



Bibliometric Analysis of Numeracy and Mathematical Problem-Solving Skills in Mathematics Education (2020–2026)

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ABSTRACT

Numeracy skills and mathematical problem-solving are two key competencies in mathematics education in Indonesia that continue to develop significantly. However, no bibliometric study has specifically mapped the research development on both topics in an integrated manner. This study aims to map publication trends, author collaboration networks, and thematic clusters of research on students' numeracy and mathematical problem-solving skills in mathematics learning during the period 2020–2026. The method used is bibliometric analysis with data sourced from Google Scholar via the Harzing's Publish or Perish application. From 994 initial documents, 77 articles were selected based on thematic relevance, mathematics subject focus, and Indonesian language. Data were analyzed using Microsoft Excel and visualized using VOSviewer. The results show an increasing publication trend with a peak in 2025. The most productive authors are Fauziyah, Nur and Wintarti, Atik with the highest Total Link Strength (TLS) score of 4. MATHEdunesa is the most productive journal, while Jurnal Ilmiah Matematika Realistik has the highest citation impact (355 citations). Keyword cluster analysis yielded 6 main clusters covering national context (AKM), numeracy characteristics, problem-solving strategies, assessment, error analysis, and learning processes. Topics still rarely explored include error analysis, gender perspectives, and the application of Polya's theory. These findings are expected to serve as an intellectual map for researchers and educators in determining future research directions on numeracy and mathematical problem-solving.

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Mathematics Learning*

INTRODUCTION

Numeracy has become a critical issue that has received significant attention in the development of education in Indonesia in recent years (Susanti, 2024). Organisation for Economic Cooperation and Development (OECD) (2018) defines numeracy as an individual's ability to formulate, employ, and interpret mathematics. These three terms provide a useful and meaningful framework for organizing mathematical processes that describe what individuals do to connect the context of a problem with mathematics so that the problem can be solved (OECD, 2018).

In addition to numeracy, problem-solving has also become a key focus in educational practices in Indonesia (Susanti, 2024). This is evident in elementary school mathematics education, which is not only aimed at improving students' computational skills but also at enhancing their problem-solving abilities (Helmon & Sennen, 2020). Globally, problem-solving has become one of the primary objectives of mathematics curricula in most parts of the world (Olivares et al., 2021), where problem-solving is viewed not merely as the ultimate goal of mathematics education but also as the primary tool for conducting mathematics education itself. The crucial role of problem-solving is officially affirmed in the context of Indonesian education through a decision issued by Kepala Badan Standar, Kurikulum dan Penilaian Pendidikan (2025), which identifies this competency as both a goal of mathematics education

and a process component that acts as a conceptual instrument for building and reaffirming students' mathematical understanding.

From the above discussion, numeracy skills are closely linked to problem-solving skills in mathematics education. The PISA 2022 Mathematics Framework explicitly states that mathematical literacy encompasses the ability to formulate, use, and interpret mathematics in various real-world contexts to solve problems (OECD, 2018). In line with this, research shows that numeracy and mathematical literacy have a significant impact on students' problem-solving skills, as the problem-solving process requires students to understand the problem, devise strategies, implement solutions, and evaluate solutions systematically (Alfiah et al., 2020; Ma'ruf et al., 2024; Susanti et al., 2023).

As attention to these two competencies has grown, the volume of research publications on numeracy and mathematical problem-solving at the global level has also seen significant growth, particularly since 2020 (Szabo et al., 2020). A bibliometric analysis of the Scopus database notes a surge in research publications on mathematical problem-solving, peaking in 2020 with 42 documents and rising again in 2023 to 35 documents (Hendriani et al., 2025). A similar growth trend is observed in mathematics education research more broadly, indicating the emergence of new thematic clusters in response to contemporary issues such as digital learning and the impact of the COVID-19 pandemic (Chkana et al., 2025). In the face of such an explosion in publication volume, bibliometric analysis has become a reliable approach for mapping the intellectual structure of a field, identifying trends, author collaboration networks, and dominant topics (Donthu et al., 2021). Furthermore, bibliometric analysis has been widely applied in mathematics education research, including in studies of problem-based learning (Mashuri et al., 2025), and the use of technology in mathematics education (Navarro-Ibarra et al., 2025).

Although research on numeracy and mathematical problem-solving continues to evolve, to date there has been no bibliometric study that specifically maps the patterns of research development on these two topics in an integrated manner, particularly for the period 2020–2026. Existing studies generally address only one of these topics or examine mathematics education in general without focusing on the intersection between numeracy and problem-solving. This gap serves as the foundation and primary motivation for this study.

Based on this background, this study aims to map the research landscape on students' numeracy skills and mathematical problem-solving in mathematics education for the 2020–2026 period using a bibliometric approach. Specifically, this study seeks to answer the following questions: (1) What are the trends in research publications during this period? (2) Who are the most influential authors and institutions? (3) What are the dominant topics and thematic clusters? and (4) In which direction will this research develop in the future? The research results are expected to provide a useful intellectual map for researchers, educators, and mathematics education policymakers in determining future research priorities.

METHOD

The research design employed in this study utilized a bibliometric analysis method. Bibliometric analysis was chosen because it enables the search, recording, analysis, and visualization of published documents relevant to the selected theme (Marín-Marín et al., 2021). Research data were collected through the Google Scholar database, which is known for its accessibility and comprehensive indexing (Zahrah et al., 2024). To facilitate data collection, the Publish or Perish application from Harzing was used to conduct a literature review on the specified themes, namely “numeracy” and “problem-solving.”

