Bibliometric Analysis of Research on Multicultural Education in Google Scholar Database (2018-2022)

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Abstract

The implementation of good multicultural education in schools will be able to have a positive influence on fostering multicultural traits in students. With the development of science and technology, there will be more and more challenges in research on multicultural education, but it is not yet known whether research on multicultural education is still in demand in educational research. This study utilized the VOSViewer software to conduct a bibliometric analysis of articles available in the open-source Google Scholar database for a 5-year period (2012-2021). The research methodology involved using bibliometric analysis with VOSViewer mapping on the Google Scholar database. From the search results with the keyword multicultural education, it was found that there were 617 relevant articles published in the last 5 years. It can be concluded that from the results of the mapping it appears that the field of multicultural education is still open to carrying out newer research linked to other terms so that newer and up-to-date research can be carried out. The implementation of research with the theme of Multicultural Education is still very broad and can be carried out by connecting it to various new terms such as 21st learning skills, social conflict, conflict-based management, diversity and global education, and other terms.

Keywords: google scholar; multicultural education; VOSViewer

1. Introduction

Multicultural education be situated an idea, an educational reorganization program, and a procedure whose main area is to transformation the construction of educational institutes so that boys and girls, children with different needs, and students who belong to diverse cultural, ethnic, and cultural clusters will have equal chances to realize educationally in school Banks in (Sleeter, 2018). Effective strategies to reduce intolerance in the syllabus and schools must be wide-ranging in choice and attention on all characteristics of the school atmosphere, together with the concealed program, institutional rules, school rules, counseling programs, valuation and challenging procedures, formalization of courses of education, teaching approaches and materials, and the defiance and prospects of the school operate.

The problem behind this research is that it is not yet known how the development of research on multicultural education in the last 5 years (2018-2022). With the development of science and technology, there will be more challenges in research on multicultural education, but it is not yet known whether research on multicultural education is still in demand in educational research.The development of multicultural education is an effort to provide equal opportunities to all students without distinguishing various differences such as religion, ethnicity, culture, ethnicity, and various other diversities(Rosyada, 2014). Multicultural education provides equal rights and respect for the diversity that exists in society without discriminating against minorities. This is expected to strengthen unity and integrity. Schools must be able to design and prepare a curriculum that is implemented in the learning process and evaluation that accommodates the diversity that exists in schools. With the implementation of good multicultural education in schools, it will be able to have a positive influence on fostering multicultural traits in students.

One method that can be used to regulate the development of research on multicultural education is bibliometric analysis. Bibliometric analysis is a quantitative method that can be used to regulate the development of research on multicultural education. This method involves analyzing the content and citations of published articles in journals and other written works to identify trends and patterns in research related to a specific topic or area of study (Marín-Marín et al., 2021). Bibliometric analysis can help researchers to identify the most influential and frequently cited articles in the field of multicultural education, as well as the key authors and institutions that have contributed to the research. This information can be used to guide future research efforts and to identify gaps in the existing literature that need to be addressed. In addition, bibliometric analysis can be used to track the growth and development of research in multicultural education over time, and to assess the impact of different research initiatives and interventions. This information can be valuable in guiding policy decisions and funding priorities related to multicultural education.Overall, bibliometric analysis is a powerful tool that can be used to support the development of research in multicultural education by providing valuable insights into the content, impact, and trends in the existing literature.

There are several studies on bibliometric analysis in the field of education, including inclusive education (Hernández-Torrano et al., 2022), scientific output in social science(Pham-Duc et al., 2022), mechanical engineering(Al Husaeni & Nandiyanto, 2022), E-Learning (Djeki et al., 2022), Education on Covid-19 Pandemic(Boonroungrut et al., 2022), Science Education(Effendi et al., 2021), STEM (Marín-Marín et al., 2021), Educational Technology (Chen et al., 2020), Artificial Intelligence in Education (Yu, 2020). However, bibliometric analysis research to regulate the development of research on "Multicultural Education" has not been supported out explicitly. This

research was conducted to conduct a bibliometric analysis of articles on the Google Scholar database for 5 years (2018-2022) using the VOSViewer application. The resolution of this research is to deportment a bibliometric analysis of research articles from the google scholar database. This research was conducted in the expectation that it can be a reference for researchers in conducting and determining research themes, especially related to the field of "Multicultural Education".

2. Literature Review

Multicultural education is an educational philosophy that emphasizes the importance of recognizing and valuing diversity in the classroom. It involves incorporating cultural content and perspectives into the curriculum to promote understanding and respect for different cultures and perspectives. This approach aims to make inclusive education atmospheres that celebrate diversity and boost critical thinking and social justice. The goal of multicultural education is to prepare students to navigate effectively in a diverse society, and to actively contribute to creating a more equitable and just world (Abacioglu et al., 2020).

