A Bibliometric Analysis of the Concept of Inclusive Education

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Abstract

In this study, a total of 2824 open access articles published in English between 2016-2024, which were scanned in the Web of Science (WoS) database and included the concept of "inclusive education", were examined. Within the scope of bibliometric analysis, various scientific productivity and interaction indicators such as authors, institutions, countries, source journals, keywords and citation structures related to these publications were evaluated. In the analysis process, VOSviewer software (version 1.6.19) was used to visualize the bibliometric data. Through the software in question, the relationships between conceptual structures, cooperation networks and prominent themes in the literature are presented in the form of visual maps. In this way, the tendencies, research gaps and future orientations of academic studies in the field of inclusive education have been revealed in a holistic way.

INTRODUCTION

Inclusive education, as a fundamental approach that aims to ensure equal access and full participation of all individuals in the education system, has been at the center of global education policies and academic literature in recent years. This study examined 2824 open access and English-language articles scanned in the Web of Science (WoS) database with a comprehensive bibliometric analysis in order to understand the scientific production on inclusive education in a more in-depth way. In the bibliometric analysis process, indicators such as authors, institutions, countries, source journals,

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keywords and citation structures were evaluated; Using VOSviewer software, scientific productivity and collaboration networks were visualized. In this direction, research trends, strong actors, cooperation structures and conceptual themes that stand out in the literature in the field of inclusive education have been systematically revealed; It has contributed to the understanding of the current situation and future research directions in the field.

Literature Review

The Concept of Inclusive Education

The concept of inclusive education is based on an understanding that argues that the differences between individuals should be accepted as a richness and aims to ensure the equal participation of all students in the education system. The inclusive education approach, which was widely placed on the international agenda for the first time in the 1990s, especially with UNESCO's Salamanca Declaration (1994), has evolved over time with the aim of guaranteeing the right to education of all disadvantaged groups, not just the integration of people with disabilities (UNESCO, 1994). Inclusive education addresses the mechanisms that influence the inclusion or exclusion of students in schools, together with the perspectives behind these mechanisms and at the institutional level (Rapp & Corral-Granados, 2021).

Ainscow (1999) defines inclusive education not only as an integration process for specific groups of individuals, but as a paradigm shift aimed at the transformation of all education systems. Slee (2011), on the other hand, emphasizes that inclusive education is a social justice issue that requires radical changes in education policies and practices.

In the literature, teachers' attitudes towards inclusive education are one of the important research topics in the field. Avramidis and Norwich (2002) found that teacher attitudes play a decisive role in the success of inclusive education practices. In this context, Bandura's (1997) self-efficacy theory and Ajzen's (1991) theory of planned behavior are frequently used to explain how teachers behave and make decisions in inclusive classrooms.

The Theory of Planned Behavior (TPB) provides an effective theoretical framework for understanding individual behaviors for the implementation of inclusive education in schools. This theory, developed by Ajzen (1985, 1987), describes the intentions of individuals to exhibit a certain behavior; It is based on three main determinants: attitudes, subjective norms, and perceived behavioral control. In the context of inclusive education, the attitudes of teachers or school administrators towards including students with different characteristics, environmental expectations (subjective norms) and their perceptions of competence in managing this process can directly affect the adoption of inclusive

practices. As a matter of fact, empirical studies show that teachers' positive attitudes towards inclusive education and feeling that they have adequate support mechanisms are decisive in implementing inclusive pedagogical approaches. For this reason, TPB is an important analysis tool that allows the systematic analysis of individual and social factors that prevent or support inclusive education.

Current studies consider inclusive education not only as a pedagogical process, but also as a human right and social justice issue (Booth & Ainscow, 2011; Florian, 2014).

Recent bibliometric analyses show that there is an increasing thematic diversity in the inclusive education literature. Keyword co-occurrence analyses show that concepts such as "inclusive education", "special educational needs", "disability", "teachers", "attitudes" and "self-efficacy" are frequently used and the field is handled with both pedagogical and structural dimensions (Schwab & Alnahdi, 2020). However, it is observed that the cooperation structures in inclusive education research have not yet matured and the studies are largely carried out individually or with small research groups (Carrington & Robinson, 2006). This situation reveals that interdisciplinary and international collaborations should be encouraged in the future. Bibliometric studies also show that productivity and cooperation networks in the field of inclusive education are quite dispersed. Although some researchers, such as Schwab and Carrington, have a central position, it is generally observed that strong and continuous cooperation networks are not sufficiently formed among the authors. This indicates that the field should be supported by more collective and multidisciplinary research.