The specific search terms used to collect data from the Google Scholar database were “(numeracy OR numeracy skills OR mathematical ability OR mathematical skills) AND (problem solving OR problem-solving) AND (math OR mathematics OR mathematics education OR math:

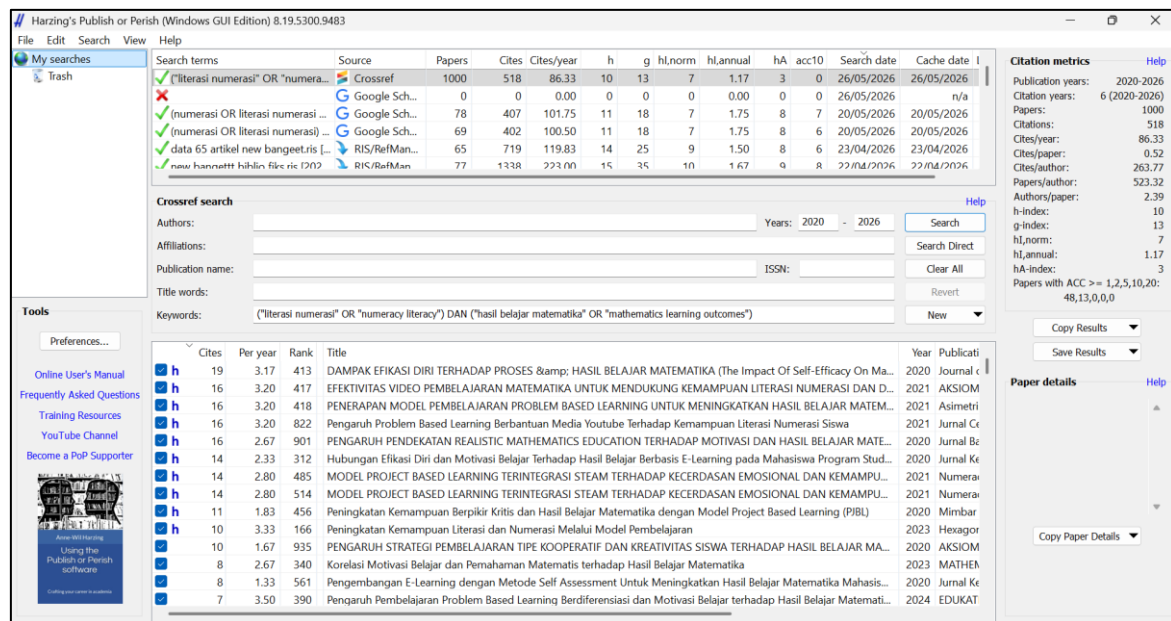


Figure 1 Data Search using Harzing's PoP

Data collection was conducted on March 27, 2026, using the keywords mentioned above. A total of 994 unique publications were obtained from the years 2020–2026, all from Indonesia. After a screening process, 77 documents were selected, while 917 were excluded. The exclusion process was based on specific criteria: the subject matter was limited to mathematics, and each article had to include variables related to numeracy and problem-solving. The process also restricted the language of the documents to Indonesian. Ultimately, 77 documents were obtained that met the criteria and topic requirements. The data was downloaded from the Publish or Perish database in RIS format. The data in RIS format was then uploaded to the Mendeley application to identify the titles and abstracts according to the researcher's specifications. Subsequently, the data was further processed using the VOSviewer software.