Multicultural education and training are approaches to learning and skill development that focus on recognizing and valuing diversity in a given context. They aim to promote understanding, respect, and appreciation for different cultures and perspectives, while also helping individuals develop the skills needed to navigate a diverse environment effectively. Intercultural awareness is a key measurement of cultural skill, which involves possessing the necessary specialized skills, emotional dispositions, and behavior characteristics needed to work effectively with varied populations. This means being able to communicate effectively with individuals from different cultures, understanding and respecting cultural differences, and being able to adapt one's behavior to the needs of the people they are serving. Through multicultural education and training, individuals can learn about different cultures and develop the necessary skills to interact effectively with people from diverse backgrounds. This can be particularly important for professionals who work in fields such as healthcare, teaching, and social services, where they may encounter individuals from a diversity of principles and upbringings. By developing intercultural awareness and cultural competence, practitioners can provide better, more effective care to their clients or patients, and help create more inclusive and equitable communities(Cherng & Davis, 2017; Sleeter, 2018).

Bibliometric analysis is a quantitative research technique used toward study the production, dissemination, and impact of scholarly publications. It involves analyzing various aspects of bibliographic data, such as publication output, citation patterns, and authorship networks, to identify trends and patterns in scholarly communication. Bibliometric analysis can be used to evaluate the productivity and impact of individual researchers, institutions, and research fields. For example, citation analysis can be used to determine the influence of a particular paper or author in a given field. Similarly, co-authorship investigation can be used to find collaborative networks within a research area and to understand the social dynamics of scientific collaboration. Bibliometric analysis can also be used to detect emerging research areas, monitor research trends over time, and track the diffusion of knowledge across different disciplines and regions. It is increasingly used in research evaluation and to inform research policy decisions. The data for bibliometric analysis is often obtained from academic databases such as Web of Science, Scopus, or Google Scholar. Bibliometric analysis is a powerful tool for understanding the structure and dynamics of scholarly communication and can provide valuable insights into the research process and its impact on society (Mustapha et al., 2021)(Shidiq et al., 2021)(Marín-Marín et al., 2021).

3. Research Methodology

The research method used in this paper is bibliometric analysis. This approach was chosen because it is able to precisely measure and examine publications in the database beneath study. Research using bibliometric analysis makes it probable to exploration, record, examine, and view publication papers related to the specified theme (Carmona-Serrano et al., 2020; Marín-Marín et al., 2021). The database chosen is google scholar as one of the indexing that can be opened without difficulty. The use of diagnostic tools providing by google scholar stayed sufficient to obtain furthermost of the outcomes required in this study. The available tools are used for a more detailed explanation of publication dynamics, such as identifying publication characteristics in the background of disciplines, the most leading journal bases, and the furthermost useful authors (Slavinski et al., 2020).

Obtaining research data is assisted by the use of Harzing's Publish or Perish application which functions to conduct a literature review according to the chosen theme, namely "Multicultural Education". The stages in this study are as follows: 1) Collecting publication data using Harzing's Publish or Perish application on the google scholar database. 2) bibliometric data of articles obtained is processed using the Microsoft Excel application. 3) Perform computational mapping using the VOSViewer application.4) Analyze the results of computational mapping.

Article data collection using Harzing's Publish Or Perish application on the Scopus database using the keyword "Multicultural Education" Data collection was carried out in December 2022 where the publication range was determined for 10 years from 2012 to 2021. The article data obtained and according to the analysis, criteria are exported in two clear files with the format (*csv) and (*.ris). Files with format (*csv) are processed with the Microsoft Excel application and files with format (*.ris) are processed with VOSViewer. The VOSviewer application is used to envision and appraise tendencies using bibliometric maps.

The VOSviewer application is able to visualize bibliometric maps in 3 forms, specifically network visualization, density visualization, and overlay visualization based on the network (co-citation) among current matters. When creating a bibliometric map, the frequency of keywords was customary to be found at least 3 times. Therefore, 346 items of irrelevant keywords were removed.

4. Results

4.1 Publication Data Search Results

By using Harzing's Publish or Perish application to extract information on Multicultural Education from the Google Scholar database, 617 articles were identified that met the research criteria. The metadata retrieved for these articles includes author names, article titles, publication year, journal names, publishers, number of citations, DOIs, and related URLs. Table 1 presents a selection of these published data that were utilized in the VOSviewer analysis. The data set for analysis was limited to the 15 highest cited articles over the last five years.