Field Based Distribution of 2,824 Publications on the Concept of "Inclusive Education"

Figure 1. Area Based Distribution

The largest area belongs by far to the Education Educational Research category (1,552 records). This suggests that inclusive education is primarily studied in the context of educational research. The second largest category belongs to Education Special (398 records). This shows that this field is directly related to inclusive education. The categories of Social Sciences Interdisciplinary (170 records) and Rehabilitation (165 records) also have a significant number of publications. This shows that inclusive education is studied not only in education, but also in the fields of social sciences and rehabilitation. Other categories include areas such as Environmental Sciences, Green Sustainable Science Technology. These areas are indirectly linked. Psychology-based studies such as Psychology Multidisciplinary (96) and Psychology Educational (59) are also noteworthy. This suggests that the psychological dimensions of inclusive education practices (e.g., student behaviors, learning needs) are investigated. Studies are also taking place in less directly related areas, such as Health Care Sciences Services (47 records). This suggests that it may be on the integration of individuals with special health-related needs into education.

It is seen that the inclusive education literature is mainly concentrated within the framework of education and special education, but it also establishes serious multidisciplinary connections with disciplines such as psychology, social sciences and rehabilitation.

Table 1 shows the ratios for area-based distribution.

Table 1. Field Based Distribution of the concept of "inclusive education"

Field: Categories	Record Count	% of 2.824	Field: Categories	Record Count	% of 2.824
Education Educational Research	1,552	54.958%	Sociology	30	1.062%
Education Special	398	14.093%	Pediatrics	29	1.027%
Social Sciences Interdisciplinary	170	6.020%	Psychology Developmental	28	0.992%
Rehabilitation	165	5.843%	Language Linguistics	26	0.921%
Environmental Sciences	109	3.860%	Social Issues	26	0.921%
Psychology Multidisciplinary	96	3.399%	Linguistics	24	0.850%
Environmental Studies	91	3.222%	Neurosciences	24	0.850%
Green Sustainable Science Technology	90	3.187%	Education Scientific Disciplines	20	0.708%
Psychology Educational	59	2.089%	Social Work	19	0.673%
Health Care Sciences Services	47	1.664%	Economics	16	0.567%
Public Environmental Occupational Health	46	1.629%	Area Studies	14	0.496%
Multidisciplinary Sciences	43	1.523%	Humanities Multidisciplinary	14	0.496%
Law	37	1.310%			

According to Table 1, it is seen that Education Educational Research (54.96%) is by far the largest category. "Inclusive Education" studies are mostly carried out within the framework of educational research. The Education Special (14.09%) area is a natural extension of inclusive education. This suggests that it is a strong secondary focus. Social Sciences Interdisciplinary (6.02%), on the other hand, reveals that inclusive education is an important field of study not only for educators but also for social scientists.

The integration of people with disabilities into education in the field of rehabilitation (5.84%) has found a significant place in the rehabilitation literature. Environmental Sciences, Environmental Studies, Green Sustainable Science Technology (about 10% in total). It shows that inclusive education has started to be associated with concepts such as sustainable development and environmental justice. 70%+ of the studies are directly focused on education, around 20% are in supporting fields such as psychology, rehabilitation, social sciences and environmental sciences, and around 10% are in indirectly related fields such as health, law, and economics. Although inclusive education was born as a field of educational research, it has become multidisciplinary over time. It covers many different perspectives such as education, health, environment, law, sociology.

Information on the institution publishing the concept of "Inclusive Education" is given in Table 2.

