The Role of Philosophy of Science in Scientific Advancement: A Systematic Literature Review

Helita[1], Ice Linsa Sari[2], Yulia Septemi[2], Supri Yadi[3], Yesmi Elesti[4]
[1]SDN 123 Seluma, Bengkulu, Indonesia, [2]SMPN 24 Kaur, Bengkulu, Indonesia, [3]SDN 5 Seluma, Bengkulu, Indonesia, [4]SMAN 5 Bengkulu Tengah, Bengkulu, Indonesia

Corresponding author e-mail: theli3201@gmail.com

Abstract: This study explored the role of the Philosophy of Science in scientific as the foundation for the advancement and development of scientific knowledge, particularly in addressing life's problems that cannot be solved by empirical science alone. The research employs a Systematic Literature Review (SLR) approach to collect and analyze data from research articles, scientific journals, and relevant books that discuss the development and interrelation between philosophy and science. The review findings indicate that the Philosophy of Science plays a crucial role in bridging the gap between philosophical inquiry and scientific practice. It continues to grow within its boundaries while maintaining its essence as a source of radical criticism and substantial reasoning. The study highlights that philosophy serves as a critical dialogue partner for science, offering reflective insights that help scientists understand and refine their methodologies and theoretical assumptions. This study emphasizes the balanced position of philosophy among the sciences, showing its relevance not only as a theoretical discipline but also as an integral element in shaping the direction and ethics of scientific progress. This research contributes to a deeper understanding of how philosophical reflection enhances the autonomy and specificity of science, reaffirming the significance of the Philosophy of Science as both a foundation and a guide in the evolution of scientific thought.

Keywords: Advanced of Science, System Literature Review, Philosophy of Science

A. Introduction

The philosophy of science is a branch of philosophy that examines the foundations, methods, and implications of science. It emphasizes critical and logical reasoning in addressing problems and generating knowledge. In the current era of rapid technological transformation, the Philosophy of science has become increasingly relevant as advancements in areas like artificial intelligence (AI) and biotechnology raise complex ethical and epistemological questions that require philosophical analysis. Research paradigm for business research in the transformative age of automation, digitalization, hyperconnectivity, obligations, globalization and

sustainability (Lim, 2023). As knowledge obtained through a systematic process known as the scientific method, it distinguishes scientific inquiry from other forms of human thought. The philosophy of science is therefore deeply concerned with progress, discovery, and the evolution of knowledge throughout history.

In the current era of rapid technological transformation, the philosophy of science has become increasingly relevant across diverse academic fields such as art, cultural studies, political science, and fashion, reflecting the interdisciplinary nature of modern science. Stereotypes and Imaginaries of Italian's in Online Communication by Fashion Brands Italy, an Extraordinary Commonplace Stereotypes and Imaginaries of Italian's in Online Communication by Fashion Brands A (Piancazzo et al., 2024). Within the educational domain, it also plays a pivotal role in integrating technology with learning, as seen in studies exploring the use of mobile technologies to enhance English as a Second Language (ESL) writing education. Mobile Technology for Enhanced ESL Writing Education A Systematic Review of Benefits and Pedagogical Innovations (Yasmin Khairani Zakaria et al., 2025) Furthermore, philosophical inquiry contributes to the development of creative literacy and innovation, supporting epistemological, ontological, and axiological growth in education. The Influence of Financial Literacy , Financial Attitudes , and Personality on Financial Management Behavior of SME in Banyu MAs Regency (Rahmawati et al., 2024). Very influential in the progress of education.

The influence of the philosophy of science extends beyond education to fields such as finance, where digital financial inclusion has become a factor that supports scientific and educational advancement A dynamic bibliometric analysis of financial inclusion and happiness with Cite Space (Yang et al., 2024). Likewise, the emergence of artificial intelligence (AI) and large language models has introduced new dimensions to philosophical practice, including philosophical counselling and reflective learning NTIRE 2025 Challenge on Real-World Face Restoration : Methods and Results (Chen et al., 2025). At the same time, philosophy continues to serve as a reflective medium for understanding the relationship between science, religion, and history, contributing to a more comprehensive and ethical, interpretation of human knowledge Capitalizing on natural resources rent and renewable energy in enhancing economic growth new evidence with MMQR method (Kadir et al., 2024).