In this study, the articles analyzed had a total citation count of 13,681, with an average of 22.07 citations per article and an average of 12.06 citations per year. The annual citation count per article was found to be 3765.35.

Table 1. Publication Data on Multicultural Education

No.	Authors	Title	Year	Cites	Reference
1	CA Warren	Empathy, teacher dispositions, and preparation for culturally responsive pedagogy	2018	380	(Warren, 2018)
2	M Churiyah, S Sholikhan, F Filianti...	Indonesia education readiness conducting distance learning in Covid-19 pandemic situation	2020	338	(Churiyah et al., 2020)
3	A Maseleno, M Huda, KA Jasmi, B Basiron...	Hau-Kashyap approach for student's level of expertise	2019	301	(Maseleno et al., 2019)
4	RM Cutri, J Mena, EF Whiting	Faculty readiness for online crisis teaching: transitioning to online teaching during the COVID-19 pandemic	2020	285	(Cutri et al., 2020)
5	A Alam, A Mohanty, S Alam	Anthropology of Education: Discourses and Dilemmas in Analysis of Educational Patterns and Cultural Configurations towards Pursuit of Quality Education	2020	230	(Budiharso et al., 2020)
6	AJ Samuels	Exploring Culturally Responsive Pedagogy: Teachers' Perspectives on Fostering Equitable and Inclusive Classrooms.	2018	159	(Samuels, 2018)
7	CE Sleeter	Multicultural education past, present, and future: Struggles for dialog and power-sharing	2018	147	(Sleeter, 2018)
8	R Kohli	Lessons for teacher education: The role of critical professional development in teacher of color retention	2019	131	(Kohli, 2018)
9	CD Chan, DN Cor, MP Band	Privilege and oppression in counselor education: An intersectionality framework	2018	129	(Chan et al., 2018)
10	HYS Cherng, LA Davis	Multicultural matters: An investigation of key assumptions of multicultural education reform in teacher education	2019	127	(Cherng & Davis, 2017)
11	SV Bennett, AMA Gunn, G Gayle-Evans...	Culturally responsive literacy practices in an early childhood community	2018	102	(Bennett et al., 2018)
12	AA Singh, B Appling, H Trepal	Using the multicultural and social justice counseling competencies to decolonize counseling practice: The important roles of theory, power, and action	2020	98	(Singh et al., 2020)
13	CS Abacioglu, M Volman...	Teachers' multicultural attitudes and perspective taking abilities as factors in culturally responsive teaching	2020	95	(Abacioglu et al., 2020)
14	T Gutentag, G Horenczyk...	Teachers' approaches toward cultural diversity predict diversity-related burnout and self-efficacy	2018	90	(Gutentag et al., 2017)
15	FM Mensah	Finding voice and passion: Critical race theory methodology in science teacher education	2019	89	(Mensah, 2019)

Table 1 shows the 15 articles with the most citations that discuss multicultural education in the Google Scholar database. From the table, it can be observed that the article (Warren, 2018) has the highest number of citations, with 380 citations from 2018 to 2022. The data in the table also shows that there are still many authors who cite research articles on multicultural education, which indicates that this topic is still relevant and important in the current educational context. Therefore, continued research on multicultural education is essential to develop a better understanding and practice in achieving the goal of inclusive and sustainable education.

4.2 The Development of Research in the Field of Multicultural Education

The development of research in the field of multicultural education is shown in table 2. There are 617 articles published in journals in the google scholar database from various parts of the world in the 5-year span between 2018-2022. There are 37 articles from Indonesia that discuss Multicultural Education. The second rank with the highest number of citations also came from Indonesia written by (Churiyah et al., 2020) with 338 citations. In 2018 there were 191 publications related to the theme of multicultural education and became the most research year on the topic. In 2019 there were 155 articles, in 2020 there were 160 articles, in 2021 there were 66 articles, and in 2022 there were 45 articles.

Table 2: Research in Multicultural Education in the last 5 years

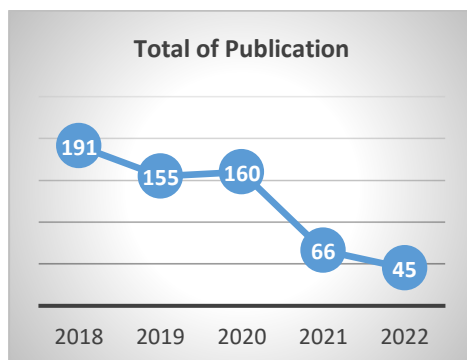| Year of Publication	Publication
2018	191
2019	155
2020	160
2021	66
2022	45
Total	617
Average	**123,4**

Figure 1 Levels of Research Development in the Field of Multicultural Education

The level of development in research on multicultural education in Figure 1 shows the research trend in the last 5 years from 2018-2022. Based on the data in Figure 1, the development of research fluctuates in the first 3 years from 2018 to 2020. From 2018 as many as 191 publications fell in the following year to 155 publications and rose again in 2020 to 160 studies. From 2021, the trend of research publications on multicultural education continued to decline to 66 publications until finally in 2022 there were only 45 publications. The data shows that the popularity of research on multicultural education in the last 5 years is unstable and its popularity is decreasing until 2022.