Table 2. Institution Information

Affiliations	Record Count	% of 2.824	Affiliations	Record Count	% of 2.824
University of London	78	2.762%	University of Birmingham	29	1.027%
Queensland University of Technology QUT	71	2.514%	University of Pretoria	29	1.027%
Ministry Of Education Science of Ukraine	66	2.337%	University of Edinburgh	27	0.956%
North West University South Africa	51	1.806%	University of Murcia	27	0.956%
Monash University	48	1.700%	University of Granada	26	0.921%
University of Vienna	47	1.664%	University of Witwatersrand	25	0.885%
University of South Africa	44	1.558%	UCL Institute of Education	24	0.850%
University College London	43	1.523%	University of Cambridge	24	0.850%
University of Jyvaskyla	40	1.416%	University of California System	22	0.779%
University of Sevilla	35	1.239%	Macquarie University	21	0.744%

Affiliations	Record Count	% of 2.824	Affiliations	Record Count	% of 2.824
University of Groningen	34	1.204%	Stellenbosch University	21	0.744%
University of Southampton	34	1.204%			
Griffith University	29	1.027%			
Norwegian University of Science Technology NTNU	29	1.027%			

Looking at Table 2, the University of London is the leader with 78 publications and a rate of 2,762%.

The year-based distribution is shown in Figure 2.
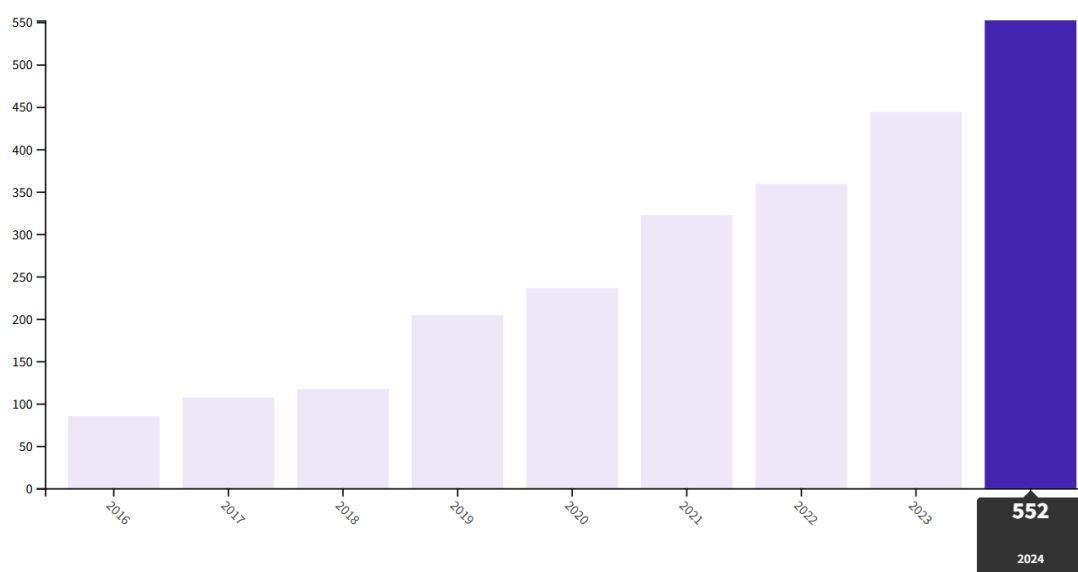
Figure 2. Year-Based Distribution

An examination of Figure 2 shows that the number of publications has increased steadily over the years and reached its highest value in 2024 (1,552 publications). This situation shows that the importance of inclusive education in the academic field is increasing.

Method

In this study, a bibliometric method was used to analyze academic productivity and trends in inclusive education. The data source of the study consisted of the publications obtained as a result of the search made in the Web of Science (WoS) database using the keyword "inclusive education". Within the scope of the screening criteria, only articles published in English and open access were taken into consideration; A total of 2,824 articles were included in the analysis process.

After the data collection process, various bibliometric indicators such as authors, institutions, source journals, keywords and citation structures were examined. Version 1.6.19 of VOSviewer software was used for analysis and visualization of the obtained data. Through VOSviewer, the relationships between conceptual structures, cooperation networks and prominent themes in the literature are presented in the form of visual maps. Thanks to this method, the current state of academic production in the field of inclusive education has been comprehensively evaluated; Trends in the field, cooperation dynamics, research gaps and future fields of study are presented with a holistic perspective.

Finding

**Co-authorship – Authors Analysis**

In the author collaboration analysis, researchers who co-published in the field through VOSviewer were identified. The authors with the highest number of documents and citations are shown in Table 3.

