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Scholarly Discourse on Equity, Inclusion and Education by Scholars in Indonesia: A Bibliometric and Science Mapping Analysis

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Abstract

Equity, inclusion, and education are remarkable elements encompassed in the United Nations' sustainable development goals (SDGs). As such, there is a growing number of publications on these topics presenting some challenges to envision an overarching understanding of the connections among these subjects. Hence, the purpose of the current study is to explore the body of research that involves equity, inclusion and education that is contributed by Indonesian academia by employing bibliometric and science mapping analysis. The search was conducted on SCOPUS database which resulted in more than 400 documents after applying the pre-defined inclusion and exclusion criteria. Data was analyzed employing various bibliometric analysis indicators such as number of publications, contributing institutions, citation, co-citation and keywords. Microsoft Excel and VOSviewer software were employed for conducting the analysis. The findings revealed that the number of publications and citations on the topics has been quiet fluctuating. Analysis of the intellectual and conceptual structure revealed the trans-disciplinary nature of scholarship on the topic. Based on the findings, the needs for a greater emphasis on research in these areas by Indonesian institutions/researchers are realized. It is also suggested that researchers employ an integrated approach by investigating variables from the policy and practice perspectives as well as at an organizational or systemic level. The findings indicate that education is an integral component of achieving equity and inclusion which should be taken into account while devising relevant policies and executing the same.

Keywords: *bibliometric analysis, equity, inclusive education, Indonesian scholars, science mapping, social inclusion, special education needs*

Introduction and Background Literature

The concept of inclusive education has garnered considerable interest from researchers, educators, and policy makers on a global scale due to its emphasis on providing equal opportunities and support for all learners. The body of scholarly research on inclusive education has experienced significant growth in recent years (see for example, Bjørnerås et al., 2023; Mendoza & Heymann, 2022), mirroring the increasing acknowledgement of its significance in fostering inclusive and equitable educational settings.

The field of inclusive education encompasses a diverse array of themes and subjects. Academic researchers have extensively examined multiple facets of inclusive education, investigating its effects on scholastic performance, socio-emotional growth, teacher training and students with disabilities. Numerous scholarly inquiries have been conducted to examine the efficacy of interventions implemented in inclusive education, describe teacher identity construction in order to becoming more inclusive, explore the influence of teacher attitudes and beliefs, assess the effects of inclusive practices on students' academic achievements, and gather insights from various stakeholders engaged in inclusive education environment (see for example, Ainscow, 2020; Amor et al., 2019; Krischler et al., 2019; Zen et al., 2023).

On a much broader perspective, inclusion is not specific to education. The topic of equity (treating everyone with justice) and social inclusion runs through multiple dimensions of social life. In order to achieve equity and social inclusion, systemic barriers relating to race, gender, socioeconomic position, and other characteristics that may restrict people's opportunities and access to resources must be removed. It entails developing laws and procedures that support universal access to important services like employment, healthcare and education, regardless of a person's background so that everyone in the society enjoys the feeling of belongingness and being taken care of (Marino-Francis & Worrall-Davies, 2010; Stain et al., 2012).

In light of the extensive body of research on equity, inclusion and education, it is imperative to undertake a bibliometric study in order to comprehensively examine and consolidate this corpus of scholarly work. Conducting a bibliometric study is essential for acquiring an overall understanding of the research landscape pertaining to these three topics. Through the examination of publication patterns, citation networks and collaboration trends, a bibliometric analysis has the capacity to discern emerging topics and research deficiencies within the body of research that has been done on equity, inclusion and education. This knowledge has the potential to provide valuable insights for researchers, policy makers and practitioners who are working towards the advancement of equitable and inclusive practices and the effective addressing of the ever-changing needs of diverse learners as well as under-represented groups within a population. It is anticipated that the existing academic discussion regarding these topics within Indonesian academia can provide valuable insights into the trajectory of scientific knowledge within Indonesia, in the ASEAN region, and in the Muslim world at large.

The specific objective of this study is to ascertain the volume of contributions, the key authors, and themes of knowledge on equity, inclusion and education through a bibliometric and science mapping analysis of the academic publications contributed by Indonesian institutions. In order to achieve this objective, we utilized bibliometric analysis, a statistical methodology commonly employed to examine the publication and citation trends of academic articles (Leydesdorff & Rafols, 2009). In addition, we also applied science mapping analysis which enables researchers to effectively identify knowledge domains and their interrelationships, thereby facilitating the detection of research trends, collaborations, and areas of knowledge deficiency (van Eck & Waltman, 2010). By combining these two methodologies, the current study aims to provide a comprehensive understanding of the body of literature on equity, inclusion and education, as well as identify gaps and opportunities for future research efforts.

In line with the objective, the current study is guided by the following research questions:

1. What is the growth trajectory of publications and citations on equity, inclusion and education within Indonesian academia?
2. What are the patterns of collaboration between institutions towards publications on equity, inclusion and education within Indonesian academia?
3. What is the intellectual structure of knowledge base on equity, inclusion and education within Indonesian academia?
4. What is the conceptual structure of the knowledge base on equity, inclusion and education within Indonesian academia?