The progress of science is also deeply linked with teaching and learning practices. Studies have shown that contextual and blended learning approaches enhance students' engagement and learning outcomes in English. The effectiveness of using the contextual teaching and learning model improving student' English learning outcomes (Dethan & Modok, 2024). These findings illustrate that philosophy of science is not merely theoretical, but also applicable in practical education settings to promote critical and reflective learning. In Indonesia, this philosophical foundation is essential for the advancement of science education, encouraging the development of

interactive, innovative, and critical learning environments integration of the project integration of the project based learning (PJBL) model supported by woodwall interactive media in economics education (Julita et al., 2025). Despite the growing body of literature, a significant research gap remains. While the theoretical importance of the philosophy of science is widely recognized, there is a lack of synthesized empirical evidence mapping its concrete roles across contemporary disciplines, particularly in relation to science and education. Therefore, this Systematic Literature Review (SLR) aims to address this gap by answering the following research question: What are the primary roles of the philosophy of science in advancing scientific knowledge and practice as evidenced by recent scholarly literature?

B. Methods

In this study, we used a Systematic Literature Review approach to find, study, and analyze the science of philosophy, such as the function of philosophy of science in developing educational progress. This Systematic Literature Review method is used to identify, research, evaluate, and interpret research in the field of study of phenomena of interest, and can contribute to the world of education. Here you should answer the research question. And give discussion, at least 15 journal articles which support your results and 1-3 previous finding not support. (Wahyudin & Rahayu, 2020). In this study, we used a qualitative approach with a systematic literature review method. We collected data through journals discussing philosophy. The SLR method was implemented by reviewing and identifying data sources according to predetermined steps and procedures. In this study, we followed the following steps:

1. Discovery and Identification of keywords, to examine the philosophy and idealism to The Role of Philosophy of Science for the Advancement of Science in a Systematic Literature Review Education Reviewed from the Understanding the philosophy of science and its scope philosophy of science (Reyvani et al., 2025)
2. Literature search strategy This process involves searching for Literature in the basic data of Education
3. Selection Process Initial identification is carried out, we conduct a gradual selection by reading the title and abstract, followed by a full review of the selected articles or journals
4. Data Extraction by conducting Important information from selected studies is systematically
5. Analysis and Synthesis The extracted data is then used by the author using a qualitative approach to identify the main themes, trends and gaps in the literature.
6. Reporting the SLR Results that have been compiled by the author in a systematic format that is useful for providing a clear picture of the findings, implications, recommendations for future research

Identifying and Defining Keywords

We took precise steps one by one, such as identifying key concepts using relevant keywords to understand the role of philosophy of science in advancing scientific knowledge. Keywords used included: Advanced Science, Literature Review System, Philosophy of Science.

Literature Search Strategy

We conducted a process by reviewing philosophical knowledge using relevant academic data-based literature to obtain quality sources or references that were relevant to their use. They also collected data from various sources, including platforms like Google Scholar, journal articles, and Sci hub.

Literature Selection Process

During the initial identification process, the we used the following steps: 1) the first step is initial screening: Selecting relevant articles for use based on the role of philosophy of science in advancing and developing science; 2) we conducted an in-depth review: Reading and understanding the articles to ensure they were relevant and made a significant contribution to this research; 3) Inclusion and Exclusion Criteria: a) Inclusion: Articles published in the last five years (2021-2025), from peer-reviewed journals, and discussing the philosophy of science in the context of scientific and technological developments; and b) Exclusion: Articles not from indexed academic journals and not specifically discussing the philosophy of science in the development of science and technology.

Data Extraction

We systematically collect important information from selected studies, including:
  a. Details of the Study Methodology (type of research and approach used
  b. Main Findings
  c The contribution of each study to the understanding of the philosophy of science in science and technology

Data Analysis and Synthesis

The data used for analysis used qualitative methods to understand and identify key themes, trends, and gaps in existing literature. Aspects analyzed include: 1) How the philosophy of science shapes scientific paradigms; 2) Implications of the philosophy of science in scientific for advancing science and its development; 3) The impact of epistemology, ontology, and axiology on scientific progress.

Results Report

The results of the Systematic Literature Review are structured to provide a clear overview of relevant issues: The contribution of the philosophy of science to the development of science and technology, Implications and relevance of the findings for further research,
Recommendations for the development of future studies in the philosophy of science. This method is expected to provide a deeper understanding of the role of the philosophy of science in guiding the development of science.