Table 3. Co-authorship – Authors Analysis

N	Author	Documents	Total Link Strenght
1	Schwab, Susanne	36	88
2	Carrington, Suzanne	21	85
3	Sharma, Umesh	17	56
4	Walton, Elizabeth	16	27
5	Morina, Anabel	16	15
6	Graham, Linda J.	14	15
7	Messiou, Kyriaki	12	23
8	Gasteiger- Klicpera, Barbara	11	37
9	Jury, Mickael	11	37
10	Savolainen, Hannu	11	32

Table 3 lists the authors who publish the most and have high collaborative power. It is seen that authors such as Schwab, Suzanne and Carrington, Suzanne stand out with their high number of documents and citations. The "total link strength" value represents the strength of the connections established by the authors with other researchers and reflects the level of interaction within the discipline.

Figure 3 shows a network map of the potential for collaboration.
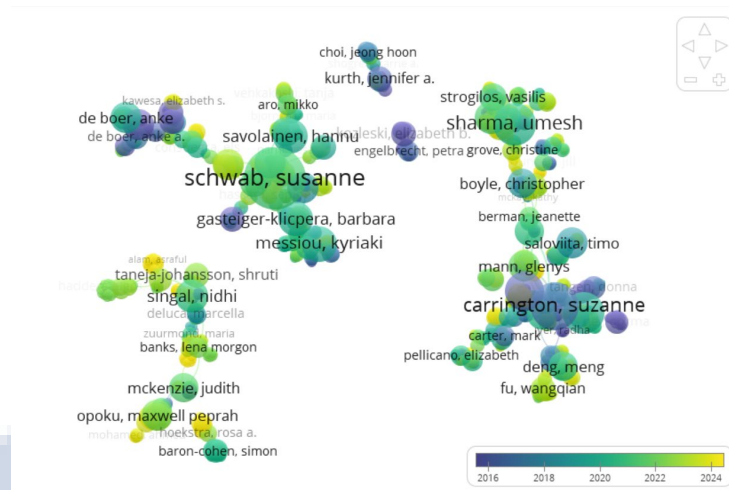
Figure 3. Author Collaboration Network Analysis

As a result of the author collaboration network analysis, prominent authors in the international literature were determined within the framework of the theme of "inclusive education". In the network map in Figure 3, the collaborative structures between the authors and the densities of these relationships are presented. Authors such as Schwab, Suzanne and Carrington, Suzanne appear to be in a central position due to the fact that they have produced and cited a high number of documents. These authors have made significant contributions to the literature with their basic studies in the field. In addition, the different colors on the map show the intensification according to the time intervals. For example, the increasing intensity of publications in the post-2020 period draws attention. This shows that the issue of inclusive education is being handled with increasing interest.

Table 4 shows the 10 most frequently used keywords by the authors, and both the number of occurrences and the total link strength with other keywords are shown.

Table 4. Co occurance-Author Keywords

N	Keyword	Occurences	Total Link Strength
1	inclusive education	1414	3236
2	inclusion	292	807
3	disability	174	586
4	special education	149	403
5	teachers	108	342
6	Higher education	118	311
7	special education needs	124	308
8	education	103	307
9	attitudes	91	290
10	autism	84	236

According to Table 4, the expression "Inclusive education" is far ahead (1414 times) and is in the central position in the literature with a total connection power of 3236. The variant in the form of "inclusion" (292 times) is also noteworthy. This shows that similar concepts are used in different ways. Concepts such as "disability" (174 times), "special education" (149 times) and "Teachers" (108 times) reflect the areas to which inclusive education is directly related. Keywords such as "higher education", "special educational needs", "attitudes", "diversity", "self-efficacy" reveal that this theme is addressed from various angles that deal with both its pedagogical and political dimensions.

This situation reveals that inclusive education is not only structural, but also cognitive and occupational aspects.