Method

This paper employed bibliometric and science mapping approaches to examine the publication and citation patterns as well as the intellectual and conceptual relations among published literature on the selected topics. In bibliometric and science mapping, researchers examine the body of knowledge by utilizing graphical representations to show the relationships between different bibliometric indicators within a particular area of study (Small, 1997; van Eck & Waltman, 2014). Of these, bibliometric analysis utilizes indicators such as the number of publications and citations, global contribution, and collaboration between countries and institutions. In this regard, researchers use appropriate software to showcase trends in knowledge production rather than delving deep into the content of these studies. On the other hand, science mapping techniques include analysis such as patterns of citations, co-citation and keywords. In this study we included all studies on the topic contributed by Indonesian scholars that could be found in the SCOPUS database. The SCOPUS database was selected due to its reputation as the biggest curated abstract and citation database of peer-reviewed literature (Kushairi & Ahmi, 2021; Purkayastha et al., 2019).

Searching and Retrieving Data

In September 2023, an advanced search was conducted on SCOPUS database using the search string as follows:

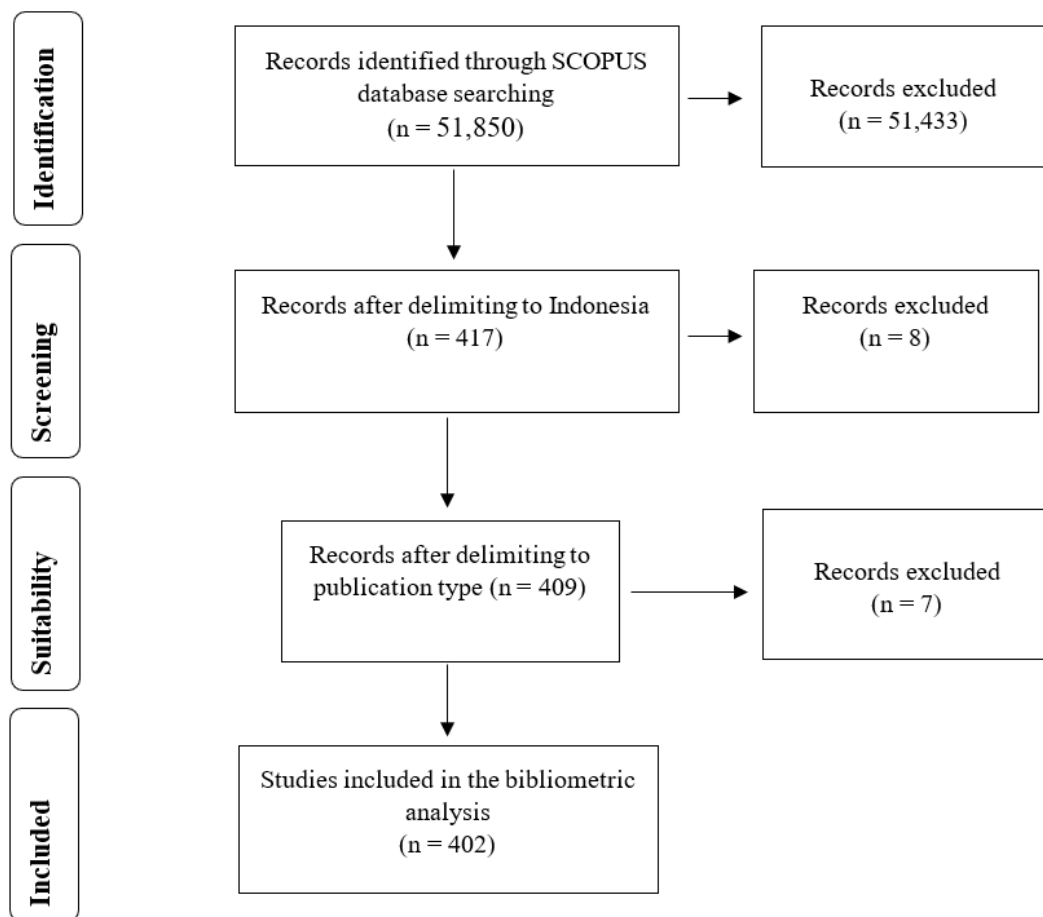
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TITLE-ABS-KEY ( ("inclusive education" OR "special  
education needs" OR "equity and inclusion" OR  
"social inclusion" OR "social justice" OR "equity" OR  
"special needs" ) AND ( "education" OR "teaching" ))
```

The initial search generated approximately 51,850 results which was subsequently confined to those affiliated with Indonesian institutions using the relevant field on the SCOPUS website. This reduced the number of documents to 417. Next, we applied the specific inclusion and exclusion criteria for screening and selecting the data as outlined in Table 1. Accordingly, the results were limited to journal articles and conference papers, book chapters and reviews. Books, notes, editorials, letters, and reports were excluded which subsequently retained 409 publications. Finally, only those published in English were selected from which one article that has an obvious orientation on the health sector was omitted after screening the titles and the abstracts. Subsequently, there were 402 documents left to be carried forward for further analysis as shown in Figure 1, which illustrates how the data screening and selection was carried out.

Table 1. Inclusion and Exclusion Criteria

Criterion	Eligibility	Exclusion
Country/region	Indonesia	Other countries/regions
Literature type	Journal articles, conference papers, book chapters, reviews	Books, notes, editorials, letters, reports
Language	English	Published in the languages other than English

Figure 1. PRISMA Flow Diagram Showing the Process of Identifying and Screening Sources



Data Analysis

In the current study, we employed two primary categories of analysis. The first category of analysis is widely recognized as bibliometric analysis which is conducted utilizing indicators such as the number of publications and citations, and the level of collaboration among diverse entities. The second category of analysis conducted is commonly known as science mapping techniques, encompassing citation, co-citation, and keyword analysis. In this study, VOSviewer software was utilized for science mapping to generate bibliometric networks (van Eck & Waltman, 2010). A bibliometric network typically maps the discipline's scope and structure and identifies important research clusters (Donthu et al., 2021). These bibliometric networks can portray the intensity of the association between elements by means of the proximity of nodes in the network (Fabrikant et al., 2010). Thus, these maps can visualize the themes of knowledge as well as groups of scholarly work that are often cited together depicting a vignette of the corpus of knowledge.

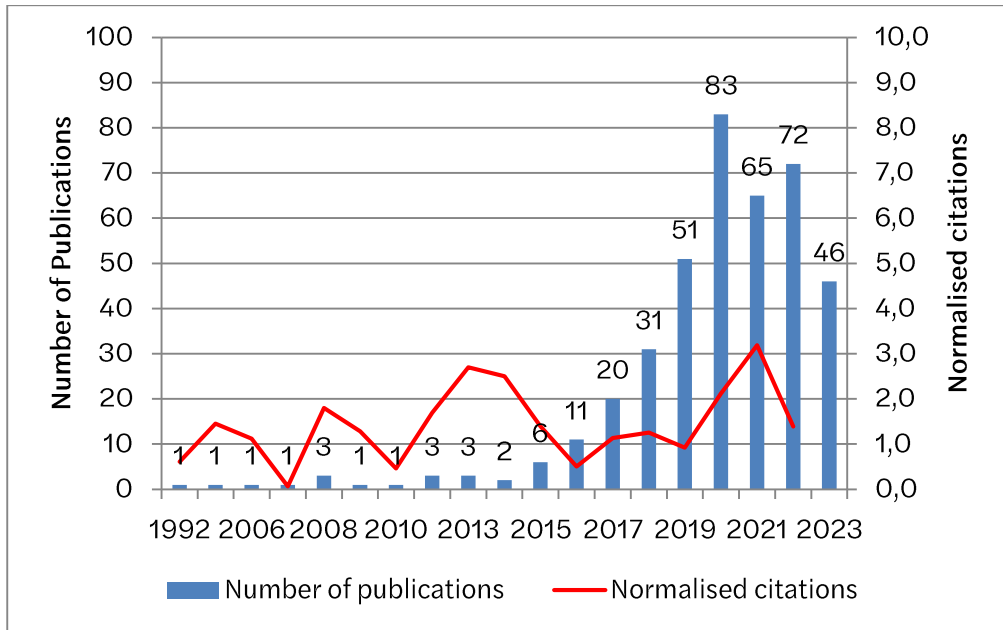
Findings and Discussion

Trends in Publication and Citation