4.3 Visualization of Multicultural Education Topic Areas Using VOSViewer

The use of the VOS Viewer application results in the computational mapping of articles on multicultural education. All items are grouped into 10 clusters with a total of 347 items. The following is the mapping of the 10 clusters.

Cluster 1 consists of 52 items marked in red, the 52 items include Africa, agency, aspect, author, bilingual education, category, country, critical multicultural education, crt, dialog, discourse, bilingual education, educator, English, exam, factor, framework, future teacher, history, idea, identity, intersection, intersection, lens, literacy education, literature, multicultural literature, multicultural nation, multilingual education, narrative, pedagogy, performance, personality, position, power, preparation, pre-service, pre-service teacher, quality education, race, relevance, research, role, second language, semester, special education, survey, system, united states, manner, whiteness, work.

Cluster 2 consists of 52 items marked in dark green, the 52 items include: application, association, assumption, attitude, awareness, student, competence, content analysis, context, counselor education, counselor education program, course, cultural diversity, current study, decade, effectiveness, exploration, field, importance, influence, integration, intercultural competence, intergroup contact, intervention, investigation, level, meta analysis, multicultural competence, multicultural competence, multicultural counseling, multicultural course, multicultural education literacy, multicultural education research, participant, problem, racism, recommendation, relation, review, scholar, skill, social justice, country, study, theory, tool, topic, training, type, use, variable.

Cluster 3 consists of 47 items marked in blue, the 47 items are analysis, art, case study, challenge, child, community, critical race media literacy, curriculum, difference, difficulty, education, education policy, effect, finland, implication, inquiry, korea, language, learning, light, methodology, ministry, motivation, multicultural society, multicultural education policy, multicultural education program, multicultural family, multicultural society, national identity, need, understanding, parent, part, peace, place, program, project, secondary education, understanding, South Korea, space, support, Sweden, technology, view, youth.

Cluster 4 consists of 34 items marked in yellow, the 34 items are abstract, area, article, attention, Australia, change, classroom, curricula, data, early childhood education, effort, example, expertise, form, inclusive education, knowledge, multicultural background, multicultural context, multicultural music education, multicultural teacher education, participation, possibility, primary school, public education, religion, researcher, resistance, school, strategy, teacher, united state, urban education, voice.

Cluster 5 consists of 34 items marked in purple, the 34 items are acceptance, appreciation, basis, behavior, demand, development, education system, education practice, elementary school, european country, evidence, formation, hong kong, implementation, Islamic education, Islamic religious education, language policy, literature review, multicultural approach, multicultural curriculum, multicultural educational environment, multiculturalism, process, religious education, research interest, respect, response, student, teacher perception, tolerance, unity, value, young child.

Cluster 6 consists of 31 items marked in sky blue, the 31 items are acces, book, class, covid, disability, educational research, emd, environment, equity, future, gender, impact, inclusion, interest, issue, multicultural environment, pandemic, past, professional development, promise, qualitative study, reflection, resource, service, social justice education, social study, struggle, teacher education, teacher education program, united states, university student.

Cluster 7 consists of 31 items marked in orange, the 31 items are case, character education, china, citizenship education, concept, conflict, culture, educational system, era, existence, global citizenship education, globalization, goal, higher education, higher education institute, Indonesia, Israel, learner, multicultural education system, person, principle, reform, region, relation, special issue, success, today, trend, understanding, world, year.

Cluster 8 consists of 26 items marked in brown, the 26 items are ability, activity, approach, approaches, belief, communication, contribution, experience, focus, group, intercultural education, multicultural classroom, multicultural education, multicultural education theory, practice, question, responsive practice, responsive teaching, social change, society, standart, student teacher, teacher training, term, theoretical framework, thought.

Cluster 9 consists of 21 items marked in Pink, the 21 items are action, college, crp, cultural competency, definition, interaction, international student, ladson billings, latino male, model, multicultural education course, paper, perception, perspective, politic, positioning, preservice teacher education, professor, responsive pedagogy, turkey, university.