Figure 4 shows the result of the keyword co-occurrence analysis.
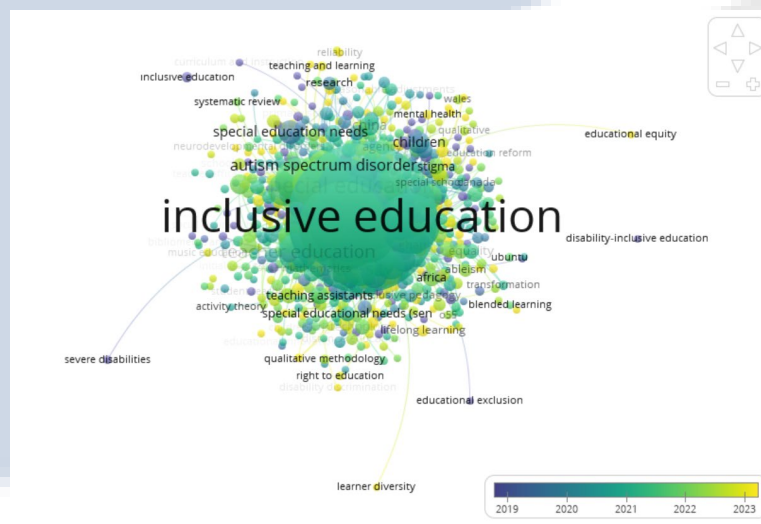
Figure 4. Keyword Co-occurrence Map (Overlay Visualization)

In the context of the Central Concept in the figure, the keyword "Inclusive education" is in the center of the map with the highest connection density and reveals that it is the core concept of the subject. Other keywords clustered around this term show the sub-themes most associated with this field in the literature. According to the Time Based Distribution (Color Scale);

Purple/Blue tones (2019-2020): Earlier works.

Green tones (2021-2022): Medium intensity updating.

Yellow tones (2023+): Shows the most current and new trends.

In this context, the fact that concepts such as "educational equity", "learner diversity", and "blended learning" are close to yellow shows that these issues come to the fore in more recent researches. On the other hand, classical topics such as "special education needs", "disability", "teaching assistants" belong to earlier periods (blue tones).

When we look at the Key Themes and Clusters;

1. **Special education and disability:** "disability", "special education needs", "autism spectrum disorder", "teaching assistants"
2. **Educational equity and participation:** "educational equity", "right to education", "educational exclusion"
3. **Method and application:** "qualitative methodology", "blended learning", "systematic review", "teaching and learning".

In the overlay visualization analysis, it was observed that the term "inclusive education" occupies a central place in the literature and establishes strong relationships with a large number of keywords. The color distribution shows that concepts such as "educational equity", "learner diversity" and "blended learning" have come to the fore, especially in recent years. This situation reveals that inclusive education is not only focused on special education, but is also handled together with the themes of equality and diversity in education.

In Table 5, the authors with the highest number of articles and connection power are shown.

Table 5. Citiations-Total Link Strenght

N	Author	Documents	Total Link Strenght
1	Schwab, Susanne	36	948
2	Carrington, Suzanne	21	236
3	Sharma, Umesh	17	290
4	Walton, Elizabeth	16	188
5	Morina, Anabel	16	69
6	Graham, Linda J.	14	126
7	Messiou, Kyriaki	12	354
8	Savolainen, Hannu	11	684
9	Jury, Mickael	11	257
10	Gasteiger-Klicpera, Barbara	11	191

According to Table 5, Schwab Susanne is the strongest author with 36 documents, 948 total linkages. Carrington, Suzanne have 21 documents, 236 total link powers, and Sharma, Umesh are among the leading authors with 17 documents, 390 total link powers.

Figure 5 shows the temporal dimension of the author collaboration network on "inclusive education".
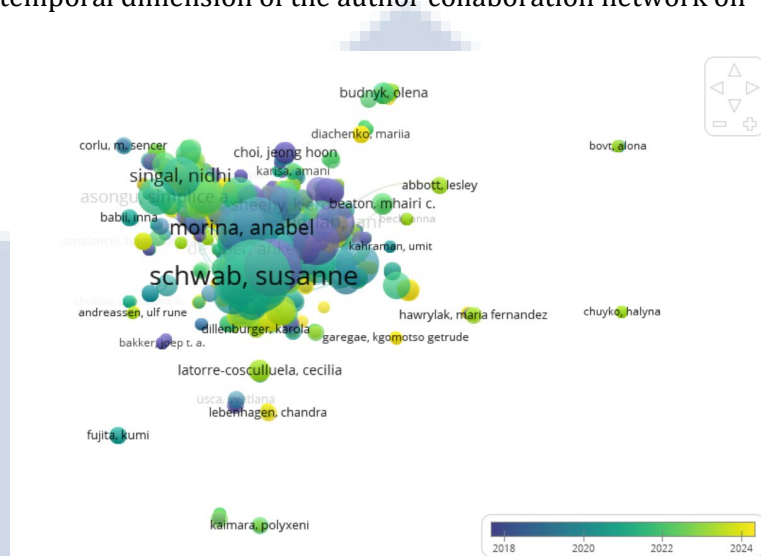
Figure 5. Citiations-Total Link Strenght