In research question one, we examined the volume of publications and citations on equity, inclusion and education that have affiliations with Indonesian institutions. Figure 2 depicts the results of the analysis carried out for the trend in the volume of publications and citations over time from the year 1992 until September 2023. According to the bar graph in Figure 2, despite the first publication in 1992, there are many years, except 2001, in which no publication was made on the topic until 2006. However, from 2006, there has been at least one publication each year except for the year 2011. It is also evident from the graph that there is a geometric increase in the number of publications from 2015 until 2020, after which some fluctuations are observed. Specific to the Indonesian context, this situation could have been triggered by the directorate general of higher education's circular letter about scientific publication requirements for lecturers and postgraduate students. Nonetheless, the

number of publications in 2021 and 2022 has been less than the peak that was attained in 2020. There is a high probability that this trend may continue in 2023 as the number of publications up until mid-September is still as few as 46. Unlike the striking downward slope in the volume of publications observed in the current study, most of the previous bibliometric studies conducted at global level illustrate an overall geometric growth in the number of publications on a given topic (Hallinger & Kovačević, 2019; Moosa & Shareefa, 2020), calling Indonesian researchers' attention to the topics of equity, inclusion and education.

Moreover, the line graph in Figure 2 shows the pattern of normalized citations over the years from 1992 until 2022, excluding 2023 since normalization is computed for the number of years after publication. As shown in Figure 2, the pattern of normalized citation shows a somewhat recurring cycle of fluctuations, which could inform the inconsistency of interest among researchers on the topics. Further, the normalized citation has been around one citation per paper for the most part, showing an overall trivial upward trend over the two decades since 1992. This is a relative low rate of citation as previous studies reported an average of normalized citations between 3 to 6 (Moosa et al., 2022; Moosa & Shareefa, 2020). One possible reason for such low rates of citations could be the limited number of publications made by Indonesian academics. Further, while it could be argued that citation is low because of the poor quality of journals that hosts these publications, this proposition needs further investigation and verification.

Figure 2. Pattern of Publications and Citations

Patterns of Collaboration Towards Publications on Equity, Inclusion and Education

In research question two, we investigated the patterns and extent of collaboration towards publication on equity, inclusion and education within the corpus of knowledge base contributed by Indonesian intuitions. This investigation was carried out only using institutions as the unit of analysis as the other units such as authors and countries seem to be less meaningful in the present scenario. Accordingly, Figure 3 shows the network of collaboration among institutions that have contributed to the publications in our bibliometric data file.

According to the collaboration network shown in Figure 3, with a collaboration strength of seven, Universitas Negeri Yogyakarta is found to be the greatest collaborator having links with three other institutions, all belonging to Indonesia. The university has produced thirteen publications in collaboration with other institutions within the generated network which is one less than the top contributor, Universitas

Pendidikan Indonesia. Institut Agama Islam Negeri Surakarta is the second largest collaborator in this cluster as well as overall. However, the institute has contributed to only four publications in collaboration with other organizations as shown in Figure 3.

Figure 3. *Collaboration Between Institutions Towards Publications on Equity, Inclusion and Education*



Notes: The number of documents by an institution was set to two. The size of the nodes represents the strength of collaboration. <https://tinyurl.com/24m492d4>

Based on the strength of collaboration, the red cluster is quite significant whereby each of the members in this cluster had a collaboration strength of six. However, each of these institutions contributed to only two publications in collaboration with others in the network. It is also observed that the collaboration represented in this

