Publication Trends and Development of Critical Thinking Concepts in Elementary Education: A Bibliometric Review

Anna Maria Oktaviani[1], Arita Marini[2], Asep Supena[3]

[1]Department of Elementary Education, Universitas Negeri Jakarta
[2]Department of Elementary Education, Universitas Negeri Jakarta
[3]Department of Elementary Education, Universitas Negeri Jakarta

Abstract

Critical thinking is becoming an increasingly important skill in the 21st century, characterized by technological advances, globalization, and information complexity. To determine research trends related to critical thinking skills, this research uses the R Package and carries out bibliometric analysis. The metadata used comes from SCOPUS from 2014 to 2024. The data was analyzed with the keywords "critical thinking" and "basic education" to find publication trends, the most prolific authors, the most active institutions, and the most popular research topics and methods. The results of the analysis highlight the evolution and changes in understanding and approaches to critical thinking in the context of basic education over the period studied. This research provides valuable insights for academics, researchers, and educational practitioners to understand the dynamics of the development of critical thinking in basic education literature. It also offers avenues for additional research.

Keyword: Critical Thinking, Basic Education, Bibliometrics.

1. Introduction

In the 21st century, rapid advances in technology and information have brought major changes in various aspects of life, including education (Nurasiah et al., 2022). One of the skills that is the main focus of modern education is critical thinking (Oktaviani et al., 2022). These skills are not only important cognitively but also serve as a foundation for preparing young people to face future challenges and opportunities (Delgado et al., 2016). Critical thinking involves the ability to analyze, evaluate, and synthesize information logically and objectively (Leon & Culala, 2019). In basic education, this ability helps students to be active in receiving information, asking questions, looking for answers, and developing a deep understanding of various topics (Hariyadi et al., 2023). In this information era, students need to sort valid and relevant information from the large amount of data available.

The importance of critical thinking in basic education is not only in the academic aspect but also in developing character and social skills (Pérez Estrada et al., 2023). Students who are trained to think critically are more independent, have high curiosity, and can work together to solve problem (Janse van Rensburg & Rauscher, 2022a). These skills are invaluable in everyday life and in the workplace, where collaboration and problem-solving are the keys to success (Pöllänen, 2020a). The concept of critical thinking in basic education has developed through various stages and approaches. In the beginning, education emphasized memorization and repetition of information. However, as times change, this approach is inadequate to face the complexity of the modern world (Irwandi et al., 2021). Education is starting to shift in a more constructive direction, where students are encouraged to be active in learning and develop critical thinking skills (Hayati & Berlianti, 2020)

The implementation of critical thinking in the basic education curriculum includes various teaching strategies and methods. Teachers play a key role in creating a learning environment that supports the development of critical thinking. This includes the use of open-ended questions, group discussions, problem-based projects, and various activities that stimulate analytical and creative thinking (Mutakinati et al., 2018). Students are taught to understand the subject matter while learning how to think well. Technology also plays an important role in developing critical thinking skills (Firdaus et al., 2022). Digital tools and platforms provide access to various sources of information and enable more interactive and engaging learning (Hammad & Al-Dajeh, 2023a). However, it is important to ensure technology is used wisely and does not replace direct interaction between teachers and students, which is essential to effective learning.

Given this situation, many aspects of learning need to be improved through innovative teaching strategies, especially for subjects that are difficult for students to understand. An academic approach in learning design is important for fostering students' critical thinking abilities during the learning process (Pöllänen, 2020a). Educational platforms that support innovative thinking need to be built to advance current educational concepts. The importance of critical thinking prompted us to use relevant keywords to identify future research trends from the analyzed studies, which can become the main focus of learning in elementary schools. This research aims to evaluate students' critical thinking abilities in elementary schools and to better understand the importance of critical thinking in learning at the elementary level.