According to Figure 5;

1.   Older publications → blue tones,
2.   Yellow tones indicate → more current publications (2022–2024).
3.   Large articles → point to authors with higher connection power.

Highlights:

1.   Schwab, Susanne is very central and still active.
2.   Names like Cod, Anabel, Singal, Nidhi, Sharma, Umesh are also strong knots.
3.   There are small groups at the bottom right and bottom left, → these are less connected clusters (indicating more cooperation among themselves).

Figure 6 shows the relationship status between the documents.

Bibliographic Coupling - Document

The relationship between the documents was established through the sources they refer to in common.
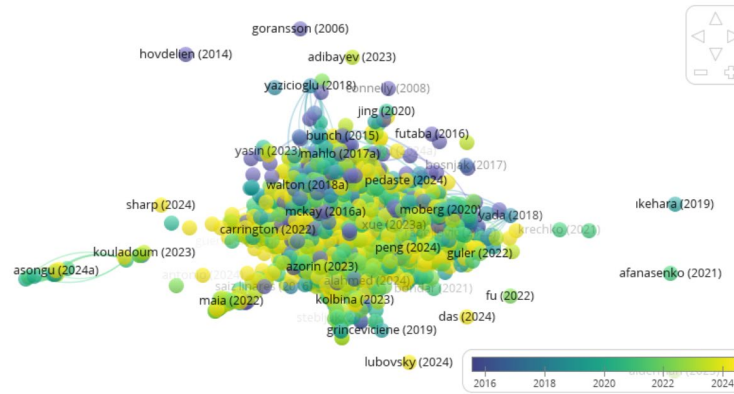
Figure 6. Bibliographic Coupling - Document

If two documents refer to the same sources, there is a connection between them. The colors here are again according to the years of publication (blue old → yellow new). Dots indicate articles, and Dot size indicates the weight (link strength) of that article. It has been observed that a total of 15 Clusters are formed. New articles such as Sharp (2024), Kouladoum (2023-2024) are clustered on the left. The center has influential articles such as Walton (2020), Carrington (2021), Peng (2024).

Table 6. Cluster 1-Cluster 2-Cluster 3-Cluster 4 Number of Documents/ Links

Cluster 1	Cluster 2	Cluster 3	Cluster 4
🔵 Number of documents: Very busy (the most populous group in the center). 🔵 Total connection strength: Highest. 🔵 Featured documents: Walton (2020), Carrington (2021), Mackay (2016) 🔵 Subject orientation: Inclusive education practices and teacher attitudes. 🔵 Year range: 2016–2024 (usually current).	🟢 Number of documents: Medium size. 🟢 Total connection strength: The second strongest group. 🟢 Featured documents: Peng (2024), Das (2022), Futaba (2016) 🟢 Issue orientation: Education policies and inclusive education system reforms. 🟢 Year range: 2016–2024.	🟡 Number of documents: Smaller but active. 🟡 Total connection strength: Medium. 🟡 Featured documents: Sharp (2024), Kouladoum (2023-2024) 🟡 Topic orientation: Inclusive education from a recent social justice and equality perspective. 🟡 Year range: 2023–2024 (very new!).	🟣 Number of documents: Small but special. 🟣 Total connection strength: Low-medium. 🟣 Featured documents: Goransson (2006), Hodkinson (2014) 🟣 Subject orientation: Conceptual frameworks, definition struggles of inclusive education. 🟣 Year range: 2006–2014 (old).

This cluster is very strong in the teacher education dimension of inclusive education.	Systemic and managerial arrangements are mostly discussed.	This group evaluates inclusive education within the framework of equality and right to access.	This cluster provided a theoretical basis.

Table 7 shows Co-citation - Author analysis (i.e. co-citation relationships between authors).