cluster has essentially occurred within the same institute that has branches in various countries. On the other hand, there are a few other clusters that are shown to be less significant in terms of the strength of collaboration. However, some of the institutions in these clusters have contributed to more collaborative publications than those who have demonstrated a relatively high level of collaboration. This is because some of the collaborating institutions are not displayed in Figure 3 as they did not meet the minimum criteria of two publications that was set during the analysis. For example, the State University of Surabaya which has a collaboration strength of just two, has contributed to seven collaborative publications which is much more than the number of publications produced by each institution in the red cluster.

Previous bibliometric studies suggest a positive association between collaboration and publications (see for example, Bozkurt et al., 2021; Iqbal et al., 2019). However, the findings of this study provide no support for this proposition. Nevertheless, it is important to keep in mind that the results presented in Figure 3 do not demonstrate collaborations that could possibly exist among institutions that have contributed to less than two publications. To elaborate on the case of State University of Surabaya which has a collaboration strength of just two (according to Figure 3), when the parameter was set to a minimum of one publication per institution (instead two that was engaged in the analysis that is presented), the strength of collaboration was increased to seven. Hence, despite our findings which are limited by the parameters we had to engage, we do not refute the proposition that more collaboration could, in general, result in more publications.

The Intellectual Structure of Knowledge Base on Equity, Inclusion and Education

To answer research question three, we explored the intellectual structure of the knowledge base on equity, inclusion and education, using both citation and co-citation analysis. While citation analysis was based on the citation of actual documents in our bibliometric data file, co-citation was based on those documents that have been cited by the

documents in our data file. In other words, co-citation, which is a measurement of two publications cited by a third publication (Small, 1973; Zupic & Čater, 2015), was based on the citation of items in the reference list of the documents in the bibliometric data file.

Citation Analysis

In conducting the citation analysis, we computed the average number of citations of a document per number of years after publication (CPY), and then rank-ordered these to identify the top-ten cited publications. This allows us to find out the most influential intellectual thoughts within the 402 documents that we analyzed. Table 2 shows the results of the citation analysis that was conducted as above.

According to the results in Table 2, the most cited paper (based on CPY) that has addressed the three terms of equity, inclusion and education is oriented towards ensuring human health especially with respect to infant mortality. Subsequently, the second and the third most cited papers are both related to education, the first of which investigates the impact of online learning during COVID-19. The next two ranks include studies on participation in primary economic activities such as farming, and explorations on the basis of religious perspectives. Many of the rest of the publications are on education while a few are on health and gender.

Tabel 2. *The Top-ten Cited Documents on Equity, Inclusion and Education*

Rank Order	Title	Journal	Year	Citations	CPY
1	Global, regional, and national progress towards Sustainable Development Goal 3.2 for neonatal and child health: all-cause and cause-specific mortality findings from the Global Burden of Disease Study 2019	The Lancet	2021	172	86

2	Impact of the COVID-19 pandemic on online home learning: An explorative study of primary schools in Indonesia	International Journal of Advanced Science and Technology	2020	132	44
3	The Satisfaction of the Special Need' Students with E-Learning Experience During COVID-19 Pandemic: A Case of Educational Institutions in Indonesia	Contemporary Educational Technology	2022	16	16
4	Women's well-being and household benefits from seaweed farming in Indonesia	Aquaculture	2021	29	15
5	Heterogeneous impacts of community forestry on forest conservation and poverty alleviation: Evidence from Indonesia	People and Nature	2019	55	14
5	Religion and Measles Vaccination in Indonesia, 1991–2017	American Journal of Preventive Medicine	2021	27	14
6	Mapping disparities in education across low- and middle-income countries	Nature	2020	39	13