C. Result and Discussion

The term philosophy comes from two syllables in Ancient Greek, namely Philbin and Sophia. Etymologically, philosophy is love and wisdom. Operationally, philosophy has two meanings, namely as a process (philosophy) and as a result of philosophy (a system of theory or thought). Two of the five definitions of philosophy are put forward by the Philosophical Basis of Idealism and the Implementation of the Independent Learning Curriculum (Muslim, 2023). Based on the analysis carried out by us on 15 journals that met the criteria, we display the results in the following table

Table 1. Results of the Review of Mapping Journal Article Data with Related Research

No	Title	Author	Objects	Methods	Major Discoveries	Conclusion
1	Philosophy as the basis for the development of science	(Khairul M, 2024)	State Islamic University of North Sumatra.	Qualitative research with a literature study approach	This research uses library research method, which is a method of collecting data through reading and reviewing books and literature related to the research theme. In conclusion, it can be recognized that the philosophy of science is not only a theoretical mirror of science	The challenge of having a philosophical theory is abstract, but it also has a significant practical impact on advancing science.
2	The Concept of Progressivism Philosophy in the Development of the Independent Curriculum at SMAN 1 Sukanagara	(Handayani et al., 2024)	SMAN 1 Sukanagara	The research method Qualitative	The result of this study indicates that the tutoring program implemented at TAMSISKU contains religious, disciplined, honest, creative, friendly, innovative, and environmentally conscious values that can be internalized by students in the school.	TAMSISKU provides learning support that doesn't tend to be a center, but rather a partner in the knowledge transfer process.
3	The Contribution of Philosophy of Science and Ethics to Social Life in the 5.0 Era	(Vanny et al., 2024)	literature analysis	The research method Qualitative and quantitative approaches to provide a comprehensive analysis	The philosophy of science provides a deeper understanding of the philosophy behind technological progress	The philosophy of science and ethics plays a central role in managing technological progress in the 5.0 era. They not only help understand the essence of technology and its limitations, but also consider its impact on

					society and the environment.
4	The development of micro-teaching module for online learning	(Megawati & Trisnawati, 2022)	Participant, teacher, student and instrument	The research method quantitative analysis.	In this study, this research can be used as a guide for online microteaching or study in the classroom.	This article meets the requirements of education in the digital era. This article is designed to help students and lecturers develop their teaching and learning skills more effectively, creatively, and innovatively.
5	Philosophy of future: analytical overview of interaction between education Science and artificial intelligence in the context of contemporary challenges	(Storozhyk, 2024)	The study involved 42 participants that were selected randomly and selected criteria concerned educational background, previous and experience representation of diverse perspectives, theories or approaches within the philosophy.	The research quantitative and qualitative data was collected through descriptive and empirical survey	Philosophical category of future always interconnected with a number of concaves in different area education, digital and technologies.	The article is connected to interpret the future interaction between education, science, AI and to outline their potential challenges transformations digital
6	Philosophy of science and research paradigm for business research in the transformative age of automation,	(Lim, 2023)(Lestari et al., 2025)	Business transformative	This research uses a qualitative approach	The research application indicates that in order for a science to have valid scientific objects and methods	this article covers three main aspects: Ontological Aspect: Concerning the nature of the objects being researched for the advancement of scientific

	digitalization, hyperconnectivity, obligations, globalization and sustainability				development.
7	Prophetic Framework in Educational Evaluation: A Qualitative Study on Minimum Competency Assessment in Indonesia.	(Lismawati et al., 2024)	Assessment Result Islamic Scholarship.	This research uses a qualitative methodology, utilizing a literature review and discourse analysis.	The research authoritative learning evaluation for student and educators requires a universal paradigm that is widely acceptable in terms of its values	This article assessment result to Advancement of Science in the Islamic Scholarship.
8.	Perspectives on the Philosophy of education Progressivism in Learning Models Ubiquitous Learning	(Naatonis et al., 2022)	Student and School	This research method used in this study uses a qualitative method with a literature review approach.	The development of technology penetrates into all sectors of life, including in the field where in principle education is a process of transferring material information from educators to students.	TPACK-based blended learning is more about developing learning methods to keep up with technological advances and the environment.
9.	Sir Francis Galton's Philosophy Measurement Science and its Relevance for the Development of the Psychometric Paradigm.	(D. Y. Nugraha & Kuswanjono, 2024)	Specific actions in specific situations and to assess the validity of assumption in the context of modern psychometrics.	This research Literature Review	This result of this study indicates that Gaton's assumptions about the ability to measure mental attributes through specific measures in specific situations are flawed.	In this context, the same cause does not always produce the same effect across causal contexts, and conversely, different causes can produce the same effect in different contexts. The relationship between observable measurements and aspects of an

