitive development and social/emotional development for disabled children aged 3-5 years old. Music education can create positive emotional changes and reduce anxiety for children. Foley (2017) found that music education is beneficial for students with autism in learning, behavior and communication skills. It is the same as the inclusive development trend of special education.
Special music education has also entered the process of inclusive development, which creates challenges for music teachers. Jones (2015) conducted a research review on music education related to the Law on the Education of the Disabled. The review found that music teachers focused on providing knowledge and experience for disabled students. Music teachers lacked experience in teaching courses; however, the interaction between pre-service teachers and disabled students improved teachers' teaching confidence. Grimsby (2020) believes that music teachers need more pre-service preparation and continuous professional development that focuses on disabled students, more time to cooperate with special education professionals, more consistent communication, advice on how to interact with disabled students, and access to assistive technology. Darrow (2003) believes the important factor leading to the heterogeneity of inclusive classroom is the diversity and severity of the disabled in the classroom. Teachers should provide a wide range of instructional methods and materials to meet the needs of all students, and simultaneously evaluate the learning of students with different abilities. Scott et al. (2007) found that teachers generally have a positive attitude towards integration and access to support. VanWeelden and Whipple (2014) studied the effects of the music classroom on curriculum integration and adjustment. The results showed that students have successfully integrated into the society and their music needs have been met. In addition, teachers are willing to adjust the curriculum to meet the needs of students with special needs.

Technological innovation has promoted the inclusive development of special education. Teachers can teach music more effectively to students with special needs through technical assistance. Sabuncuoglu (2020) developed a music platform for visually-impaired children. This affordable and easy-to-use programming tool provides visually-impaired students with opportunities for music creation and learning. Everyone should have the right to receive music education. Students with special needs should enjoy the same right to learn music as other students. They should have adequate resources, learning opportunities, and skilled teachers. Historically, the inclusion of special music education has been marginalized. Inclusive education is a basic right of the disabled; therefore, music as a basic element of the curriculum cannot be excluded (Lubet, 2011). Abramo (2012) stressed the current trend of disabled people learning music and noted that teachers constantly search for more inclusive teaching methods. Resorting to different disability models and paying close attention to language can help all students. The inclusive development of special music education is the trend of its development. Inclusive development is conducive to improving the educational environment and current situation of individuals with disabilities. However, compared with general music education, inclusive special music education is not receiving attention by the public. Therefore, the researchers provided this basic overview of inclusive special music education to lay the foundation for the results of this bibliometric review.

3. Research Methodology

The researchers conducted a systematic review using the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) process in the field of inclusive music education for special needs. The PRISMA process emphasizes transparent and comprehensive reporting of data to reveal evidence related to specific problems (Aromataris & Pearson, 2014). It is widely used in biomedical literature and has become one of the most cited reporting guidelines. Bibliometrics involves the application of mathematical and statistical methods to analyze published scientific research, enabling the identification and evaluation of overall trends in specific topics, such as journals and
countries (Sarkis-Onofre et al., 2021). The researchers examined the data using bibliometrics. The use of mathematical and statistical methods to the study of published scientific research is made possible by the field of bibliometrics. This strategy helps to identify and evaluate the overall trend of specific topics, such as journals and countries (Cai & Guo, 2021).

The researchers conducted their search using Scopus database, one of the world’s largest databases of selected abstracts and citations. It includes a wide range of scientific publications, conference proceedings, and books from throughout the world, making it a reliable source for quantitative academic and scientific research (Baas et al., 2020). The search terms used were "inclusive music education," "special needs." The researchers limited their search to English-language journals published during the 10-year period from 2013 and 2022. The obtained documents were then screened using specific criteria and a defined process as illustrated in Figure 1.