Cluster 10 consists of 19 items marked in light pink, the 19 items are call, care, color, critical distinction, cultural competence, cultural humility, cultural humility versus cultural competence, diversity, global competence, journal, opportunity, physician training outcome, poor, self, social work education, systematic review, teaching, underserved, validation.

Each cluster shows the relationship between one item and another. Each term is labeled with a colored circle. Each circle has a different size depending on the frequency of occurrence. In the analysis, the size of the circle indicates a positive relationship with the frequency of occurrence of the term in the title. This means that the label of the circle becomes larger as the term appears more frequently in the title. The computational mapping visualization is analyzed based on 3 parts: network visualization (Figure 2), overlay visualization (Figure 3), and density visualization (Figure 4).
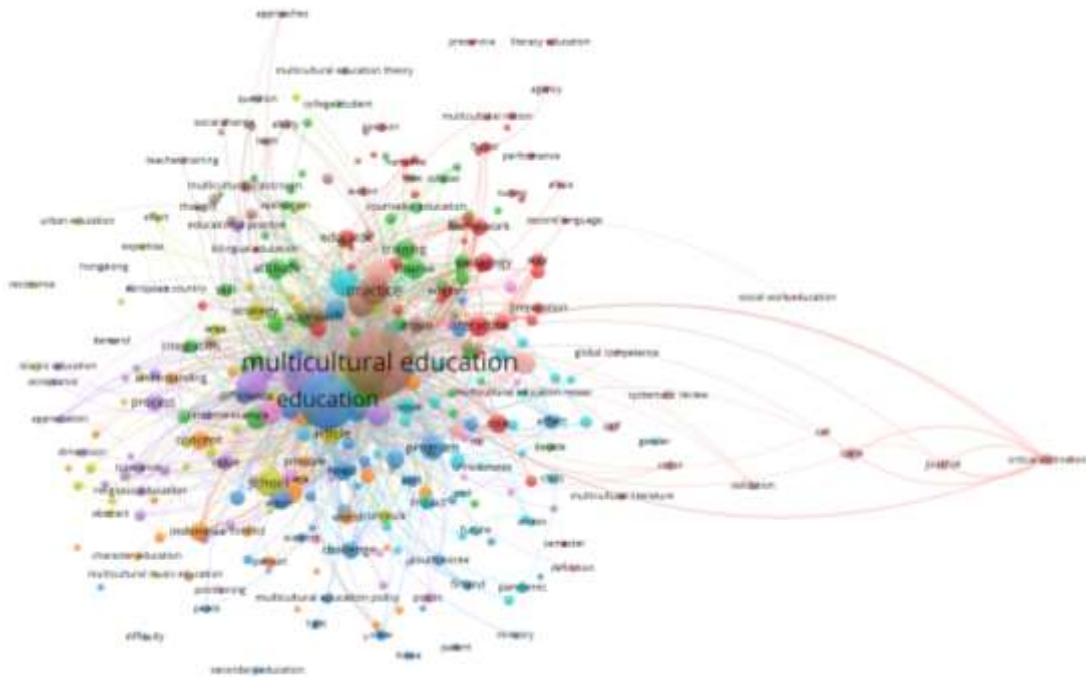
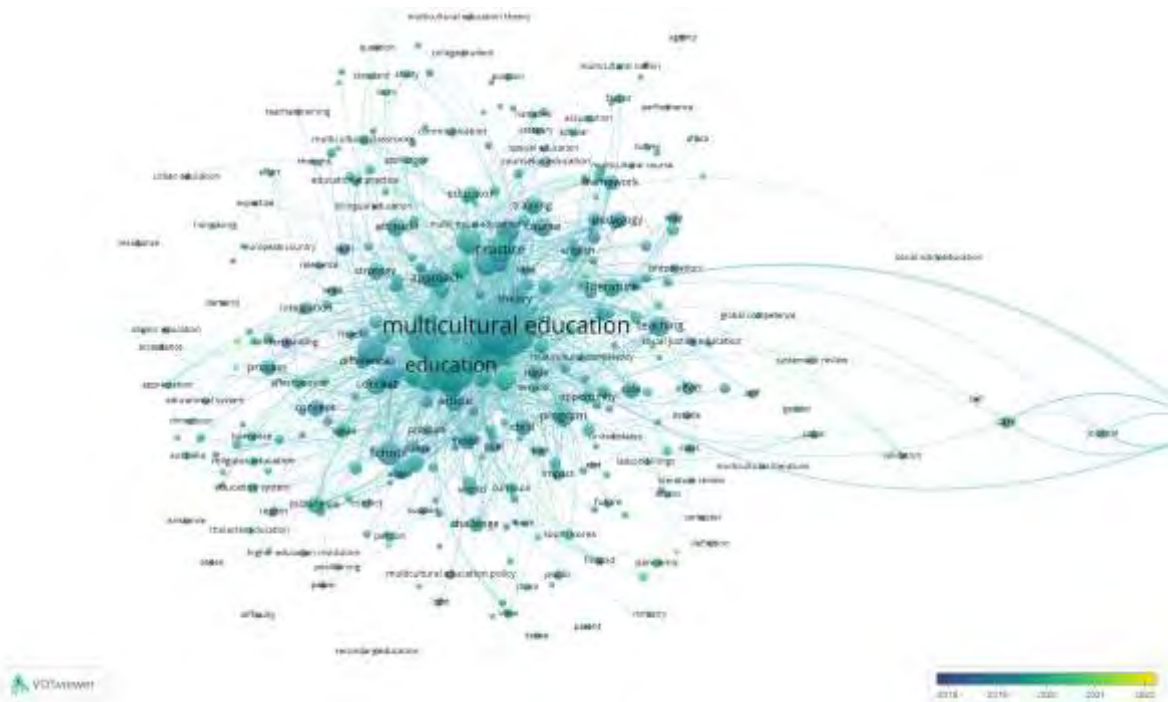Figure 2 Research network visualization on multicultural education