No	Title	Author				
						individual's character is not always clear, so indirect indices of mental attributes tend to be ambiguous
10.	Development of Philosophy of Science in Management in the Digitalization.	(Alicia Hanna Fadilla et al., 2025)	This research is about the role of philosophy of science in the development of supply chain management science in the era of digitalization.	This research qualitative approach.	The development of a philosophy of science in management in the digitalized era provides an essentials conceptual framework to understand and direct the changes that occur.	Strengthening epistemology, ontology and axiology in managerial practice, organizations can face the challenges of digitalization more adaptively, innovatively and ethically
11.	Universitas Muhammadiyah Sumatra Barat, Indonesia Tanwir Arabiya; Arabic as Foreign Language Journal a Philosophical Understanding of the Arabic Language. Acquisition Process in Early Childhood: A Philosophy of Language Perspective and its Implications.	(Zulfida et al., 2024)	RA in Bintang Regency.	Qualitative approach with a case design or data were collected through in det interviews students.	This study shows application of philosophy of language particularly pragmatics, semantics and hermeneutics approaches plays a significant role in supporting early childhood Arabic language acquisition.	The pragmatic approach emphasizes learning through real-life contexts, such as role playing and interactive dialogues which give children handsome experience in understanding language use.

12.	The Role of Islamic Education in positive Social Transformation amidst Technological Advancements	(Suratin et al., 2024)	Study Humans are both social and individual beings, endowed with abilities that surpass those of other creatures	Qualitative approach.	This study uses a qualitative method of literature study with a descriptive and narrative approach, as well as data collection techniques through text analysis related to relevant sources, descriptive into a systematic article.	The conclusion of the study show that social transformation and education are two elements that cannot be separated. Education focus on the development of knowledge, but also integrates moral and ethical values and encourages.
13.	Implementation of Digital Teaching Material Containing Local Wisdom Values for Strengthening Pancasila Student Profile Project (P5) of Curriculum Merdeka in Social Studies Learning	(Holilah et al., 2024)	SMPN 10 Bandung	Qualitative descriptive Methods with questionnaires and interview instruments	The Teachers develop various P5 implementation strategies starting from developing learning plans in the form of project modules, developing varied learning students.	Profile Students Profile Project (P5) implementation is very open to various learning components and requires creative collaboration between teachers, student and schools.
14.	Accountability of Leaders of Religion, Philosophy, Psychology and Sociology Based Education.	(D. Nugraha & Agusti, 2023)	Teacher, students and schools.	This research us a descriptive qualitative approach, data is collected using library research techniques.	Educational accountability is the act of realizing accountability in the process of educational actions to achieve success and improve the quality of education	To advance and develop science, there is an educational accountability such as faith-based accountability, philosophy-based accountability, psychology-based accountability and sociology-based, all of which have the goal of advancing education.

| 15. | TPACK-based blended learning as an implementation of progressivism education: A Systematic literature review. | (Albeta et al., 2023) | Teacher and Students | This research Literature Review | The concept of blended learning is based on TPACK and progressivism philosophy from a curriculum point of view. | This learning that uses blended learning to combines media in learning or combines a pedagogical approach study |

Based on the research that the author has conducted by review 15 journals that have met the criteria, author can show by going through the learning process called philosophy, starting with astonishment and dissatisfaction, asking question and then the philosopher's doubts about something he experienced. Therefore, in philosophy, philosophers do not think based on existing assumptions, but rather test existing assumptions. In addition, philosophical or philosophical thinking is contemplative. Where thought expresses something that is thought or speculative thinking. Which is thinking outside of existing facts to reveal something that exist behind the visible, also called radical thinking. Philosophy and education are is intertwined as is the relationship between two sides of a coin, that is two aspects of the essence of one because is essentially a practical application of philosophy. The philosophy of education spiralizes in the problem of education as an object of study divided into three problems ontological, epistemological and axiological.