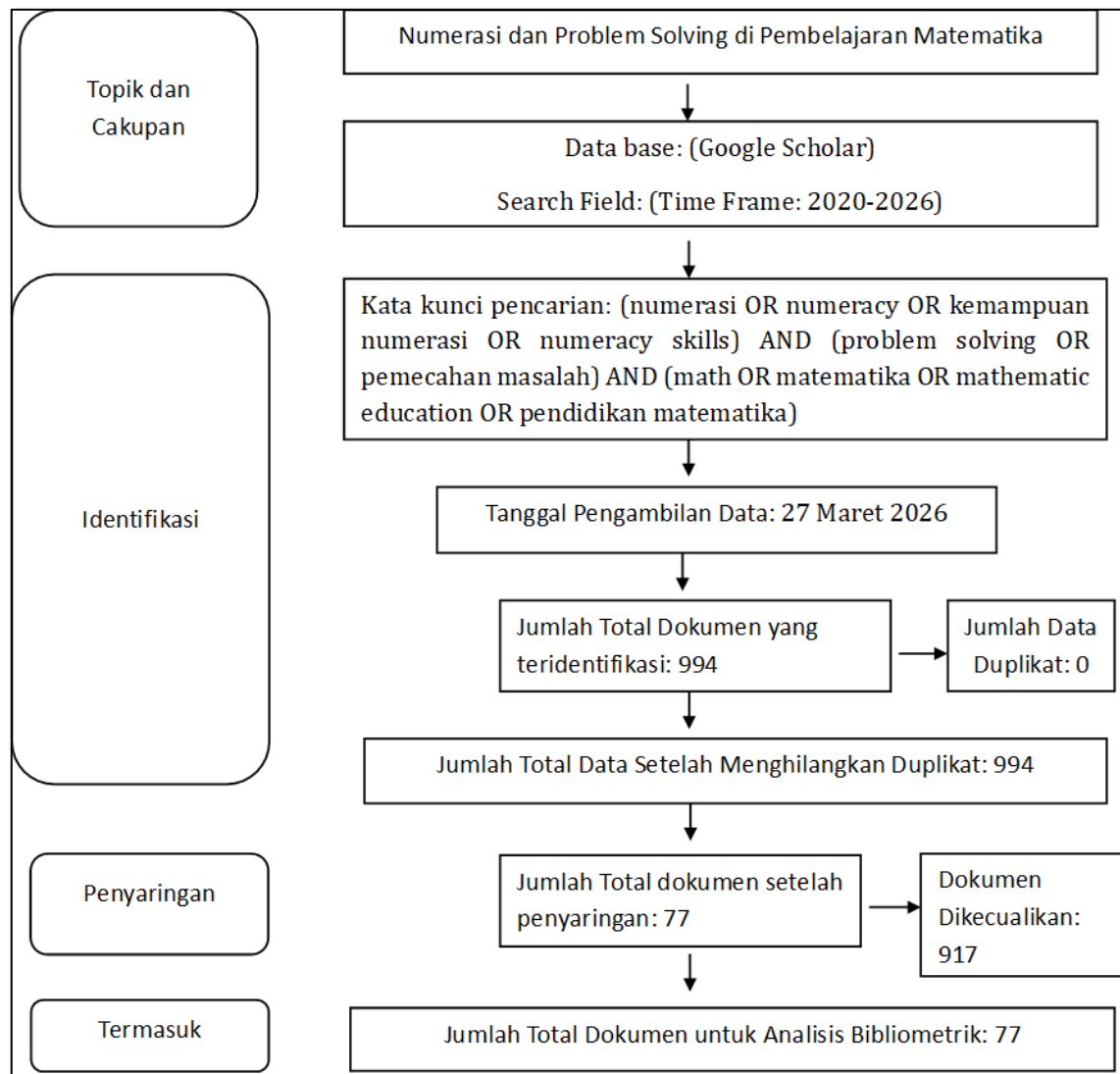


Figure 2 Systematic Process Collecting Literature

Research data in RIS format was processed using the Publish or Perish application to map the annual citation distribution and identify articles with the highest number of citations. The data was then processed using Microsoft Excel to analyze annual publication trends, profiles of top journals, and to determine the most influential journals in this topic. Next, the VOSviewer application will be used to conduct an in-depth analysis of author networks and keywords. The authorship analysis includes the identification of top authors, the calculation of Total Link Strength (TLS), and the mapping of collaboration networks among researchers. Meanwhile, in the keyword analysis, the top keywords and their TLS values will be identified, along with connectivity network mapping, clustering, time-scale analysis, and saturation level analysis for the 2020–2026 period.

RESULTS AND DISCUSSION

1. Descriptive Quantitative Analysis of Documents

a. Annual Publication Trends

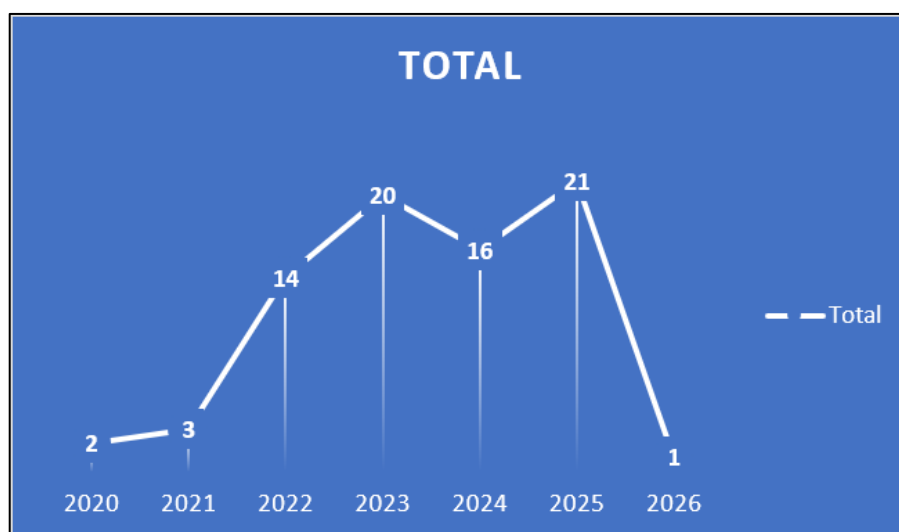


Figure 3 Annual Publication Trends

These findings indicate that the publication trend is on the rise, peaking in 2025. This upward trend reflects researchers' high interest in the topics of numeracy and mathematical problem-solving. Although there are no bibliometric studies that specifically address these two topics, several studies on each topic have also shown an upward trend. Global research on numeracy shows consistent growth with an annual increase of 8.92% (Qamariah et al., 2025). Meanwhile, research on mathematical problem-solving skills also experienced a surge in publications following the COVID-19 pandemic, peaking in 2020 and rising again in 2023 (Hendriani et al., 2025). Thus, the peak in publications in 2025 found in this study confirms that the topics of numeracy and mathematical problem-solving are currently the focus of researchers in Indonesia.