2. Literature Review

2.1 Theory Critical Thinking

Thinking as a person's mental ability can be divided into several types, such as logical, analytical, systematic, critical, and creative thinking (Westlund, 2022). Logical thinking is a person's ability to draw valid conclusions according to the rules of logic and prove the validity of these conclusions based on existing knowledge (Marquez, 2017). Meanwhile, analytical thinking is a person's ability to break down, detail, and analyze information in order to understand knowledge using logic and reason, not based on feelings or guesses (Maldonado et al., 2021). Systematic thinking is a person's ability to complete tasks by following the right, effective, and efficient sequence, stages, steps, or planning (Orr et al., 2023). These three types of thinking are interrelated. To think systematically, a person needs to think analytically in understanding the information used. Furthermore, analytical thinking requires the ability to think logically in drawing conclusions from a situation (Janse van Rensburg & Rauscher, 2022b).

Critical thinking and creative thinking are forms of higher order thinking. This ability is considered the highest cognitive competency that students must master in class (Encabo-Fernández et al., 2023; Pöllänen, 2020b). Critical thinking is a person's ability to compare two or more pieces of information, such as information received from outside with information that is already owned (Hammad & Al-Dajeh, 2023b). If there are differences or similarities, he will ask questions or comments to get further explanation. Critical thinking is often associated with creative thinking (Palacios-Bernuy et al., 2020).

Critical thinking is the process of using thinking skills effectively to help someone create, evaluate, and apply decisions based on beliefs or actions taken (Canuto, 2018).

Some thinking skills related to critical thinking include comparing, contrasting, estimating, drawing conclusions, influencing, generalizing, specializing, classifying, grouping, sequencing, predicting, validating, proving, connecting, analyzing, evaluating, and patterning (Hariyadi & Darmuki, 2023).

In short, critical thinking is the ability to use thinking skills effectively to make, evaluate, and implement decisions in accordance with beliefs or actions taken. Critical thinking skills include processes such as comparing, drawing conclusions, predicting, and evaluating, which help a person in careful and rational thinking.

3. Material and Method

The Scopus Base dataset was used as a research framework, and Biblimetric R software was used to process the data. This program is a statistical tool that facilitates bibliographic and co-citation analysis, making it suitable for various research activities (Saputra & Purnomo, 2023). Open source is a means by which R can be used freely. Quantitative methods can handle large amounts of data, but their usefulness varies (Khuluq et al., 2022)

Specifically, meta-analysis is used to synthesize empirical evidence by assessing the nature, magnitude, and relationships between effects. R software is a useful tool because of its built-in data exploration, statistical modeling, replication, and visualization capabilities (Croitoru et al., 2023). Therefore, this is not intended as a preliminary analysis, but rather to provide definitive answers to questions that have not yet been asked in research. To achieve this, a

bibliographic approach is used. This involves applying simple quantitative methods to bibliographic data from the Scopus database.

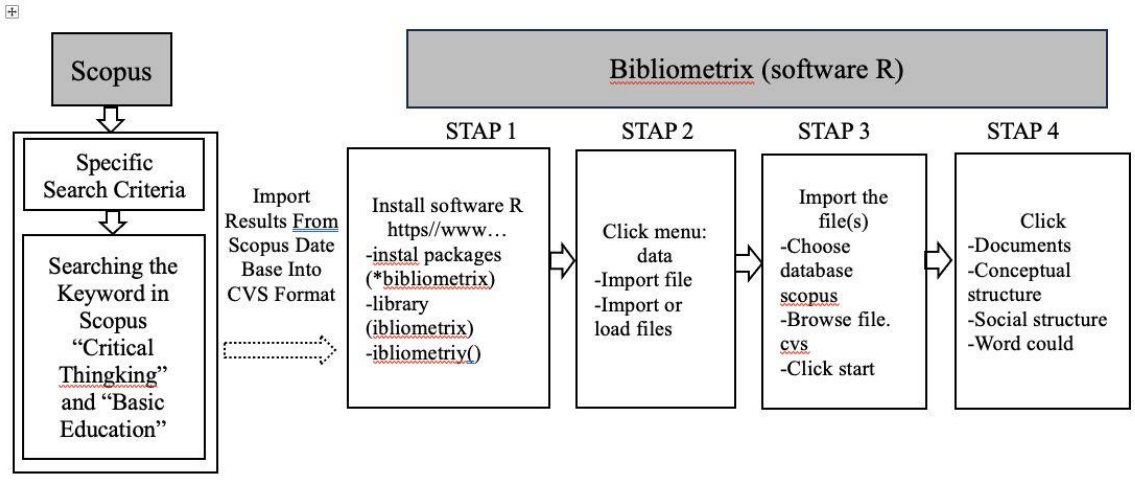
This research, which combines the terms "critical thinking" and "basic education" skills, resulted in 21 articles published in the last 20 years, namely 2014 to 2024 in well-known international journals.