7	Understanding COVID-19 particle contagion through aerosol droplets for students with special needs	Journal of Engineering Science and Technology	2020	34	11
7	Teaching high school students with/without special needs and their misconception on corrosion	Journal of Engineering Science and Technology	2022	11	11

7	School location analysis by integrating the accessibility, natural and biological hazards to support equal access to education	ISPRS International Journal of Geo-Information	2022	11	11
8	Teaching the corrosion of iron particles in saline water to students with special needs	Journal of Engineering Science and Technology	2021	20	10
8	Teaching “nanotechnology” for elementary students with deaf and hard of hearing	Journal of Engineering Science and Technology	2018	49	10
9	Adsorption of dye on carbon microparticles: Physicochemical properties during adsorption, adsorption isotherm and education for students with special needs.	Sains Malaysiana	2020	28	9
9	Using blended learning approach (BLA) in inclusive education course: A study investigating teacher students' perception	International Journal of Emerging Technologies in Learning	2020	28	9
9	Analysis of curriculum for science education for students with special needs in vocational high schools	Journal of Technical Education and Training	2021	18	9
9	Teaching on the concept of energy to students with hearing impairment: Changes of electrical energy to light and heat	Journal of Engineering Science and Technology	2021	17	9

10	The importance of teaching viscosity using experimental demonstration from daily products on learning process especially for students with special needs	Journal of Engineering Science and Technology	2020	25	8
10	Trends and inequities in use of maternal health care services in Indonesia, 1986–2012	International Journal of Women's Health	2018	41	8
10	Women's participation in forest management: A cross-country analysis	Global Environmental Change	2013	77	8
10	Can a National Health Insurance Policy Increase Equity in the Utilization of Skilled Birth Attendants in Indonesia? A Secondary Analysis of the 2012 to 2016 National Socio-Economic Survey of Indonesia	Asia-Pacific Journal of Public Health	2020	23	8

An examination of the highly cited papers in our database reveals that Indonesian academia seems to be interested in investigating equity, inclusion and education from multiple perspectives including health (Nababan et al., 2017), special needs (Maryanti, Hufad, et al., 2021), economy (Coleman & Mwangi, 2013), religion (Harapan et al., 2021), and gender (Larson et al., 2021). It is interesting that, on top of the multidisciplinary nature of the concepts, all these investigations have, to some extent, incorporated the concept of education emphasizing the role that education could play in addressing issues related to equity and inclusion regardless of the context in which they exist. Hence, based on the citation analysis, Indonesian academia portrays that scholarship on equity, inclusion and education is multidisciplinary as well as interdisciplinary in nature.

In addition to the above, we also looked at the source titles to find out in which journals these publications have appeared. There are at least two points to be noted. First, some of the journals in the list are no longer SCOPUS-indexed as these have now been discontinued from the SCOPUS list. For instance, the *International Journal of Advanced Science and Technology* has been discontinued in SCOPUS since 2020. Second, some of the journals such as the *Journal of Engineering Science and Technology* are open access where it might be easier to get published. While publishing in fee-paying open access journals may not necessarily be wrong, researchers are discouraged from blindly publishing in any journal just because those are SCOPUS-indexed. There is a need to consider the publication pattern and scope of the target journals.

Co-citation Analysis

The second technique we engaged in analyzing the intellectual structure of the knowledge base is co-citation. In performing co-citation, the analysis was based on the cited references (documents) as opposed to sources (journals) or authors. Figure 4 depicts the co-citation network generated, which shows six distinct schools of thought evident in the development of scholarship on the topic of equity, inclusion and education contributed by Indonesian academia.