b. Top Journal Profiles

Label Baris	Hitung dari Source
MATHEdunesa	4
Jurnal Cendekia : Jurnal Pendidikan Matematika	3
Pendas : Jurnal Ilmiah Pendidikan Dasar	2
Jurnal Riset Pendidikan dan Inovasi Pembelajaran Matematika (JRPIPM)	2
Jurnal Pendidikan Guru Madrasah Ibtidaiyah	2

Figure 4 Top Jurnal Profiles

The results show that the journal MATHEdunesa is the most productive publisher, contributing the largest number of articles to this database. This indicates that Universitas Negeri Surabaya (UNESA), as the publisher of MATHEdunesa, demonstrates a strong focus and commitment to research in the fields of numeracy and mathematical problem-solving in Indonesia. This finding differs from the results of Wahyuni et al. (2024) who used the Scopus database and found that the Journal of Mathematical Behavior and ZDM were the most productive journals for the topic of mathematical problem-solving. This difference can be explained by the scope of the databases used. Previous research used Scopus, which is internationally indexed, while this study utilized

Google Scholar, which has a broader scope and indexes more national journals, including MATHEdunesa.

Furthermore, the findings in this study also differ from those of Simbolon & Nurjanah (2025) who investigated a similar topic mathematical literacy but used the Scopus database. That study found that the Journal on Mathematics Education, published by Sriwijaya University, was the most productive journal. This difference reinforces the hypothesis that the choice of database influences the results obtained. The Google Scholar database used has a broader coverage of national journals, thereby successfully capturing the MATHEdunesa journal, which is not deeply indexed in Scopus.

2. Citation Analysis

a. Analysis of The Most Cited Articles

	Cites	Per year	Rank	Title
✓ h	314	62.80	10	PENGARUH KEMAMPUAN NUMERASI DALAM MENYELESAIKAN MASALAH MATEMATIKA TERHADAP PRESTASI BEL...
✓ h	167	27.83	39	Kemampuan numerasi mahasiswa pendidikan profesi guru sekolah dasar dalam menyelesaikan masalah matematika
✓ h	117	29.25	11	Analisis Kemampuan Numerasi Siswa SMA dalam Menyelesaikan Soal Asesmen Kompetensi Minimum (AKM)
✓ h	92	18.40	56	Analisis Kemampuan Literasi Matematis Siswa dalam Memecahkan Masalah Matematika Berbentuk Soal Cerita
✓ h	77	19.25	45	Numeracy Literacy Skills of Elementary School Students through Ethnomathematics-Based Problem Solving
✓ h	52	13.00	57	Kemampuan Literasi Numerasi Mahasiswa dalam Menyelesaikan Masalah Matematika
✓ h	48	9.60	65	Analisis Kemampuan Literasi Numerasi Peserta Didik SMP dalam Menyelesaikan Soal Cerita Aljabar
✓ h	47	11.75	59	Brankas Rahasia: Media Pembelajaran Numerasi Berbasis Berpikir Komputasi untuk Meningkatkan Kemampuan Peme...
✓ h	41	13.67	6	Analisis kemampuan peserta didik dalam menyelesaikan soal geometri pada asesmen kompetensi minimum-numer...
✓ h	29	7.25	13	Kemampuan Numerasi Siswa MA dalam Menyelesaikan Soal Setara Asesmen Kompetensi Minimum pada Konten Alj...

Figure 5 Analysis of The Most Cited Articles

The most cited article is “Pengaruh Kemampuan Numerasi dalam Menyelesaikan Masalah Matematika terhadap Prestasi Belajar Mahasiswa Pendidikan Matematika” (Anderha & Maskar, 2021). This indicates that research on the influence of numeracy on academic achievement has the greatest impact in this dataset. This finding aligns with the research by Qamariah et al. (2025) which states that the topic of numeracy is currently experiencing rapid.

b. High-Impact Journals

Nama Jurnal	Jumlah d Cites
Jurnal Ilmiah Matematika Realistik Jurnal Ilmiah Matematika Realistik (JI-MR)	355
Education And Human Development Journal æ	167
MATHEdunesa	149
Jurnal Pendidikan Matematika dan Sains	92
Interdisciplinary Social Studies	77

Figure 6 High-Impact Journals

Jurnal Ilmiah Matematika Realistik (JI-MR) emerged as the journal with the greatest research impact in this study, with a total of 355 citations. This figure demonstrates that the journal is widely used as a reference by other researchers in the fields of numeracy and mathematical problem-solving. The journal’s influence is further supported by its SINTA 4 accreditation status from Kementerian Pendidikan, Kebudayaan, Riset, dan Teknologi (Kemdikbudristek) based on SK No. 0173/C3/DT.05.00/2025. Additionally, the journal is indexed in DOAJ (Directory of Open Access Journals), an internationally recognized directory of open-access journals.

c. Citation Distribution

Citation metrics Help	
Publication years:	2020-2026
Citation years:	6 (2020-2026)
Papers:	77
Citations:	1338
Cites/year:	223.00
Cites/paper:	17.38
Cites/author:	699.42
Papers/author:	32.00
Authors/paper:	2.74
h-index:	15
g-index:	35
hI,norm:	10
hI,annual:	1.67
hA-index:	9
Papers with ACC >= 1,2,5,10,20:	60,39,17,8,3

Figure 7 Citation Distribution

Based on citation statistics from the Publish or Perish application, all documents in this study have a strong impact on the literature. A total of 1,338 citations were recorded, with an average of 223.00 citations per year. In addition, an h-index of 15 and a g-index of 35 indicate a fairly even and significant distribution of the research's influence in this field.