By reviewing these references, researchers can gain insight into the theoretical and practical uses of bibliographic analysis in basic research. Basic research researchers consider bibliographic analysis an important and urgent topic for several reasons: the field of basic education research is growing and the use of bibliographic analysis can provide insight into emerging trends and patterns in research. Additionally, bibliographic analysis can offer a comprehensive review of the literature in journals electronics and other fields, providing information on leading scholars, journals and publications. Furthermore, the use of bibliographic analysis in educational research helps ensure that research efforts are well coordinated and resources are allocated effectively, and finally that, effective bibliographic analysis will become more important to researchers, policy makers, and practitioners as research-based research becomes more commonplace. evidence in the field of education(Ou et al., 2022).

Scopus has an extensive archive for collecting information on critical thinking and basic education. R software was used to visualize the bibliographic network, which comes from Scopus resources and is specifically designed for bibliography (Ou et al., 2022). Bibliographic analysis is used in this research to evaluate literature on critical thinking skills in basic education published in reputable international journals from 2014 to 2023 through statistical analysis.

Data were obtained from Scopus and analyzed using the R package BiblimetricX, as illustrated in Figure 1.

Figure 1. Bibliometric Study Design with R Software



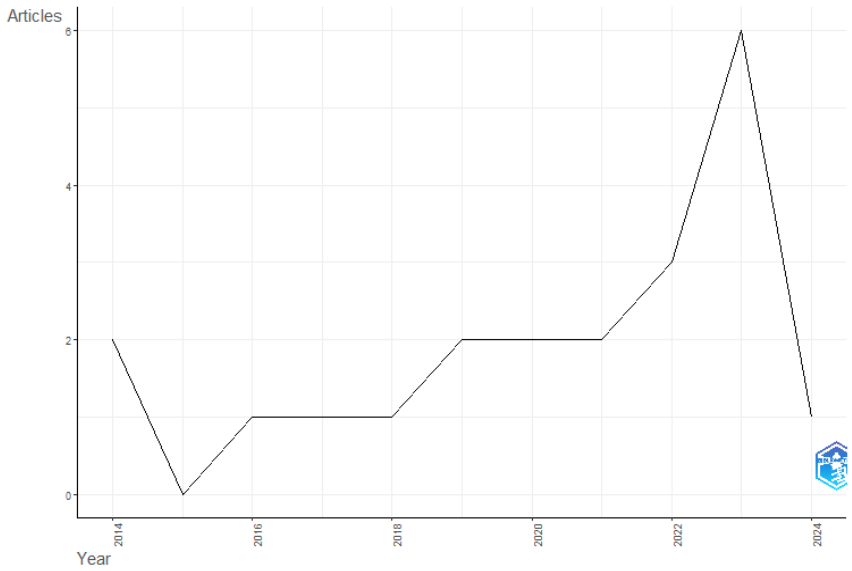
The bibliographic analysis design process shown in Figure 1 occurs in two stages. In the first stage, data is taken from Scopus by setting certain search criteria on the scopus.com site. When you search for keywords in Scopus, the results are downloaded in CVS format. In the second stage, the following steps are carried out using BiblimetricX R: 1) Install R software from the

website https: //www.bibliometrix.org/home/index.php/download and run the .packages installation command. (“bibliometrics”), 2) Load the library using the command “library(bibliometrix”). 3) Run biblioshiny() in your software. 4) Click "Data" in the menu, select "Import File" and proceed to "Import or Load File", 5) Select the Scopus database to import the raw file, browse to the CSV file, and click "Start". 6) Finally, click "Document", "Conceptual Structure", "Social Structure" and "Word Cloud" to visualize the image creation process.

4. Results and Discussion

Bibliometric studies are comprehensive methods used to examine and investigate large amounts of scientific data to identify trends and investigate the academic landscape of published literature. This analysis involves summarizing elements of research productivity, such as the number of publications and citations per year, and investigating publications by journal, research period, author, institutional affiliation, and country. Figure 2 below explains the scientific production of critical thinking articles in basic education from year to year.