Figure 1: The literature selection roadmap (Compiled by the authors)

The researchers utilized VOSviewer and CiteSpace to visualize and analyze bibliometric data in their research on music inclusive education. VOSviewer and CiteSpace can process large bibliometric datasets and enable the creation of bibliometric maps (Eck & Waltman, 2009). VOSviewer and CiteSpace, as software programs, can create and examine bibliometric maps, especially in large datasets. They can construct maps of authors, journals, and/or keywords based on commonly occurring data, which helps determine research trends and collaborations. By utilizing VOSviewer and CiteSpace, the researchers were able to analyze their bibliometric data in a more comprehensive manner to identify trends and collaborations in music inclusive education, which could be useful in identifying research gaps and areas for future study. The use of these
software programs in bibliometric research can provide valuable insights and aid in the advancement of knowledge in various fields.

4. Research findings

4.1. Publishing status in Scopus system

The present study aimed to investigate the trends in English articles related to the inclusion music education with special needs from 2013 to 2022 using Scopus database. A total of 696 studies were identified, with the highest number of publications (with an annual publication of 171 papers) occurring in 2022 (see Figure 2). Except that the number of papers published in 2016 decreased compared with the previous year, the rest showed an increasing trend year by year. The results suggest a significant increase in global research related to the inclusion of special music education over the past decade. This trend may reflect a growing interest in the topic and a recognition of the value of inclusive education in the field of music. The findings of this study could be used to inform future research and practice in the field of special music education, and to promote greater awareness and understanding of the benefits of inclusive music education. It is important to continue monitoring and evaluating research trends in this field to ensure that research and practice remain relevant and effective in addressing the needs of special music education students.

Figure 2: Annual publication outputs of inclusive music education with special needs from 2013-2022

4.2. Distribution by Country

In the field of music education with special needs, inclusive education has become an increasingly prominent research discipline on an international scale. As a result, numerous countries have contributed to this area of research over the last decade. The authors compiled a list of the top 10 countries in terms of paper production in this field. Furthermore, they computed the number of citations and citation rate for each article, as depicted in Table 1.
Table 1: Publications ranked by country

<table>
<thead>
<tr>
<th>Rank</th>
<th>Country</th>
<th>Number of papers</th>
<th>Citations</th>
<th>Citation/Paper (CP)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>United States</td>
<td>157</td>
<td>1618</td>
<td>10.305</td>
</tr>
<tr>
<td>2</td>
<td>United Kingdom</td>
<td>82</td>
<td>1104</td>
<td>13.463</td>
</tr>
<tr>
<td>3</td>
<td>Australia</td>
<td>70</td>
<td>891</td>
<td>12.728</td>
</tr>
<tr>
<td>4</td>
<td>Spain</td>
<td>50</td>
<td>453</td>
<td>9.06</td>
</tr>
<tr>
<td>5</td>
<td>Canada</td>
<td>40</td>
<td>432</td>
<td>10.8</td>
</tr>
<tr>
<td>6</td>
<td>South Africa</td>
<td>23</td>
<td>169</td>
<td>7.347</td>
</tr>
<tr>
<td>7</td>
<td>Finland</td>
<td>21</td>
<td>230</td>
<td>10.952</td>
</tr>
<tr>
<td>8</td>
<td>Sweden</td>
<td>21</td>
<td>266</td>
<td>12.666</td>
</tr>
<tr>
<td>9</td>
<td>Turkey</td>
<td>21</td>
<td>93</td>
<td>4.428</td>
</tr>
<tr>
<td>10</td>
<td>Netherlands</td>
<td>20</td>
<td>1464</td>
<td>73.2</td>
</tr>
</tbody>
</table>

The analysis of country-wise distribution and citation patterns can provide valuable insights into the status of research in the field of inclusive music education with special needs. This data can help to identify the most productive countries and institutions, as well as the key researchers and topics within the field. Such insights can be particularly useful for policymakers, funding agencies, and educators seeking to develop effective strategies and initiatives to promote inclusive music education.