3. Publication Analysis

a. Identification of Top Authors

Create Map ×			
Verify selected authors			
Selected	Author	Documents	Total link strength
☒	fauziyah, nur	2	4
☒	wintarti, atik	2	4
☒	ainanda, dimas agung	1	3
☒	alifa, karenina rizka	1	3
☒	alimuddin, herman	1	3
☒	aniswita, aniswita	1	3
☒	apriyanti, destiana	1	3
☒	araiku, jeri	1	3
☒	baidowi	1	3
☒	fahmy, ahmad faridh ricky	1	3
☒	fauziah, irma	1	3
☒	firmanti, pipit	1	3
☒	gulo, rido eli	1	3
☒	hartatik, sri	1	3
☒	hidayat, muhammad thamrin	1	3
☒	hidayati, vivi rahmatul	1	3
☒	hulukati, evi	2	3
☒	isnaniah, isnaniah	1	3
☒	janah, riyadlotul	1	3
☒	khoerunnisa	1	3

Figure 8 Identification of Top Authors

The authors Fauziyah, Nur, and Wintarti, Atik were the most prolific, contributing a total of two articles.

b. TLS Analysis

Verify selected authors			
Selected	Author	Documents	Total link strength
☒	fauziyah, nur	2	4
☒	wintarti, atik	2	4
☒	ainanda, dimas agung	1	3
☒	alifa, karenina rizka	1	3
☒	alimuddin, herman	1	3
☒	aniswita, aniswita	1	3
☒	apriyanti, destiana	1	3
☒	araiku, jeri	1	3
☒	baidowi	1	3
☒	fahmy, ahmad faridh ricky	1	3
☒	fauziah, irma	1	3
☒	firmanti, pipit	1	3
☒	gulo, rido eli	1	3
☒	hartatik, sri	1	3
☒	hidayat, muhammad thamin	1	3
☒	hidayati, vivi rahmatul	1	3
☒	hulukati, evi	2	3
☒	isnaniah, isnaniah	1	3
☒	janah, riyadlotul	1	3
☒	khoerunnisa	1	3

Figure 9 TLS Analysis

An analysis of relationship strength shows that Fauziyah, Nur, Wintarti, and Atik rank at the top with a TLS score of 4. This indicates that these authors are the most active collaborators and have the broadest collaborative networks in this dataset

c. Collaboration Network Analysis

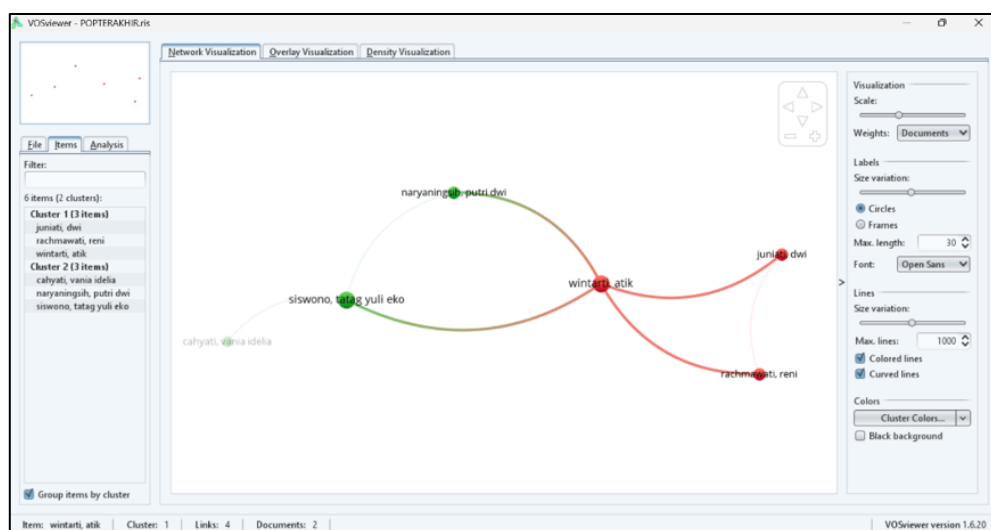


Figure 10 Collaboration Network Analysis

Based on the network visualization, collaboration among authors forms five main groups. This network illustrates collaborative relationships between authors, indicated by connecting lines. It can be seen that the author with the largest circle serves as the network's central node. Most of the other authors do not appear in the visualization because they wrote independently and have no collaborative links with these main groups. The patterns of collaborative networks identified in this study are consistent with the findings of several previous bibliometric studies.. Wahyuni et al. (2024), in a Scopus-based bibliometric analysis of problem-solving in mathematics education, found that collaboration among researchers tends to be concentrated in small groups with specific authors serving as key connectors, while the majority of other authors are not connected within the network.

A similar trend was also reported by Hendriani et al. (2025) in a global bibliometric study of research trends in mathematical problem-solving ability for the 2020–2024 period, which found that collaboration clustering was centralized and uneven. Methodologically, Donthu et al. (2021) explain that fragmentation of the author network—characterized by the majority of researchers working individually without connections to major clusters—is a common condition found in bibliometric analyses of the education field, while also indicating that collaborative research generally yields more significant scientific impact. Thus, these findings not only describe the current state of the research collaboration network in numeracy and mathematical problem-solving in Indonesia but also underscore the need to strengthen connections among researchers as a strategy to improve the quality and impact of research in this field in the future.