Figure 2. Annual Scientific Production of Critical Thinking in Basic Education



The Scopus Database data provides information for the publishing actions shown in Figure 2. The 2024. There are two indicators, but there was a significant decline in 2015. From 2016 to 2018, the number of critical thinking indicators was relatively stable. Furthermore, there was an increase in two indicators in 2019 and 2020, which shows that efforts to improve critical thinking skills in basic education are being carried out in that period. This sense of stability continued in 2021. In addition, in 2022 there was another increase to three indicators, and in 2023 the number of indicators reached six indicators, increasing significantly. This increase could indicate the effectiveness of new policies and programs aimed at improving critical thinking skills among elementary school students. In 2024, the number of indicators is reduced significantly to only one indicator. Several reasons could have led to this decrease, including not yet completing 2024, adjustments made to the budget year, or other factors affecting program implementation. Overall, these data suggest that efforts to improve critical thinking

in basic education are still fluctuating and will peak in 2023. More detailed analysis is needed to understand the factors driving this change and to identify more effective factors for development strategy in the future.

A search of the Scopus database between 2014 and 2024 revealed that 10 important research papers on critical thinking in elementary education are identified in Table 1. This research aims to relate the main results of the ideas presented in these papers and to evaluate the impact of each paper on critical thinking in subjects and research areas in elementary schools. The results of the analysis in the table below reveal that education oriented towards developing critical thinking skills is becoming increasingly important in various countries. A problem-based approach, use of multimateriality, Cooperative Learning, and teaching philosophy from an early age are effective strategies in achieving this goal. However, proper implementation and ongoing support from various parties is needed to ensure the success of these approaches in diverse educational contexts. The following are research results based on articles quoted by researchers.

Table 1. 10 Most Cited Articles in Scopus Exploration Results

No	Author Name, Journal and year	Research result	Quotation amount
1	Delgado, V.V., Palet, J.E.Á,Silvia Lizett Olivares, O. Revista Mexicana de Investigacion Educativa, 21(69), pp. 557–581. 2016	This research successfully shows that problem-based learning in chemistry lessons in secondary schools is effective in improving students' critical thinking skills. This methodology not only helps students in developing evaluation skills but also in self-regulation, both of which are important components of critical thinking. Using a quasi-experimental design and mixed methods, this study provides strong evidence that problem-based learning can be an effective strategy to support the development of critical thinking skills among middle school students. Wider implementation of this approach in education could bring significant benefits to students' academic and personal development.	10
2	McClure, K.R. Compare, 44(3), pp. 472–492. 2014	This research shows that although Turkey's development plans reflect the rhetorical adoption of the capabilities approach, in practice, implementation of these principles remains limited. The equity, inclusion, participation and critical thinking that are at the core of the capabilities approach are less realized in education projects such as the World Bank's Basic Education Project. The focus on productivity and global competitiveness remains dominant, indicating the need for greater efforts to substantially operationalize the	8