The most significant among the six clusters is the one shown in red. The dominant intellectual focus evident in this cluster is teaching students with special (education) needs. For instance, the two most highly co-cited documents in this cluster are on mathematics education (Maryanti, 2021) and science education (Maryanti, Nandiyanto, et al., 2021) for students with special needs. Moreover, four of the second most highly co-cited documents conducted investigations on science education for special needs (Maryanti et al., 2020; Maryanti, Hufad, et al., 2021) and specifically on students with hearing impairment (Rusyani et al., 2021; Susetyo et al., 2021).

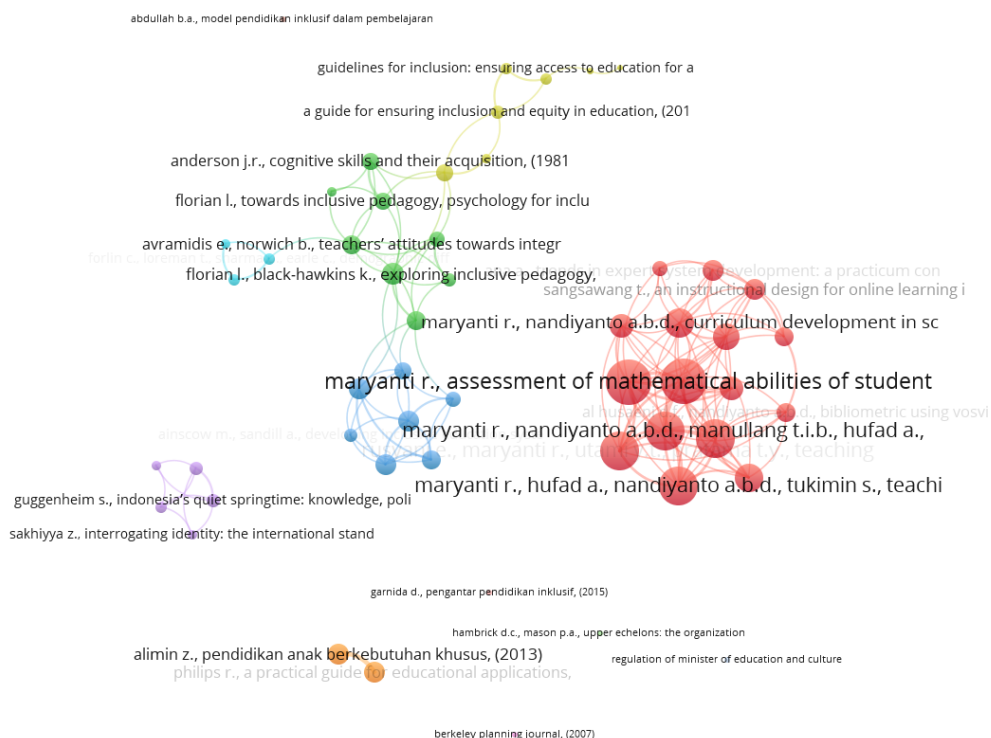
The second most significant cluster which is shown in green is dominated by the intellectual debate on inclusion and the pedagogical aspects associated with inclusive education. For instance, the most highly

co-cited document in this cluster explored the concept of inclusive pedagogy (Florian & Black-Hawkins, 2011), while two of the second most highly co-cited documents dealt with teachers' attitudes (Avramidis & Norwich, 2002) and what works (Mitchell & Sutherland, 2020) in executing inclusion in teaching/education.

The leading school of thought in the third most significant cluster shown in blue is issues related to inclusive education at the administrative and system level. For example, the most highly co-cited articles in this cluster compared student and administrator perception regarding problems faced by students in adjusting to new learning environments (Galloway & Jenkins, 2005), organizing inclusive schools (Kinsella, 2020), and teachers' perceptions about inclusive education (Zelina, 2020).

With respect to the remaining three clusters, (i) the cluster in olive green represents scholarly thoughts on implementation of inclusive education (Efendi, 2018; UNESCO, 2005; 2017); (ii) the cluster in purple embodies scholastic views on education policy, reform, and provision of education (Dewantara, 1967; Guggenheim, 2012); and (iii) the cluster in light blue symbolizes international perspectives of various teacher-related factors associated with inclusive education (Forlin et al., 2007; 2009).

Figure 4. Co-citation Network of Cited References Associated with Publications on Equity, Inclusion and Education



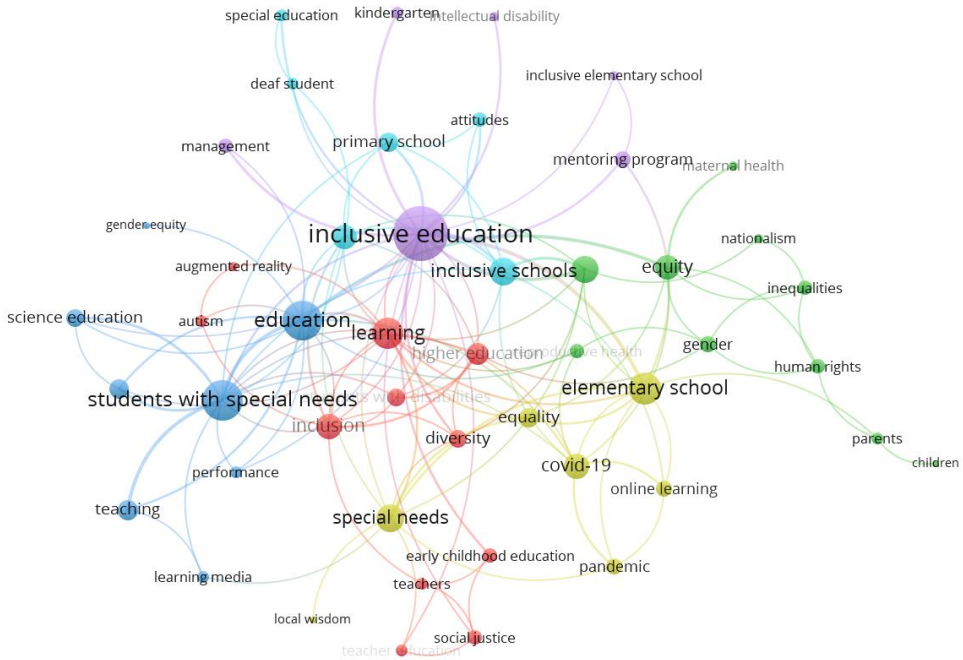
Notes: The number of citations of a cited reference was set to three. The size of nodes represents the magnitude of co-citation. <https://tinyurl.com/26ts7sea>

The Conceptual Structure of the Knowledge Base on Equity, Inclusion and Education

Research question four was targeted to seek themes of concepts that are embedded in the publication on equity, inclusion and education that have been contributed by Indonesian academic institutions. This was done by analyzing the keywords that are associated with the publications in our bibliometric data file. When doing the analysis, certain keywords that were obviously irrelevant to the topic were omitted from the analysis to make the results more conceptually sensible. Furthermore, a thesaurus file was used to merge the same keywords with different formations into

one. Subsequently, Figure 5 shows the visualization network that was generated for the keywords.

Figure 5. Co-occurrence Network of Keywords



Notes: The minimum number of occurrences of a keyword was set to three. The minimum number of words in a cluster was set to five. The size of nodes represents the strength of association of a keyword with other keywords. <https://tinyurl.com/2chqoly>

As depicted by color variations in Figure 5, the conceptual structure of knowledge on equity, inclusion and education is mapped onto six distinct clusters or themes. For brevity, only the first four clusters are discussed here in order of their sizes, starting with the largest. In this regard, the most significant keywords in cluster 1 are learning (link strength = 17), inclusion (12), higher education (9), diversity (6), and students with disabilities (6). Subsequently this cluster is named “learning for students from diverse backgrounds”. Although “learning” is the most repetitive keyword in this cluster, it has more connection to

keywords in other clusters indicating the diversity of concepts with which “learning” is associated. For instance, it is related to learning of students with some kind of disability or special needs such as attention deficit disorder (Agustini et al., 2020), learning for disabled students (Widyawan et al., 2020), and hybrid learning for students with learning disabilities (Rachmawati et al., 2022).