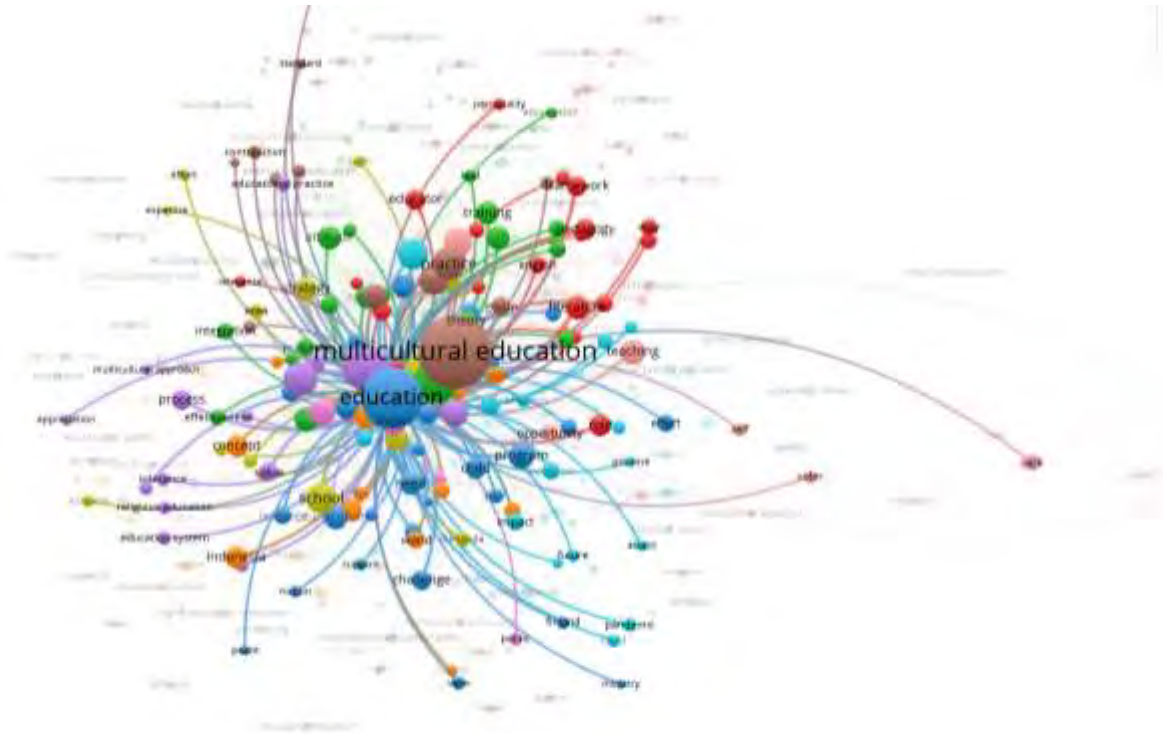Figure 3 Overlay visualization of research on multicultural education

Figure 4 Visualization of Research density on multicultural education

The interconnection between terms is presented in Figure 2, which displays the network of relationships between the terms. The figure illustrates the clusters of terms that are frequently studied and linked to the field of multicultural education research. Based on Network Visualization, it can be divided into 3 parts, the first is multiculturalism which is located in cluster 5 with 174 links and link strength of 394 and occurrence of 61 (Figure 5). The second term is education which is located in cluster 3 with 303 links and a link strength of 1,292 and an incidence of 206 (Figure 6). And the third term is multicultural education which is located in cluster 8 with 328 links and a link strength of 1,808 and an occurrence of 303 (Figure 7).