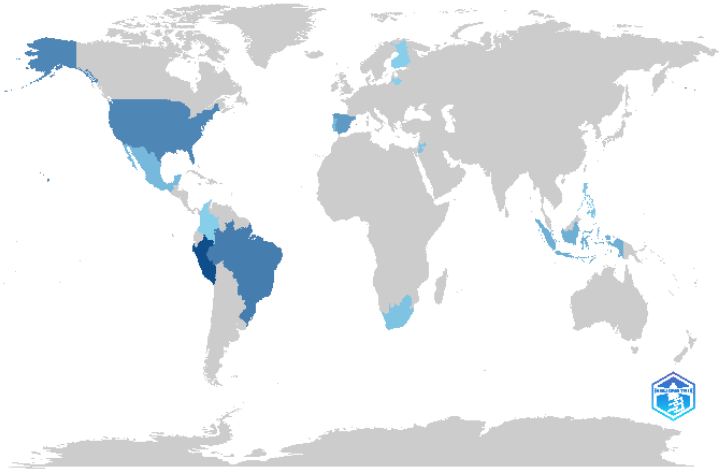
		capabilities approach in educational development projects in Turkey.	
3	Pöllänen, S.H. International Journal of Art and Design Education , 39(1), pp. 255–270. 2020	This research underlines the importance of the concept of multimateriality in breaking down gendered traditions in craft education in Finland. Although pedagogical challenges remain, multimateriality provides opportunities for diverse learning and the development of students' creativity and critical thinking. Non-gender-based and material-free learning in crafts can broaden students' views of the world of technology and culture holistically.	8
4	Silva, H., Lopes, J., Dominguez, C. Revista Lusofona de Educacao, 45(45), pp. 157–170. 2019	This research shows that Cooperative Learning (CL) is effective in developing the Critical Thinking skills of university students in Portugal, both in face-to-face and distance learning environments. These findings provide valuable insight into developing learning strategies that can meet student needs in an era of continuing education.	2
5	Janse van Rensburg, J., Rauscher, W. International Journal of Technology and Design Education , 32(4), pp. 2151–2171 2022	This research illustrates the importance of the design process in developing Critical Thinking (CT) dispositions in students in the context of technology lessons. Teachers use a variety of strategies to integrate CT-encouraging learning in the classroom environment. These findings provide a basis for further research in the development of more effective teaching strategies to develop CT in students.	2
6	Marquez, L. Policy Futures in Education , 2017, pp. 1–16 2017	This research provides a well-organized argument for introducing early philosophy teaching in the Philippines. The author effectively presents the benefits that can be gained from philosophy education in developing students' critical and analytical thinking skills, as well as in opening their horizons to new ideas. This argument is supported by strong logic and a clear understanding of the value of philosophy in the context of education and community development.	2
7	Grinkevičius, K. Pedagogika , 113(1), pp. 132–147 2014	The textbook adopts a constructivist approach with learning activities that encourage critical thinking, information seeking, and collaboration. Topics related to current issues and the latest technological discoveries make the material more relevant and interesting for students. This modern textbook is designed to not only convey knowledge but also build important skills relevant to real life and the	1

		world of work. The constructivist approach and innovative application of didactic principles make this textbook an effective tool for 21st century education.	
8	Rodrigues, F.W.A., Ramos, A.B.B. International Journal of Emerging Technologies in Learning, 2(1), pp. 47–60. 2019	This research confirms the importance of Scientific Methodology in higher education and recommends its implementation since Elementary Education. With scientific methods, students are able to improve their academic and professional skills, which has a positive impact on their personal and social lives. This shows that investment in teaching scientific methods at all levels of education is critical.	1
9	Canuto, A.T. Childhood and Philosophy , 14(30), pp. 427–452 2018	This research shows that P4C is an effective approach to improve critical thinking skills in elementary school children in the Philippines. With wider implementation and proper training for teachers, P4C has the potential to bring about significant change in the basic education system. Recommendations to adopt P4C in curriculum and teacher training will ensure that the benefits of this pedagogy are widely felt.	1
10	Palacios-Bernuy, E. , Ocaña-Fernández, Y. , Valenzuela-Fernández, L.A. International Journal of Early Childhood Special Education, 12(1), pp. 398–405 2020	The API program implemented in regular elementary education in Lima shows that the scientific inquiry instilled in students not only improves their research abilities but also sharpens critical thinking skills. Scientific inquiry includes many aspects of critical thinking, such as reasoning, analysis, and evaluation, which are important for the development of students' critical thinking skills. Thus, the API program is effective not only in developing scientific inquiry capacity but also in cultivating students' critical thinking abilities.	1

Based on data from the Scopus database regarding the scientific production of critical thinking skills in basic education in various countries, Peru occupies the top position with 14 publications, indicating that this country has very productive authors in this field. Significant contributions also came from Brazil and the USA, with 9 and 8 publications respectively, reflecting the strong research traditions and educational programs supporting research in these two countries. Spain (6 publications) and Indonesia (4 publications) also showed significant contributions, although not as big as the top three countries. Additionally, Mexico and Portugal each had 3 publications, indicating steady interest in critical thinking skills research in elementary education. Countries such as Jordan, the Philippines, and South Africa, with 2 publications each, indicate the presence of several active researchers in this field. Meanwhile, Colombia, Finland, and Lithuania each had 1 publication, indicating smaller but persistent efforts and interest in this research. Overall, these data show that research on critical thinking skills in primary education is spread across countries, with some countries showing greater

contributions than others. Scientific production with the keyword critical thinking in basic education is shown in Figure 3.