The most significant keywords in cluster 2 are children with special needs (link strength = 13), equity (11), gender (5), human rights, (4), inequalities (4), and reproductive health (4). Similar to the previous cluster, the most significant keyword in this cluster, which is children with special needs, has connection with keywords from a number of other clusters, the most prominent among these being inclusive education and learning. However, the central focus of this cluster seems to be on issues around gender equity, human rights and maternal health. Accordingly, this cluster is named “equity and equality in society”. For instance, researchers investigated perspectives in gender equity (Mustofa et al., 2021), gender disparity in educational performance (Aditomo, 2020), human rights (Mbabazi et al., 2021), and inequality in the use of maternal health services (Nababan et al., 2017). Moreover, equity with respect to various other aspects such as digital media (Mauna, 2020) and provision of public services (Riani & Haryadi, 2019) are also investigated in this cluster.

The most significant keywords in cluster 3 are students with special needs (link strength = 28), education (26), teaching (8), vocational high school (7), and science education (6). Despite having some links to keywords from other clusters, the top significant keyword in this cluster is found to be quite confined to teaching and learning in inclusive education, hence, it is named “teaching and learning in inclusive settings”. In this regard, scholars have delved into such topics as listening to student voices in inclusive education (Andriana & Evans, 2020), challenges to teachers in implementing inclusive education (Lintangsari & Emaliana, 2020), and exploring teachers’ inclusive education strategies (Kurniawati, 2021). Further, as indicative of the keywords, these topics have been studied in various contexts such as higher

education (Sunardi et al., 2020), vocational education (Nurhaeni & Kurniawan, 2018), and science education (Suprihatiningrum, 2021).

The most significant keywords in cluster 4 are elementary school (link strength = 18), special needs (14) and COVID-19 (12). With a contextual emphasis on the elementary level of education, the overall focus of scholarship in this theme seems to be concentrated on online learning, especially during the pandemic. As such, this cluster is named “online learning/learning during emergencies”. On this line of research, studies have been conducted on teaching specific concepts to special needs students at the primary level (Nandiyanto et al., 2018), teacher readiness for inclusion (Rasmitadila & Tambunan, 2018), and the impact of online learning during the pandemic (Putri et al., 2020).

Conclusions and Implications

The present study found that publications that are affiliated to Indonesian institutions on the topic of equity, inclusion and education are on the decline. Furthermore, the results also revealed that the average citation of these publications is low and fluctuating. With respect to collaboration, it was found to be less and within a relatively small circle in most cases. Moreover, the findings of the intellectual structure revealed the existence of distinct schools of intellectual thought while on the conceptual ground, connection of concepts revealed an interdisciplinary nature of investigation exists in the current corpus of knowledge. Based on these conclusions, we discuss several implications to research, policy and practice.

First, the findings of the current study showcased the need for more research contributions from Indonesian academia on topics connecting equity, inclusion and education. These three concepts are key elements of the sustainable development goals of the United Nations representing a niche in global publications requiring contribution from scholars. Unfortunately, our study presented lack of evidence for sustained contribution to scholarship on the topic from Indonesian academia. Hence, it is urged that researchers in Indonesia exert a greater effort in increasing their contribution to research on equity, inclusion and

education. Previous studies reported that favorable policies on scientific publications increased knowledge production (see Sumintono et al., 2023) which indicates that supportive policies can effectively counteract the current lack of scholarly input on the topic. At the same time, precautions must be taken in case such a change might also be associated with some concerns such as publishing in not-so-relevant and less authentic sources (Marina & Sterligov, 2021; Macháček & Srholec, 2021).