4. Keyword Analysis

a. Identification of Top Keywords

Table 1 Identification of Top Keywords

No	Kata Kunci	Occurrences
1	problem	105
2	Ability	61
3	level	60
4	Question	41
5	test	36
6	Skill	30
7	Akm	28
8	Numeracy skill	24

General keywords such as “student,” “data,” and ‘study’ were excluded from the network mapping so that the visualization would focus more on the core concepts of the research. The prevalence of keywords such as “problem,” “ability,” and “level” indicates that the studies in this dataset consistently focus on the characteristics of mathematical problems and the assessment of students' ability levels.

b. Analysis of Top TLS

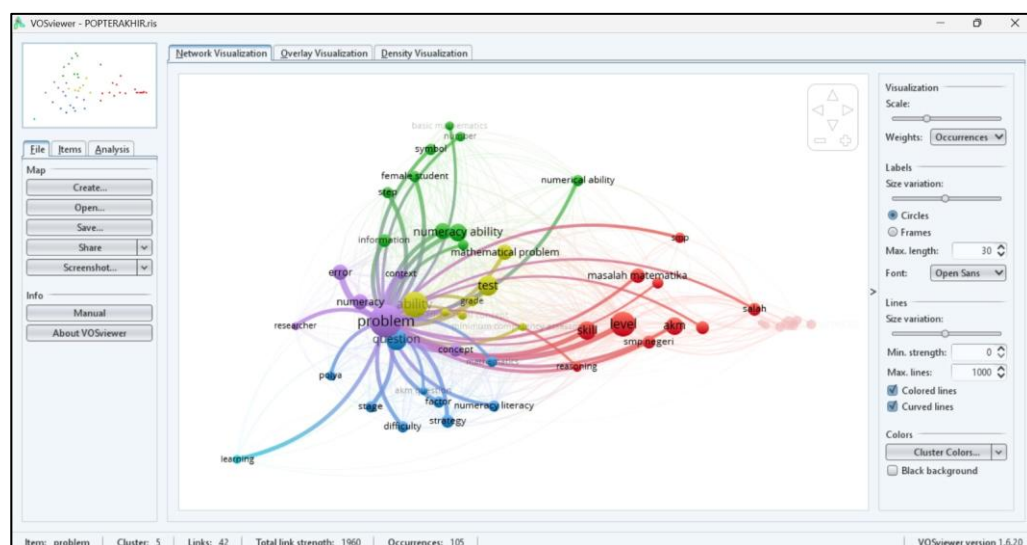
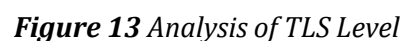
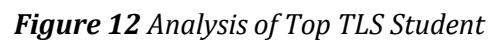


Figure 11 Analysis of Top TLS Problem



The dominance of the keywords “problem,” “ability,” and “level” with the highest TLS values in this study aligns with the findings of Wahyuni et al. (2024) who, in a bibliometric analysis of problem-solving in mathematics education, found that keywords related to student ability and question characteristics consistently dominated the keyword co-occurrence network. A similar trend was also found in Yiğ (2022) study, which analyzed trends in mathematics education research from 2017 to 2021 using VOSviewer, showing that keywords related to ability assessment and problem-solving occupied central positions in the network with the highest link strength. The dominance of these three keywords indicates that researchers consistently focus on the relationship between the characteristics of mathematical problems and students’ competency levels in solving them an issue that remains central to research in mathematics education literature both in Indonesia and globally.