Figure 3. State Scientific Production



Based on the data presented, research on critical thinking skills in basic education shows several main focuses. The topics "critical thinking", "curriculum", and "education" each appeared three times, indicating that the integration of critical thinking skills in the curriculum and educational process was the main focus of the research. This shows that research prioritizes how critical thinking skills are integrated with the curriculum and educational processes. The importance of education in developing critical thinking skills is a major focus of attention. In addition, topics such as "article", "basic education", "Brazil", "child", "educational status", "emergency health services", "health education", "human", "humans", and "leadership" appeared twice, indicating that the research does not only focus on basic education and children, but also includes emergency health education contexts, educational status, and leadership aspects.

The country of Brazil emerged as a topic, indicating the country's significant contribution to this research. Additional topics such as "academic training", "adult", "allied health personnel", "care behavior", "child (preschool)", "classroom environment", "comfort", "communication", "communication skills", "controlled study", "critical thinkings (CT)", "design", "design process", "discente", "educacao basica", "feeding behavior", "graduacao", "graduation", "health care personnel", "human experiment", "interpersonal communication", "mentor", "nurse", "nutrition education", "paramedical personnel", "patient care", "pesquisa", "practice guideline", "preschool child", "primary school", "professional aspects", "public policy", "qualitative research", "school", "school health service", "schools", and "scientific method" appear once, reflecting the broad scope of research involving various aspects of education, health, communication, and scientific methodology. Next "Qualitative Research" and "Controlled Study" The presence of qualitative research methods and controlled studies shows a varied approach to studying critical thinking skills.

This methodology allows a deep and comprehensive understanding of how critical thinking skills are developed and applied in elementary education. Research on critical thinking skills in elementary education emphasizes the importance of integrating these skills into the curriculum and educational processes. The data shows that the main focus of the research is

how critical thinking skills can be developed and applied effectively in basic education. The significant contribution of various contexts such as emergency health education, educational status, and leadership shows that critical thinking skills are relevant in various fields. Brazil stands out as a major contributor to this research. The research includes diverse populations and contexts, demonstrating a holistic approach to learning critical thinking skills. Varied methodologies, including qualitative research and controlled studies, allow for a comprehensive understanding. Specific aspects such as communication and leadership skills are also highlighted, emphasizing the importance of these skills in the development of critical thinking skills. Overall, these data show that research on critical thinking skills in primary education is a complex and broad field, with contributions from a variety of countries and contexts. This research is important for developing effective educational policies and programs to improve critical thinking skills among basic education students.

Figure 4. Critical Thinking and Elementary Education Wordcloud

5. Conclusion, Implication, and Recommendation

The Scopus database from the last 20 years from 2014 to 2024 contains 21 articles that were analyzed to identify and classify subjects related to critical thinking in basic education. Using BibliometriX R software, the data is displayed in five main aspects namely: annual scientific production trends, most cited papers, distribution of scientific production by country, and co-occurrence network. The results of the analysis confirm the importance of this research in formulating effective educational policies and programs to improve critical thinking skills in elementary school students. For an effective educational program to improve critical thinking skills in elementary school students, important steps must be taken. First, critical thinking skills must be thoroughly integrated into the basic education curriculum, ensuring every subject provides opportunities for students to develop these abilities. Second, teachers need to be specially trained to teach critical thinking skills and provide constructive feedback. Furthermore, it is important to teach critical thinking skills in a multidisciplinary context, allowing students to see connections between subjects. Collaboration with external parties such as health institutions and leadership organizations is also needed to expand the application of

critical thinking skills. Finally, further research is needed to better understand the effectiveness of various approaches in developing critical thinking skills. With this holistic approach, educational policies and programs can be designed to prepare students to become active, critical learners and ready to adapt to a complex society.

6. Acknowledge

The author is conducting preliminary research for a doctoral dissertation. Additionally, the authors would like to thank their supervisors and co-promoters for their contributions. Thank you for the support that helped the author in writing this article. This research was privately funded.