Second, the network of institutional collaboration shows evidence of weak (in strength) as well as smaller (in number) collaborative efforts in publications. As such, there is a need to increase collaboration among authors as well as research institutions within and outside Indonesia. In this regard, institutional policies that encourage collaboration with other institutions, preferably outside the parent institution, may be devised (Moosa et al., 2022).

Third, analysis of the intellectual structure of the knowledge base reveals that equity, inclusion and education fall into distinct schools of thought. The co-citation analysis may help in drawing literature that connects the various schools of thought when trying to come up with a comprehensive and integrated approach to research as well as policy formulation. For instance, the knowledge generated by scholars investigating educational success for students with special education needs (Maryanti, 2021; Susetyo et al., 2021) could be integrated with that which is presented by scholars investigating inclusive practices in education (Mitchell & Sutherland, 2020), and also with those scholars talking about administration of inclusive education at the organizational level (Kinsella, 2020).

Fourth, the keyword analysis clearly demonstrated the conceptual diversity and cross-disciplinary nature of scholarship connecting equity, inclusion and education supporting the findings from the co-citation analysis. The significance of inclusive education is beyond and above all these linkages as it is the concept that has been investigated the most in relation to concepts from all other thematic clusters in the keyword analysis. In spite of this, the keywords were mapped onto several themes.

These include “learning for students from diverse backgrounds” (Widyawan et al., 2020) “equity and equality in society” (Aditomo, 2020), “teaching and learning in inclusive settings” (Andriana & Evans, 2020), and “online learning/learning during emergencies” (Putri et al., 2020). Hence, these could be potential areas for investigation in the future in order to broaden our understanding of these interconnecting topics.

Fifth, the keyword analysis also revealed that research on equity, inclusion and education is investigated in multidisciplinary as well as interdisciplinary contexts. However, consolidation of connection among these concepts is observed less. Hence, future research may emphasize transdisciplinary approaches that involve variables from equity, inclusion, education, health, economy and so forth, so that the interplay among such variables in attaining equity and inclusion could be better understood.

Limitations

Our findings are hindered by some limitations arising fundamentally from the very nature of the analytical approach that was engaged. One such limitation is that the themes of knowledge that were revealed from the analysis lack in-depth understanding of what is entailed within them. On the same note, there is a lack of a conceptual explanation of equity and inclusion and the issues that revolve around these concepts. Since it is out of the scope of a bibliometric and science mapping research to dive deep into the content of publications, the themes are generated based on the keywords only. Subsequently, the names of the clusters are given based on the researchers’ comprehension of the keywords in a given cluster.

A second limitation is that we relied on data obtained from a single source, SCOPUS. Although SCOPUS is acknowledged to be among the most reputed databases from which bibliometric data can be retrieved, it could still have missed a number of publications on the topic of interest. A study that involves multiple databases such as WOS, PubMed and Dimensions could result in slightly different findings. Moreover, as this

kind of bibliometric analysis does not involve scholarly knowledge from books and that which is instilled in a number of grey literatures, the significance of certain concepts might be somewhat different if these sources are considered.

A third limitation is that our findings are limited to scholarly work contributed by Indonesian institutions. While it was a deliberate decision to limit the scope of publications to the said context, there is a need to extend this investigation to a regional and, perhaps, to a global level. This would facilitate comparison of scholarly knowledge production in the local context with that of the regional and global context.

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