Figure 5: Network visualization of multiculturalism criteria
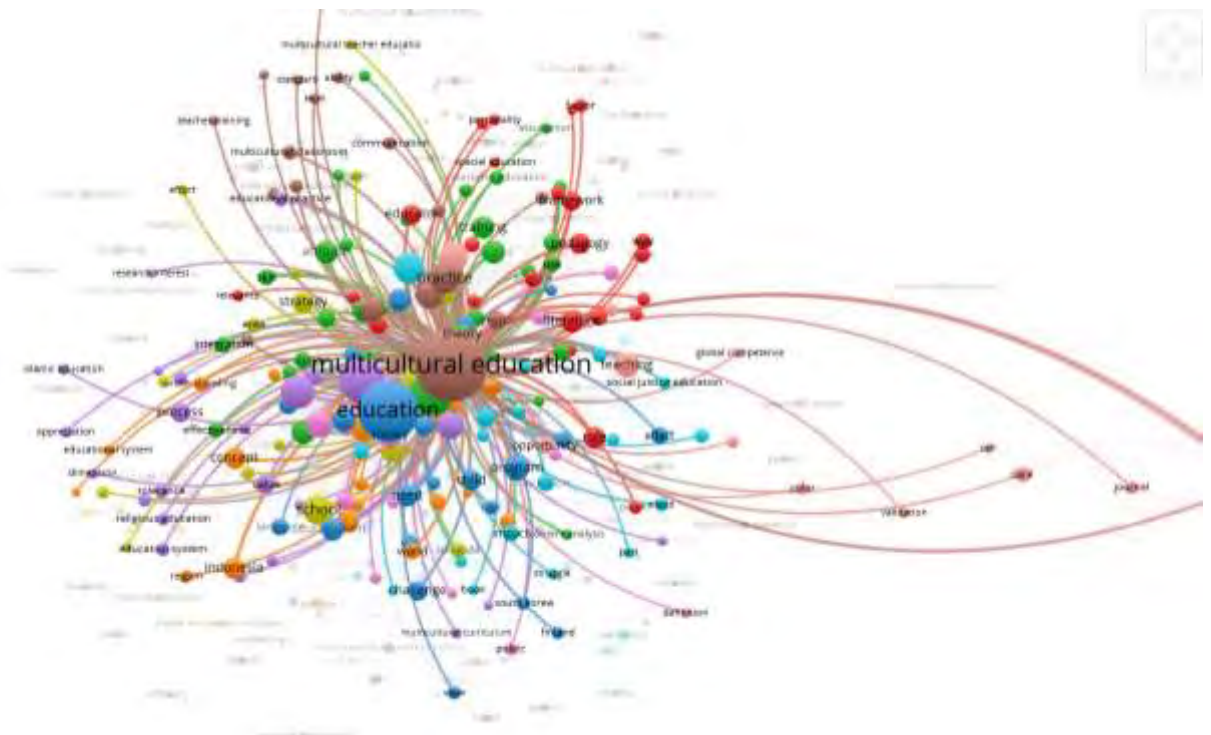
Figure 6. Network Visualization of education criteria