7. References

Canuto, A. T. (2018). Developing children's reasoning and inquiry, concept analysis, and meaning-making skills through the community of inquiry. *Childhood and Philosophy, 14*(30), 427–452. https://doi.org/10.12957/childphilo.2018.28144

Croitoru, I.-M., Spiridon, C.-A., Bratiloveanu, F.-I., Arlet, A.-C.-I., & Jumanca, R. (2023). Technology Transfer – Bibliometric Analysis of Scientific Articles in the Web of Science. *Annals of Dunarea de Jos University of Galati. Fascicle I. Economics and Applied Informatics*, *29*(2), 138–145. https://doi.org/10.35219/eai15840409348

Delgado, V. V, Palet, J. E. Á., & Silvia Lizett Olivares, O. (2016). Problem-based learning in chemistry and critical th inking in secondary school. *Revista Mexicana de Investigacion Educativa*, *21*(69), 557–581.

Encabo-Fernández, E., Albarracín-Vivo, D., & Jerez-Martínez, I. (2023). Evaluative research on the critical thinking of primary school students. *International Journal of Educational Research Open*, *4*. https://doi.org/10.1016/j.ijedro.2023.100249

Firdaus, T., Ahied, M., Qomaria, N., Putera, D. B. R. A., & Sutarja, M. C. (2022). THE IMPLEMENTATION OF SETS INTEGRATED WITH BYOD TO INCREASE STUDENT'S CRITICAL THINKING SKILL ON VIBRATION AND WAVE STUDY. *Jurnal Pembelajaran Sains*, *6*(1).

Hammad, M. Y., & Al-Dajeh, H. I. (2023a). An Analytical Study of Music Education Curriculum for Basic Education in Jordan According to the Twenty-First Century Skills. *Dirasat: Human and Social Sciences*, *50*(5), 267–278. https://doi.org/10.35516/hum.v50i5.276

Hammad, M. Y., & Al-Dajeh, H. I. (2023b). An Analytical Study of Music Education Curriculum for Basic Education in Jordan According to the Twenty-First Century Skills. *Dirasat: Human and Social Sciences*, *50*(5), 267–278. https://doi.org/10.35516/hum.v50i5.276

Hariyadi, A., & Darmuki, A. (2023). The Effectiveness of PBL Collaborated with PjBL on Students' 4C in the Course of Basic Education. *International Journal of Instruction*, *16*(3), 897–914. https://doi.org/10.29333/iji.2023.16348a

Hariyadi, A., Dumiyati, D., Tukiyo, T., & Darmuki, A. (2023). The Effectiveness of PBL Collaborated with PjBL on Students' 4C in the Course of Basic Education. *International Journal of Instruction, 16*(3), 897–914. https://doi.org/10.29333/iji.2023.16348a

Hayati, N., & Berlianti, N. A. (2020). Critical Thinking Skills of Natural Science Undergraduate Students on Biology Subject: Gender Perspective. *Journal of Biological Education Indonesia* .

Irwandi, F., Sayono, J., & Hudiyanto, R. R. (2021). The Development of Supplementary Teaching Material for Ibnu Hadjar's Biography to Improve Collagers' Critical Thinking Skills of History Education. *Jurnal Pendidikan: Teori, Penelitian, Dan Pengembangan*, *5*(10), 1513. https://doi.org/10.17977/jptpp.v5i10.14141

Janse van Rensburg, J., & Rauscher, W. (2022a). Strategies for fostering critical thinking dispositions in the technology classroom. *International Journal of Technology and Design Education*, *32*(4), 2151–2171. https://doi.org/10.1007/s10798-021-09690-6

Janse van Rensburg, J., & Rauscher, W. (2022b). Strategies for fostering critical thinking dispositions in the technology classroom. *International Journal of Technology and Design Education*, *32*(4), 2151–2171. https://doi.org/10.1007/s10798-021-09690-6

Khuluq, H., Widiastuti, T. C., & Fitri, D. (2022). A Bibliometric Analysis of COVID-19 Researches: Omicron Variant. *Urecol Journal. Part C: Health Sciences*, *2*(1), 1–8. https://doi.org/10.53017/ujhs.132

Leon, J. A. V. De, & Culala, H. J. D. (2019). Issues on sustainability in education: the Philippine basic education curriculum conundrum. *Jurnal Kemanusiaan*.