D. Conclusions

This Systematic Literature Review (SLR) aimed to explore and clarify the primary roles of the philosophy of science in advancing scientific knowledge and practice. The findings demonstrate that the philosophy of science serves as an epistemological foundation that helps formulate valid, systematic, and measurable research methods thereby enhancing the reliability of scientific knowledge. Furthermore, it acts as an ethical guide, ensuring that scientific and technological progress remains aligned with moral, social, and environmental considerations. The review also highlights the importance of critical reflection and interdisciplinary dialogue between philosophers, scientists, and technology practitioners. Such collaboration ensures that innovation remains both ethically grounded and socially responsible. Through this integrative approach, philosophy contributes to addressing complex global challenges such as climate change, the energy crisis, social inequality, and the ethical use of digital technology. Future research should employ empirical and mixed-method approaches to quantify the impact of philosophical frameworks on scientific innovation and education. Investigating how philosophical training influences our ethical decision-making and methodological rigor could further strengthen the bridge between theory and practice. In conclusion, the philosophy of science plays a vital role in maintaining the balance between innovation, ethics, and human welfare. By grounding scientific progress in philosophical reflection, it ensures that the development of science and technology continues to serve humanity—enhancing the quality of life, promoting global solidarity, and fostering a more just and sustainable future.

E. Acknowledgement

References

Albeta, S. W., Firdaus, L. N., Copriady, J., & Alimin, M. (2023). TPACK-based blended learning as an implementation of progressivism education: A systematic literature review. *Jurnal Pendidikan Vokasi*, *13*(1), 44–59. https://doi.org/10.21831/jpv.v13i1.51287

Alicia Hanna Fadilla, Susi Yusfika Panjaitan, Fahmi Azhar Nasution, Muhammad Dahriansyah, & Siti Mujiatun. (2025). Development of the Philosophy of Science in Management in the Digital Era. *Jurnal Manajemen Dan Pendidikan Agama Islam*, *3*(2), 89–99. https://doi.org/10.61132/jmpai.v3i2.964

Chen, Z., Wang, J., Liu, K., Chun, H., Park, H., Wang, S., Lee, J., Lee, C., & Hsu, C. (2025). *NTIRE 2025 Challenge on Real-World Face Restoration : Methods and Results*. 1536–1547.

Dethan, Y. D., & Modok, R. H. (2024). The Effectiveness of Using the Contextual Teaching and Learning Model in Improving Students' English Learning Outcomes. *Bilingual : Jurnal Pendidikan Bahasa Pengembangan Filsafat Ilmu dalam Manajemen di Era DigitalisasiInggris*, *6*(1), 79–85. https://doi.org/10.36985/fpa4f475

Handayani, S., Muchtar, H. S., Puspita, R., Juningsih, J., & Anwar, R. (2024). The Concept of Progressivism Philosophy in the Development of the Independent Curriculum at SMAN 1 Sukanagara. *Jurnal Visionary : Penelitian Dan Pengembangan Dibidang Administrasi Pendidikan*, *12*(1), 116. https://doi.org/10.33394/vis.v12i1.10542

Holilah, M., Nur, M., Hardianti, R. A., & Aulia, Q. (2024). The Innovation of Social Studies Journal Implementation of Digital Teaching Material Containing Local Wisdom Values for Strengthening Pancasila Student Profile Project (P5) of Kurikulum Merdeka in Social Studies Learning. *The Innovation of Social Studies Journal*, *5*(2), 121–131.

Julita, E., Glasser, J. P.(2025). *Integration of the Project-Based Learning (PJBL) Model Supported By Wordwall Interactive Media In Economics Education : 226*, 226–238.

Kadir, M. O., Deka, A., & Seraj, M. (2024). *Capitalizing on natural resources rent and renewable energy in enhancing economic growth – New evidence with MMQR method*. June, 3421–3441. https://doi.org/10.1111/1477-8947.12536

Khairul M, C. A. S. A. D. (2024). Philosophy as the Basis for the Development of Science. *Jurnal Ilmiah Nusantara (JINU)Vol.1, No.4 Juli 2024*. *1*(4), 217–229.

Lestari, I. D., Tri, Y., & Muhtar, T. (2025). *Digital Transformation in Education: A Critical Review in Philosophical Perspective*. *10*(2), 1743–1748.

Lim, W. M. (2023). Philosophy of science and research paradigm for business research in the transformative age of automation, digitalization, hyperconnectivity, obligations, globalization and sustainability. *Journal of Trade Science*, *11*(2/3), 3–30. https://doi.org/10.1108/jts-07-2023-0015

Lismawati, Ramadhan, A. R., & Astuti, A. P. (2024). Prophetic Framework in Educational Evaluation: A Qualitative Study on Minimum Competency

Assessment in Indonesia. *Jurnal Pendidikan Agama Islam (Journal of Islamic Education Studies)*, 12(1), 1–22. https://doi.org/10.15642/jpai.2024.12.1.1-22

Megawati, M., & Trisnawati, W. (2022). The development of a micro-teaching module for online learning. *International Journal of Educational Studies in Social Sciences (IJESSS)*, 2(2), 54–61. https://doi.org/10.53402/ijesss.v2i2.47