c. Keyword Interconnection Network Analysis

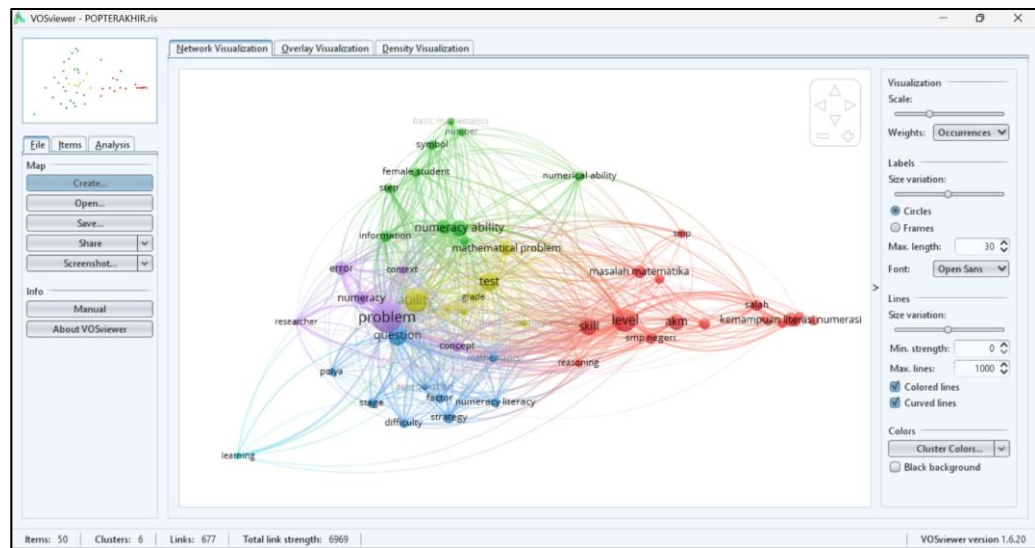


Figure 14 Keyword Interconnection Network Analysis

Based on the network visualization in the figure above, the following can be analyzed. The keywords 'problem,' 'test,' and 'ability' appear as the central nodes of the network with the most connections, indicating that the studies in this dataset focus on testing students' problem-solving abilities. A very thick line is visible between 'problem' and 'test' and 'question', indicating a very strong research connection between the development of test instruments (questions) and mathematical problem-solving. Furthermore, the keywords 'skill' and 'level' act as bridges connecting the English-language cluster (left side) with the Indonesian-language cluster (right side, such as AKM, kemampuan literasi numerasi), indicating that the concepts of ability level and skill serve as the common thread uniting all the research articles in this dataset. In terms of network density, the left side of the graph appears denser than the right side. This indicates that research using international terminology (English) involves more complex variations in variable relationships compared to research using Indonesian terminology.

d. Keyword Clustering

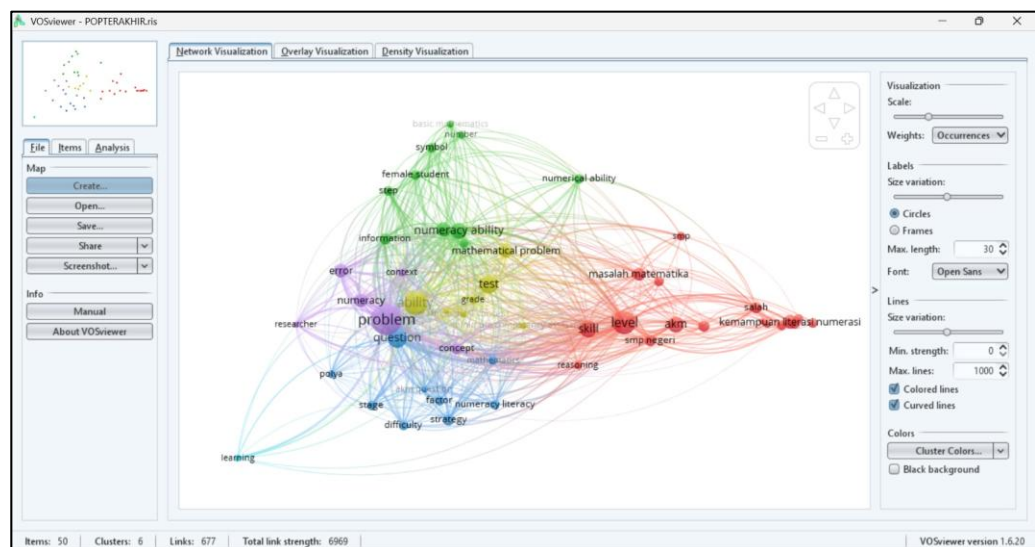


Figure 15 Network Visualization

Based on the analysis results, it was found that all keywords are divided into 6 main clusters reflecting different research focuses. The first cluster, marked in red, consists of 17 items focusing on the context and implementation of numeracy assessments in Indonesia, including items such as *akm*, *kompetensi minimum*, *kemampuan literasi matematika*, *kemampuan literasi numerasi*, *soal cerita*, *smp*, *smp negeri*, *masalah matematika*, *reasoning*, *salah*, *level*, *skill*, *analisis data*, *penyajian data*, *kualitatif*, *hot*, dan *analisis*. This cluster indicate that research in the dataset largely examines the implementation of AKM policies in secondary schools, including analysis of student errors and reasoning skills in the context of word problems. The second cluster, marked in green, consists of 10 items focusing on the basic abilities and characteristics of research subjects, including *numeracy ability*, *numerical ability*, *numeracy skill*, *basic mathematics*, *female student*, *number*, *symbol*, *step*, *information*, dan *qualitative approach*. This cluster indicates research on differences in students' basic numeracy abilities, including from a gender perspective, using a qualitative approach.

The third cluster, marked in blue, consists of 9 items focusing on problem-solving methodologies and approaches, including *polya*, *strategy*, *stage*, *difficulty*, *factor*, *question*, *akm question*, *numeracy literacy*, dan *mathematics*. This cluster indicates that research in the dataset frequently examines problem-solving stages based on Polya's theory, as well as the difficulties students face in solving numeracy problems. The fourth cluster, marked in yellow, consists of 7 items focusing on instruments for evaluating and measuring student competencies, including *test*, *ability*, *mathematical problem*, *mathematical concept*, *minimum competency*, *students mathematical*, dan *grade*. This cluster emphasizes the development and use of assessment tools to evaluate students' mathematical competencies, which is closely related to the AKM policy.