Figure 7: Network Visualization of Multicultural Education Criteria

5. Discussion

Figure 3 shows the overlay visualization on multicultural education research. The overlay visualization shows the novelty of research related to provisions, especially topics on multicultural education (Al Husaeni & Nandiyanto, 2022)a. Figure 4, which is clarified in Figure 8, shows that research on multicultural education was carried out from 2018 to 2019. In that period, the popularity of research on multicultural education amounted to a lot but decreased in the following year. Thus, we can easily create new research on multicultural education because there are still many opportunities for research on the subject.
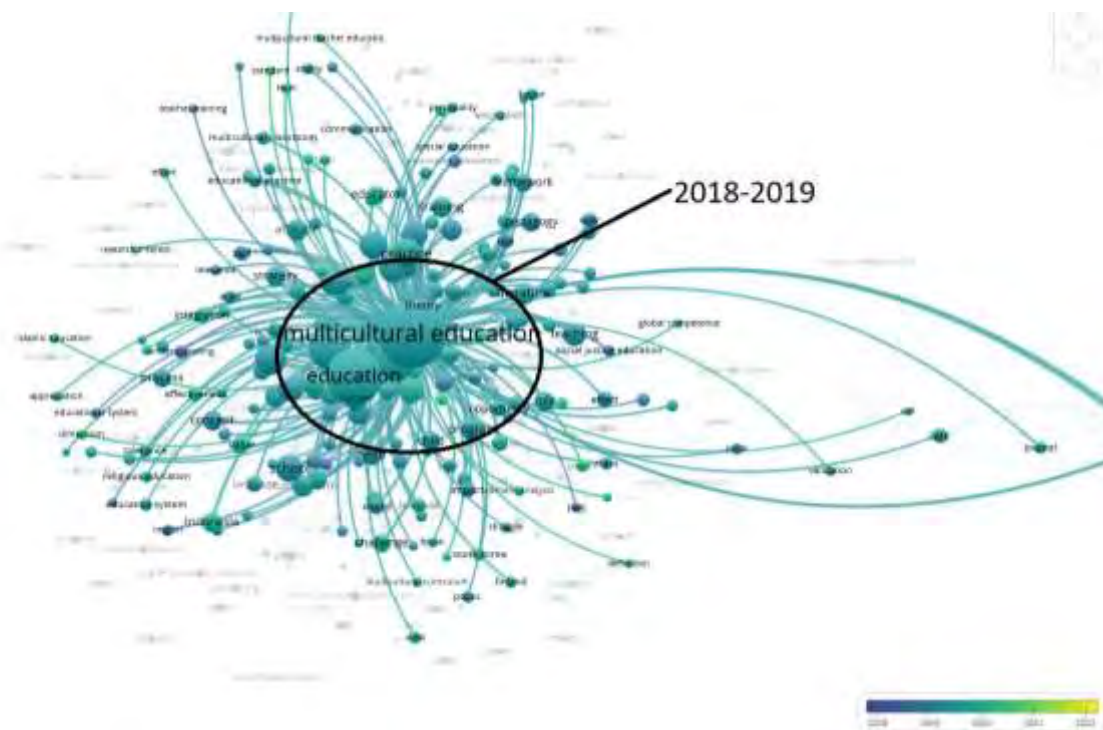

Figure 8 Overlay visualization of Research on multicultural education
in 2018-2019

Based on Figure 3, it can be seen that research related to the terms multicultural education, education, multiculturalism, perspective, difference, implementation, case, and theory has a fairly high number of studies.

Figure 5 shows the network of relationships between the term multiculturalism and the terms acceptance, appreciation, basis, behavior, demand, development, education system, education practice, elementary school, European country, evidence, formation, hong kong, implementation, Islamic education, Islamic religious education, language policy, literature review, multicultural approach, multicultural curriculum, multicultural educational environment, multiculturalism, process, religious education, research interest, respect, response, student, teacher perception, tolerance. Figure 6 shows the network of relationships of the term education

with the terms curriculum, difference, difficulty, education, education policy, effect, Finland, implication, inquiry, Korea, language, learning, light, methodology, ministry, motivation, multicultural community, multicultural education policy, multicultural education program, multicultural family, multicultural society, national identity, need.

Figure 7 shows the network of relationships between the term multicultural education and the terms ability, activity, approach, approaches, belief, communication, contribution, experience, focus, group, intercultural education, multicultural classroom, multicultural education, multicultural education theory, practice, question, responsive practice, responsive teaching, social change, society, standard, student teacher, teacher training, term, theoretical framework, though.

The data shows that multicultural education is still related to other terms. From the mapping results, it can be seen that the multicultural field is related to the term multicultural education related to 25 other terms. In conclusion, it can be inferred that the field of multicultural education continues to be an active area of research that is interrelated with other terms. This suggests that future research in this area is likely to have a significant impact. (Al Husaeni & Nandiyanto, 2022; Carmona-Serrano et al., 2020; Marín-Marín et al., 2021).

Based on the results of mapping the article data collected over the past 5 years, it can be seen that the word multicultural education game is still rarely used in research. From the results of this study, research on newer game-based learning can be sought by connecting with other terms that are more up-to-date.

6. Conclusion

In conclusion, the bibliometric analysis conducted on publications related to Multicultural Education using Harzing's Publish or Perish application and the Google Scholar database revealed that there were 617 relevant articles published from 2018 to 2022. The results showed a fluctuating development in research on Multicultural Education from 2018 to 2020, and a decrease in the last two years. Mapping of the results revealed that the field of Multicultural Education is related to 25 other terms, indicating that the field is still open to newer research by linking to other terms such as 21st century skills, social conflict, conflict-based management, diversity and global education, and other related terms. Therefore, it can be concluded that there is a need for newer and up-to-date research in the field of Multicultural Education by linking it with other related terms to address current issues and trends in the field.

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