The data shows that the United States of America had the highest number of published articles related to the inclusion of special music education, with a total of 157 articles, as well as the highest number of cited articles is also in the forefront. This indicates the United States has been at the forefront of research in this area and has invested significant resources into this topic. The United Kingdom and Australia followed closely behind, ranking second and third in terms of the number of articles published. It is worth noting that a majority of countries ranked in the "top ten" in terms of published articles were located in North America and Europe, as the United Kingdom, Spain, Sweden, Finland, and Netherlands have contributed significantly to the study of inclusive education and music education. It is worth noting that although Netherlands ranks last in the number of published papers, it has the highest number of citations. Conversely, none of the nations in Asia were among the top ten for publications on inclusion music education with special needs. This finding suggests a gap in research in this area among Asian nations, and further attention and investment is needed to address this issue. Overall, this data highlights the importance of international collaborations and exchanges of ideas to advance research in inclusive music education.

The researchers conducted an analysis of bibliometric coupling by country on inclusion of special music education. Bibliographic coupling is a quantitative method that measures the connection between two documents by examining the number of times they cite the same documents. To perform the analysis, the researchers set the minimum number of documents issued by each country to 10, resulting in a total of 24 countries being analyzed. The results are displayed in Figure 3, with each circle representing a country and its size indicating its contribution to the field. The analysis revealed that the United States has the highest number of papers in this field and is also the country with the strongest bibliometric links with other countries. The United Kingdom and Spain follow as the next two countries with the strongest bibliometric links. Interestingly, all continents are represented among the top 24 countries in terms of the number of
publications. Singapore, South Africa, and other countries are involved in the research of inclusion of special music education. The findings suggest that inclusion of special music education is a global research topic that has attracted attention and efforts from many countries. The strong bibliometric links between countries reflects the collaboration and knowledge exchange among researchers in this field. The involvement of countries from different continents demonstrates the universal nature of this research topic and the importance of promoting inclusive education through music worldwide. The analysis provides valuable insights for researchers and policymakers in identifying potential collaboration opportunities and areas of focus for future research in this field.

**Figure 3: Bibliometric coupling of countries**

In the field of inclusion music education with special needs, the researchers conducted an analysis of the cooperation between authors from different countries through co-authorship. The total number of publications in a country and its significant links with other countries were determined. **Figure 4** represents the collaborative relationship with different colors, and the size of the circle represents the strength of the collaboration between the country and other countries. The United States has the strongest collaborations with other countries in this field. It is noteworthy that many Asian countries, such as China, Singapore, Malaysia and Japan have collaborated extensively. However, this research field is rarely explored in African countries, such as Ghana, which mainly collaborates with South Africa.
The study's findings suggest that collaborations between authors from different countries is critical for the development of research on inclusive music education with special needs. Additionally, this research field is global in scope and engages authors from various regions worldwide. The strong collaborations between the United States and other countries indicates that inclusive music education with special needs is a subject of interest for researchers globally. Additionally, the high level of collaboration between Asian countries highlights the region's commitment to advancing research on inclusive music education. Conversely, the underrepresentation of African countries in this field suggests that more attention is needed in this region to promote research on this topic. Overall, this data underscores the importance of cross-border collaborations to advance research on inclusive music education and promote an inclusive learning environment.

Figure 4: Co-authorship among countries (Compiled by the authors)

4.3. Distribution by Institution and Universities

The institutional contribution to research on inclusion of special music education is an important aspect to consider. Figure 5 presents an analysis of the volume of documents published by universities and institutions over the past decade. The University of Melbourne has published the largest number of papers with a total of 12, followed by the UCL Institute of Education and University College London with 11 and 10 papers, respectively. This indicates that these institutions have been actively involved in research related to inclusive education and music education. The University of Melbourne's significant contribution to this field could be attributed to its well-established and internationally-recognized music education program. Similarly, the UCL Institute of Education and University College London have demonstrated commitment to this field through their research output. The institutions in these regions have been focusing on exploring the role of music education in supporting the inclusion of students with special needs. The contribution of institutions in other regions is relatively low, which highlights the need for more collaboration and effort to promote research on inclusive music education in a wider range of institutions.
4.4. Keywords analysis