Co Citiations - Author

Table 7. Co citiations- Author

N	Author	Citiations	Total Link Strenght
1	Ainscow, M.	804	12709
2	Sharma, U.	583	11917
3	Avramidis, E.	466	9215
4	Florian, L.	529	9102
5	Unesco	690	8810
6	Forlin, C.	408	8329
7	Slee, R.	385	6537
8	De Boer, A.	306	5671
9	Scwhab, S.	270	5386
10	United Nations	375	4837

As a result of the analysis, where at least 20 citation thresholds were determined, it is seen that the authors named Ainscow, M., Sharma, U., and Avramidis, E. stand out.

Figure 7 shows the cluster network map for the most cited and total number of connections.
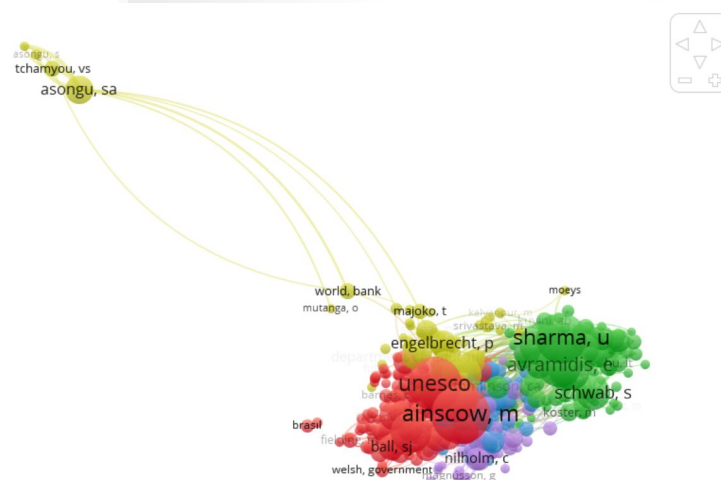
Figure 7. Top Cited - Cluster Network Map of the Total Number of Connections

It is seen that there are 5 different clusters on the network map. Each color represents a different set. There is a large group concentrated in the center (especially red, green, blue clusters), and a small group (yellow) isolated at the top of the map.

Table 8. Top Cited - Cluster Status for the Total Number of Links

(Red Cluster)	(Green Cluster)	(Blue Cluster)	(Purple Cluster)	(Yellow Cluster)
Main actors: Ainscow, M, UNESCO, Engelbrecht, P, Florian, L, Forlin, C.	Main actors: Sharma, U, Avramidis, E, Schwab, S.	Main actors: De Boer, A, Slee, R, Booth, T.	Main actors: Ajzen, I, Bandura, A, Saviolainen, H.	Main actors: Asongu, SA, Tchamyou, VS, World Bank.
• The red and green clusters are very dense and close to each other, which suggests in the literature that these two areas are closely linked. • The yellow cluster remained very isolated.				

Results

This study revealed that academic production in the field of inclusive education is largely carried out by individual efforts, and strong and widespread cooperation networks among authors have not yet been fully formed. Although authors such as Schwab, Suzanne and Carrington, Suzanne have a central position in the field, it has been observed that the overall network structure is dispersed. Keyword co-formation analyses showed that the concept of "inclusive education" occupies a central place in the literature and is intensely related to themes such as disability, special education needs, teacher attitudes and equality in education. Bibliographic matching and citation association analyses show that research on inclusive education is concentrated in different clusters in terms of both theoretical foundations and practical dimensions; teacher education, policy development and social justice perspectives are particularly prominent.

The results of author collaboration and citation analysis show that academic production in the field is largely based on individual studies, and strong and large-scale collaboration networks are limited. This situation reveals the need for more systematic, interdisciplinary and international collaborations in the field of inclusive education.

In line with the findings, it is recommended that future research should examine the inclusiveness dimension of education policies in more depth, increase inclusive practices in teacher education programs, and focus on comparative analyses of inclusive education experiences in different socio-cultural contexts. This approach will contribute to the establishment of inclusive education on a stronger foundation at both theoretical and practical levels.

As a result, the creation of stronger international cooperation networks and a more in-depth discussion of themes such as equality, diversity, and the right to access in the inclusive education literature are considered as an important area of opportunity for future research.

Conflicts of Interest: The authors declare no conflict of interest.

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