The fifth cluster, marked in purple, consists of 6 items focusing on identifying students' errors in the context of numeracy, including *error*, *problem*, *context*, *numeracy*, *concept*, dan *researcher*. This cluster reflects the researchers' interest in analyzing the errors students make when solving real-world numeracy problems. Finally, the sixth cluster, marked in turquoise, consists of only one keyword and appearing in the lower-left corner with the keyword "learning," this cluster indicates a focus on the learning process in general and serves as the overarching framework for the entire educational process under study.

e. Time Series Analysis

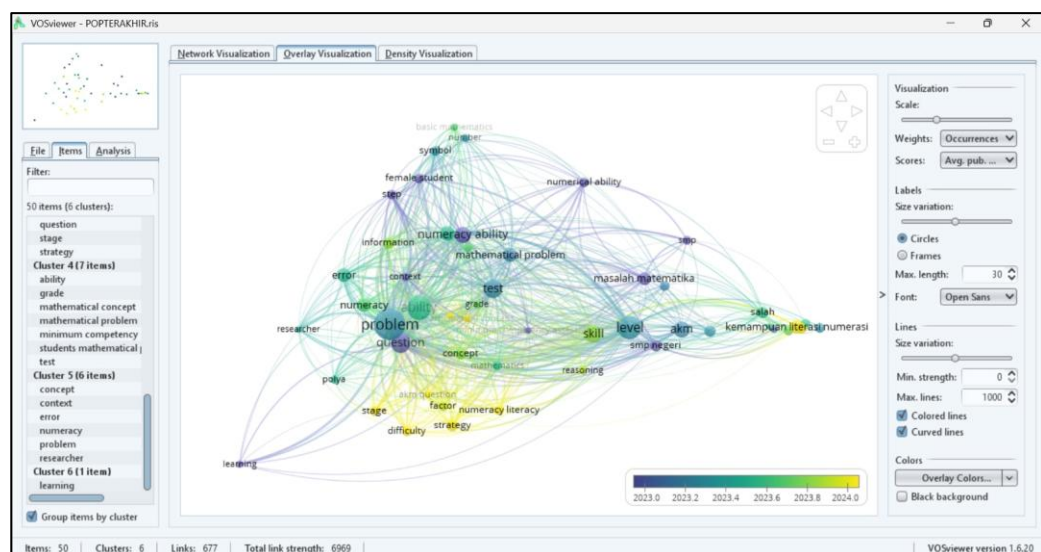


Figure 16 Time Series Analysis

The timeline analysis (Overlay Visualization) shows the evolution of research trends from 2023 to early 2024. In the early period 2023 (purple color), keywords such as *learning*, *numerical ability*, *masalah matematika*, *female student*, *smp* were dominant. This indicates that, at the beginning of the period, the research focus was still on basic learning concepts and the assessment of general numerical ability. Moving into mid-2023 (blue-green color), a shift in research emerged, marked by the appearance of keywords such as *ability*, *level*, *numeracy*, *akm*, *error*, *problem*, *test* dan *mathematical problem*, indicating the growing development of skills analysis and identification of student errors. In the most recent period approaching 2024 (yellow color), keywords such as *information*, *numeracy literacy*, *strategy*, *difficult*, *factor*, *akm questions*, dan *literasi*. became dominant, demonstrating that the latest research trends focus on measuring problem-solving abilities and strategies for solving problems in the context of the Minimum Competency Assessment (Salsabila et al., 2026; Sari et al., 2024; Viyana et al., 2025).

f. Saturation Analysis



Figure 17 Saturation Analysis

The saturation analysis was conducted to examine the density of research topics within the dataset, and based on the density visualization in the figure above, it can be seen that areas with high saturation indicated by bright yellow or the lightest shades such as the topics “problems,” “questions,” “skills,” and “tests,” exhibit the strongest and most widespread intensity, meaning these topics have been extensively researched and discussed in the literature, resulting in a very high level of saturation. Meanwhile, areas with moderate density, shown in green, such as ‘numeracy skills’, ‘level’, ‘AKM’, and ‘kemampuan literasi numerasi’, indicate density that is beginning to rise but has not yet reached peak saturation, signaling that these topics are currently being actively developed by many researchers. Whereas sparse areas, which are light or dark blue at the periphery, such as the keywords ‘female students’, ‘Polya’, ‘learning’, and ‘errors’, indicate that these topics are still rarely explored or have not yet been intensively linked to other main variables.

The results of the saturation analysis indicate that research on problem-solving and assessment instruments is already highly saturated (frequently studied). Future researchers are advised to explore areas that have not yet been extensively studied in order to generate new findings. In line with this recommendation, several recent studies indicate that error analysis and the mapping of gender perspectives

(female/male students) have now become key references in the development of the field of numeracy literacy (Amin et al., 2021; Mellyzar et al., 2022).

CONCLUSION

This bibliometric study successfully mapped research on numeracy and mathematical problem-solving skills in mathematics education in Indonesia for the period 2020–2026. Publication trends show a consistent increase, peaking in 2025, reflecting researchers' high interest in both topics. The most productive authors and most active collaborators are Fauziyah, Nur, and Wintarti, Atik, with contributions of 2 articles and the highest TLS score (4). The journal MATHEdunesa is the most productive publisher, while the Journal of Realistic Mathematics Education (JI-MR) has the greatest research impact based on total citations (355). Keyword cluster analysis identified 6 main thematic clusters, indicating that research in this field centers on ability testing, test instruments, and the AKM policy context. Topics that remain under-researched include error analysis, gender perspectives, and the application of Polya's theory presenting opportunities for future researchers to develop more diverse and novel studies. This study is limited to a single database (Google Scholar) with a restriction to the Indonesian language; therefore, further studies are recommended to expand data sources to Scopus, Web of Science, or SINTA for a more comprehensive overview.

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