4.4.1. Co-occurrence of authors’ keywords

The researchers who have published the most articles in this discipline over the past decade is listed in Table 2 below. Furthermore, the table presents the chronological information on the most recent publication year of each author’s piece in which they served as the primary author. The icon indicates that Wong (2022) is the most prolific author in this discipline, with a total of eight published articles. In addition, second-ranked Chik et al. (2005), published six articles followed by Pickard (2021), Salvador et al. (2022), and Woodcock et al. (2022) at four articles each.

Table 2. The most published author during the past decade

<table>
<thead>
<tr>
<th>No.</th>
<th>Author Name</th>
<th>Number of papers</th>
<th>Citations</th>
<th>CP</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Wong (2022)</td>
<td>8</td>
<td>33</td>
<td>4.125</td>
</tr>
<tr>
<td>2</td>
<td>Chik et al. (2005)</td>
<td>6</td>
<td>31</td>
<td>5.166</td>
</tr>
<tr>
<td>3</td>
<td>Pickard (2021)</td>
<td>4</td>
<td>9</td>
<td>2.25</td>
</tr>
<tr>
<td>4</td>
<td>Salvador et al. (2022)</td>
<td>4</td>
<td>16</td>
<td>4</td>
</tr>
<tr>
<td>5</td>
<td>Woodcock et al. (2022)</td>
<td>4</td>
<td>14</td>
<td>3.5</td>
</tr>
<tr>
<td>6</td>
<td>Asongu et al. (2021)</td>
<td>3</td>
<td>103</td>
<td>34.333</td>
</tr>
<tr>
<td>7</td>
<td>Beach and Larsson (2022)</td>
<td>3</td>
<td>37</td>
<td>12.333</td>
</tr>
<tr>
<td>8</td>
<td>Canazza et al. (2022)</td>
<td>3</td>
<td>43</td>
<td>14.333</td>
</tr>
<tr>
<td>9</td>
<td>Chan et al. (2020)</td>
<td>3</td>
<td>15</td>
<td>5</td>
</tr>
<tr>
<td>10</td>
<td>Culp and Robison (2022)</td>
<td>3</td>
<td>11</td>
<td>3.666</td>
</tr>
</tbody>
</table>

In addition, the researchers also made a co-occurrence analysis of the author's keywords, and the results are shown in Figure 6. Author keyword means to extract terms from the keywords provided by the author of the article as the object of analysis. A total of 50 keywords were selected. This section's research is conducive to elucidating the inclusion of special education in music education research trend. In this section, the key words analyzed by the author are based on the textual content of the key words in
the paper, and reflect the frequency with which a key word appears alongside other key words.

In Figure 6, the color indicates the same cluster, and the distance of the circle represents the degree of connection between each keyword, while the size represents the number of references. This visually represents the research “hotspots” of the author's keyword co-occurrence mainly focus on the fields of "inclusive education," "special education," "music education," and "disability." In addition, the graph shows that the largest keyword of the node, "inclusive education," is more commonly associated with keywords such as "self-efficacy," "attitudes," “teachers," indicating that these research fields are closely related.

Figure 6: Co-occurrence of authors’ keywords

4.4.2. Co-occurrence of all keywords

Using Vosviewer software, the researchers performed a co-occurrence analysis of all the article’s keywords and set the minimal number of co-occurrence keywords to five. All keywords represent extracting terms from literature keywords as the object of analysis. Of the 228 terms, the authors identified the five most prevalent general terms: human, article, human, male, and female. As shown in Figure 7, a total of 147 items and 6 clusters were subsequently obtained. The researchers have chosen the terms music, special education, and inclusive education to describe this study. As shown in Figure 7, these three terms belong to the same cluster, and they will be examined individually and included in the discussion section.
4.4.3. Keywords: Music education