Maldonado, L., Farias, S. C., De Jesus Damiao, J., Castro, L. M. C., Da Silva, A. C. F., & De Castro, I. R. R. (2021). A proposal for food and nutrition education integrated into the preschool and elementary school curriculum. *Cadernos de Saude Publica*, *37*. https://doi.org/10.1590/0102-311X00152320

Marquez, L. (2017). Philosophy in basic education: Towards the strengthening of the foundations of Philippine education. *Policy Futures in Education*, *2017*, 1–16. https://doi.org/10.1177/1478210317743650

Mutakinati, L., Anwari, I., & Kumano, Y. (2018). Analysis of Students' Critical Thinking Skill of Middle School through STEM Education Project-Based Learning. *Jurnal Pendidikan IPA Indonesia*, *7*(1), 54–65. https://doi.org/10.15294/jpii.v7i1.10495

Nurasiah, I., Marini, A., Nafiah, M., & Rachmawati, N. (2022). Nilai Kearifan Lokal: Projek Paradigma Baru Program Sekolah Penggerak untuk Mewujudkan Profil Pelajar Pancasila. *Jurnal Basicedu*, *6*(3), 3639–3648. https://doi.org/10.31004/basicedu.v6i3.2727

Oktaviani, A. M., Rokmanah, S., & Nurma'ardi, H. D. (2022). PENERAPAN PROBLEM BASED LEARNING UNTUK MENGEMBANGKAN KEMAMPUAN BERPIKIR KRITIS MAHASISWA. *Pelita Calistung*, *3*(02), 1–11.

Orr, L., Stevens, L., McCotter, E., Peterson, A., Brant, J. M., & Thompson, S. J. (2023). ATTAC! Development of a Novel Advanced Trauma Team Application Course. *Journal of Trauma Nursing*, *30*(2), 115–122. https://doi.org/10.1097/JTN.0000000000000711

Ou, Z., Qiu, L., Rong, H., Li, B., Ren, S., Kuang, S., Lan, T., Lin, H., Li, Q., Wu, F., Cai, T., Yan, L., Ye, Y., Fan, S., & Li, J. (2022). Bibliometric Analysis of Chimeric Antigen Receptor-Based Immunotherapy in Cancers From 2001 to 2021. *Frontiers in Immunology*, *13*. https://doi.org/10.3389/fimmu.2022.822004

Palacios-Bernuy, E., Ocaña-Fernández, Y., & Valenzuela-Fernández, L. A. (2020). Effect of the API Program on the Scientific Inquiry of students in regular basic education in Lima. *International Journal of Early Childhood Special Education*, *12*(1), 398–405. https://doi.org/10.9756/INT-JECSE/V12I1.201019

Pérez Estrada, M. T., Garay Argandoña, R., & Hernández, R. M. (2023). Autodesarrollo del pensamiento crítico y la práctica reflexiva en docentes de educación primaria con vivencias de riesgo sanitario. *Boletín de Malariología y Salud Ambiental*, 106–112. https://doi.org/10.52808/bmsa.8e7.631.014

Pöllänen, S. H. (2020a). Perspectives on Multi-Material Craft in Basic Education. *International Journal of Art & Design Education*, *39*(1), 255–270. https://doi.org/10.1111/jade.12263

Pöllänen, S. H. (2020b). Perspectives on Multi-Material Craft in Basic Education. *International Journal of Art and Design Education*, *39*(1), 255–270. https://doi.org/10.1111/jade.12263

Saputra, C. S., & Purnomo, A. R. (2023). Analisis Bibliometrik dari Ketrampilan Proses Sains dan Experiential Learning pada Tahun 2020-2021. *JURNAL PENELITIAN PENDIDIKAN*.

Westlund, A. C. (2022). Education for autonomy, and for care: a comment on Asha Bhandary's Freedom to Care. *Critical Review of International Social and Political Philosophy*, *25*(6), 820–826. https://doi.org/10.1080/13698230.2021.1922861