Muslim, A. (2023). The Philosophical Basis of Idealism and the Implementation of the Independent Learning Curriculum. *JETISH: Journal of Education Technology Information Social Sciences and Health*, 1(1), 34–40. https://doi.org/10.57235/jetish.v1i1.35

Naatonis, R. N., Masitoh, S., & Nursalim, M. (2022). Perspectives on the Philosophy of Education Progressivism In Learning Models Ubiquitous Learning. *FALASIFA: Jurnal Studi Keislaman*, 13(2), 127–133. https://doi.org/10.62097/falasifa.v13i2.1048

Nugraha, D., & Agusti, A. (2023). Accountability of Educational Leaders Based on Religion, Philosophy, Psychology and Sociology. *Jurnal Pendidikan Dan Kewirausahaan*, 12(1), 194–205. https://doi.org/10.47668/pkwu.v12i1.715

Nugraha, D. Y., & Kuswanjono, A. (2024). Sir Francis Galton's Philosophy of Measurement Science and Its Relevance for the Development of the Psychometric Paradigm. *Jurnal Filsafat Indonesia*, 7(3), 505–511. https://doi.org/10.23887/jfi.v7i3.69546

Piancazzo, F., Noris, A., Sabatini, N., Cantoni, L., Piancazzo, F., Noris, A., Sabatini, N., & Cantoni, L. (2024). Stereotypes and Imaginaries of Italianness in Online Communication by Fashion Brands * Italy , an Extraordinary Commonplace ? Stereotypes and Imaginaries of Italianness in Online Communication by Fashion Brands Ã. *Fashion Theory*, 28(5–6), 755–787. https://doi.org/10.1080/1362704X.2024.2379996

Rahmawati, I. Y., Wahyu, R. A., & Pandansari, T. (2024). *The Influence of Financial Literacy , Financial Attitudes , and Personality on Financial Management Behavior of SME in Banyumas Regency.* 23(2), 177–188.

Reyvani, D., Sari, I. D., Yuanita, P., & Zein, A. W. (2025). Definition and Scope of Philosophy of Science. *Jurnal Multidisiplin Ilmu Akademik (JMIA)*, 2(1), 502–512.

Storozhyk, M. (2024). Philosophy of future: analytical overview of interaction between education, science, and artificial intelligence in the context of contemporary challenges. *Futurity Philosophy*, 3(1), 23–47. https://doi.org/10.57125/fp.2024.03.30.02

Suratin, S. I., Prayogo, P., Munawarsyah, M., & ... (2024). The Role of Islamic Education in Positive Social Transformation amidst Technological Advancements. *Jurnal Pendidikan …*, 12(2), 223–242. https://jurnalftk.uinsa.ac.id/index.php/jpai/article/download/4342/1204

Vanny, D., Fatimah, S., & Fitrisia, A. (2024). The Contribution of Philosophy of Science and Ethics to Social Life in the 5.0 Era. *Future Academia : The Journal of Multidisciplinary Research on Scientific and Advanced*, 2(2), 63–69. https://doi.org/10.61579/future.v2i2.94

Wahyudin, Y., & Rahayu, D. N. (2020). Analysis of Website-Based Information System Development Methods: A Literature Review. *Jurnal Interkom: Jurnal Publikasi Ilmiah Bidang Teknologi Informasi Dan Komunikasi*, *15*(3), 26–40. https://doi.org/10.35969/interkom.v15i3.74

Yang, L., Al-jaifi, H. A. A., Yong, K., & Lee, M. (2024). A dynamic bibliometric analysis of financial inclusion and happiness with CiteSpace A dynamic bibliometric analysis of financial inclusion and happiness with CiteSpace. *Cogent Economics & Finance*, *12*(1). https://doi.org/10.1080/23322039.2024.2414236

Yasmin Khairani Zakaria, N., Hashim, H., & Azhar Jamaludin, K. (2025). Mobile Technology for Enhanced ESL Writing Education: A Systematic Review of Benefits and Pedagogical Innovations. *Arab World English Journal*, *11*(11), 210–222. https://doi.org/10.24093/awej/call11.13

Zulfida, S., Setiadi, S. (2024). A Philosophical Understanding of the Arabic Language Acquisition Process in Early Childhood: A Philosophy of Language Perspective and its Implications. *Tanwir Arabiyyah: Arabic as Foreign Language Journal*, *4*(1), 193–210.