Figure 8 shows the key links related to music education. From Figure 8, readers can identify that music education is most closely related to the key word “special education.” In addition, Hong Kong has become the most relevant region for music education research. Music Education comprises a large portion of “space” in the field of inclusive education.
4.4.4. Keywords: Inclusive Education

Inclusive education in Cluster1 occurred 52 times. The magnitude of its circle indicates that this term holds a crucial position in the retrieval field. In addition, inclusive education has ties to five clusters and to both children and adults, making them the primary subjects of research over the past two decades. Meta-analysis and priority journals are the primary research methods for this keyword. In addition, the study’s contents can be seen in Figure 9. The distance between lines indicates the proximity of two words, which has the least relationship with inclusive education. Moreover, autism has evolved as a malady affecting a distinct population. In addition, the reappearance of Hong Kong is noteworthy.

Figure 9: Keyword co-occurrence of inclusive education

4.4.5. Keywords: Special Education

Special Education belongs to cluster1 and appeared 43 times (see Figure 10). It is related to music education and inclusive education. Hong Kong has, like inclusive education, become the only region in the term link. Additionally, it has the most connections to music. Music has ties to music therapy in addition to music education. Children, pupils, and adults are the primary research subjects for special education, as indicated in the graph. Similarly, this keyword emphasizes certain research methodologies, including controlled study, major clinical study, and clinical study. Special education research focuses primarily on attitude, perception, social interaction and e-learning, etc. Autism has re-emerged as a mental illness, which is worthy of mention.

In conclusion, the researchers analyzed the co-authorship among countries that published the greatest number of articles in the field of special music education and inclusion. The United States, Europe, and other developed nations are the countries with the most publications, according to the analysis. The researchers also identified the most
pertinent journals and articles published on this subject to elucidate the focus of various journals in this discipline. In addition, this section provided data analysis on the co-occurrence of all keywords and the author’s keywords. This analysis is intended to facilitate awareness of the research trends and research context in the field of special music education inclusion.

Figure 10: Keyword co-occurrence of special education

![Keyword co-occurrence of special education](image)

5. Discussion

5.1. About the research of inclusion music education with special needs

The co-occurrence of keywords in three groups of keywords is discussed in this section. Based on the data, special education is closely related to music education and inclusive education. Although music education is not directly linked to inclusive education, the general figures and diagrams included in this paper show that the two are closely related. Lubet (2009) suggests that music can contribute to inclusive education by providing a unique perspective. In addition, Dissanayake (2001) believes music is essential for cultivating group cohesion and cooperation. Therefore, promoting inclusive special music education can help eliminate discrimination and enhance cooperation and connection between people. Autism appears twice in the co-occurrence of these three keywords, indicating that studying autism or autism spectrum disorder (ASD) is crucial for inclusive special music education. Johnson and LaGasse (2022) studied music...
creativity in autistic patients under the mode of peer-assisted learning. They found that the prosocial skills of some ASD children increased in the process of learning music with children without known disabilities. Hong Kong appears in the collinear map, indicating a focus of authors in that region on the inclusion of special music education. Wong et al. (2016), Wong and Chik (2016) published two articles on inclusion of special music education in Hong Kong, exploring the scale development of integrated music education and the experience of music teachers in primary schools in inclusive music teaching.

These findings highlight the importance of considering music education in promoting inclusive education and the potential benefits of music activities for children with visual impairment. The study suggests that peer-assisted learning can be a useful tool for cultivating a more inclusive environment in school music education. The focus of authors in Hong Kong on inclusive special music education suggests a need for further research in the region. Overall, the results of the co-occurrence analysis provide valuable insights for developing effective strategies for promoting inclusive special music education.

5.2. Future trends

The present study employed CiteSpace software to examine the temporal patterns of terms commonly associated with the inclusive music education with special needs, with the aim of identifying future research trends in this domain. The findings are depicted in Figure 11.

Figure 11: Keyword co-occurrence timeline

The timeline chart for keyword clustering visually represents the temporal evolution of keywords within a cluster, while the line graph illustrates the presence of co-occurrence among these terms. Keyword co-occurrence analysis enables the acquisition of information regarding the duration and evolutionary patterns of contemporary research focal points. The term clustering label is situated on the right side of the timeline map. It displays the top ten big clusters, identified as #0-#9. The representation of keywords as nodes and the utilization of time and topic as axes allows for the identification of certain years in which certain topics are emphasized. Furthermore, this approach facilitates the
examination of the development of subject categories through time. The statistics indicate that there is a current research trend in the field of special music education that emphasizes the integration of mental diseases, emotional processing, and peer-assisted learning. Furthermore, there is a growing interest among individuals in investigating the correlation between music education and inclusive education, as well as the influence of music education on the enhancement of group cohesion and cooperation. The growing emphasis on inclusive education has led to a heightened significance placed on researching the inclusion of special music instruction in recent years. Hence, it is imperative to do additional study in order to delve into the prospective advantages of music education for children with disabilities, as well as to determine the most efficacious approach for integrating music into inclusive education initiatives.

Figure 11 illustrates that the concept of "child" has been a prominent focal point in the realm of inclusive special music education during the course of the previous decade. Nevertheless, contemporary research on inclusive music extends beyond the realm of special music instruction for children. Certain researchers have directed their focus towards different age cohorts, such as the incorporation of specialized music education into tertiary institutions. In their recent publication, Powell et al. (2021) examined the music curriculum within the university context and emphasized the necessity of cultivating a curriculum that is characterized by inclusivity, fairness, diversity, and cultural sensitivity. The researchers argue that such a model is crucial for the advancement and prosperity of music education in the next years.

6. Contributions

This bibliometric review of research publications on inclusive music education with special needs will provide valuable insights into the current state of research on this topic. This study and results contribute to the ongoing efforts to advance the field of inclusion and special music education in an effort to promote a more inclusive, equitable society. The study will contribute to the advancement of inclusive education by highlighting the importance of developing effective teaching strategies and tools that can be used to create inclusive music education environments for special needs. The findings of the study will also be useful for educators, policymakers, and researchers interested in improving the quality of music education for students with special needs.

The findings of this study contribute to the advancement of inclusive education by recognizing the critical importance of human development rights and interests within the context of the global community. Theoretical contributions are discussed in the concluding section, along with preliminary findings. Previous research on the inclusion of special music education and the present state of research are examined, which is a significant factor in determining the research context. Although the PRISMA research method has caused a research upsurge of scholars worldwide, there remains a gap in comprehensive research on the field of inclusion of special music education.

7. Limitation

Although this study contributed to the organization of literature in the field of inclusion of special music education, there are limitations to this research. First, bibliometric analysis is based solely on Scopus database, which may have certain limitations. Furthermore, this study only includes articles from Scopus database and may not include articles from other databases. Additionally, the study has language and time
limitations, as it only includes articles published in English in the past 10 years. As a result, this study may not provide a comprehensive picture of the research on inclusion of special music education worldwide. To improve the analysis of the data in this field, future studies could consider expanding the search to other databases, languages, and time periods to obtain a more comprehensive understanding of the research trend in the field of inclusion music education with special needs.

8. Conclusions

The present study included a comprehensive bibliometric analysis of the literature on inclusion of special music education, examining the number of publications, countries, authors, and keywords in the field. By summarizing the findings, readers can identify that the development of inclusive special music education has the potential to eliminate discrimination and inequality among people and can create diverse and equitable interpersonal relationships and teaching environments. This area of research holds significance for music learning, as well as for promoting more inclusive and equitable education. Based on the results of this analysis, we predict that future research will continue to focus on the promotion of inclusive music education, particularly in relation to special education, as well as explore how music can be used to foster social and emotional development among students. In addition, research may continue to investigate the role of peer-assisted learning and collaborative teaching practices in promoting inclusion and equity in music education.

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Conflict of Interest

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