Implementation of the Sequenced Model in IPAS Thematic Learning to Strengthen Students' Holistic Skills in the Merdeka Curriculum

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Abstract

The integration of natural and social sciences is essential in basic education to strengthen conceptual coherence and increase the relevance of learning to real life. This study explores the application of the Sequenced model in thematic IPAS learning within the Merdeka Curriculum, by positioning concrete science concepts before social aspects to foster students' holistic competencies. A qualitative case study was conducted in grade V of SD Negeri 2 Pandanrejo, Malang, from January to March 2025. Research subjects consisted of teachers, students, the school principal, and parents. Data were collected through interviews, observations, and documentation, and analyzed using Yin's case study framework with pattern matching and explanation-building techniques. Validity was maintained through source triangulation, technique triangulation, and verification by teachers and the principal. Findings indicate that the Sequenced model effectively integrates science and social studies, with learning progressing from ecosystem balance to natural resource management. Seventy-eight percent of students successfully explained the water cycle and connected it to water availability in their environment. Holistic skills improved across dimensions: spiritual (65% emphasized environmental responsibility), social (project collaboration), emotional (52% showed empathy toward environmental damage), and cognitive (average test scores increased by 13 points). The study confirms the compatibility of the Sequenced model with constructivist theory and the adaptability of the Merdeka Curriculum. Rather than a simple ordering of content, this model functions as a pedagogical strategy to enrich cross-disciplinary understanding and strengthen 21st-century skills. The findings offer practical implications for developing more contextual thematic learning in elementary schools.
Keywords: sequenced model; holistic skills; IPAS learning.

Introduction

In the 21st century, education is no longer sufficient if it only emphasizes academic knowledge. Students are also required to be equipped with more comprehensive skills, including intellectual, social, emotional, spiritual, physical, and aesthetic abilities, so that they are ready to face the increasingly complex and competitive challenges of life. However, field observations reveal the opposite. The results of the Programme for International Student Assessment (PISA) 2022 indicate that Indonesia's literacy, numeracy, and science achievement scores remain below the OECD average.[1] This situation underscores the importance of adopting a more integrative and relevant learning approach that aligns with students' real-world needs.[2] In line with UNESCO's Education 2030 agenda, elementary school learning should not only focus on academic achievements but also cultivate holistic competencies to enable students to adapt more effectively to rapid social and environmental changes.[3]

Education experts agree that a holistic approach to learning is key to addressing the challenges of the 21st century. Dicky Listiana emphasizes that project-based and collaborative learning can create more meaningful, contextual, and comprehensive learning experiences for students.[4] In line with this, Nadia Aliyatuz Zulfa states that learning designs that integrate cross-disciplinary elements can foster emotional, social, and intellectual competencies in a balanced manner.[5] Meanwhile, Harli Trisdiono emphasizes that the implementation of thematic learning through science projects has proven effective in improving scientific literacy while strengthening the collaborative character of elementary school students.[6] These findings point to the conclusion that

[1] OECD, "What Can Students Do in Mathematics, Reading and Science? BT - PISA 2022 Results (Volume I): The State of Learning and Equity in Education," PISA (Paris: OECD Publishing, 2023), https://doi.org/10.1787/53f23881-en.

[2] Kamila Syifa Maulida, "Pembelajaran Tematik-Integratif Sebagai Upaya Meningkatkan Keterampilan Abad Ke-21 Siswa Sekolah Dasar," *Jurnal Pendidikan Guru Sekolah Dasar* 1, no. 2 (December 7, 2023): 8, https://doi.org/10.47134/pgsd.v1i2.140.

[3] UNESCO, "Asia-Pacific Education 2030: SDG 4 Midterm Review" (UNESCO, 2023), https://www.unesco.org/en/articles/asia-pacific-education-2030-sdg-4-midterm-review.

[4] Dicky Listiana et al., "Implementation of the Project-Based Learning Model to Enhance Collaborative Skills of Elementary School Students," *Journal of Innovation and Research in Primary Education* 4 (April 29, 2025): 179–86, https://doi.org/10.56916/jirpe.v4i2.1218.

[5] Nadia Aliyatuz Zulfa, Hibana Hibana, and Nurita Sari, "Learning Method Innovation: Integrating Projects for Holistic Development of Early Childhood.," *Al-Athfaal: Jurnal Ilmiah Pendidikan Anak Usia Dini* 7, no. 2 (December 29, 2024): 157, https://doi.org/10.24042/al-athfaal.v7i2.24780.

[6] Harli Trisdiono et al., "Development of Multidisiplin Integrated Project-Based Learning Model To Improve Critical Thinking and Cooperation Skills," *JPI (Jurnal Pendidikan Indonesia)* 8, no. 1 (June 18, 2019): 9, https://doi.org/10.23887/jpi-undiksha.v8i1.17401.

thematic learning has significant potential in developing holistic skills from an early age.

Although the Merdeka Curriculum provides teachers with the flexibility to design contextual and thematic learning, its implementation in the field still faces a number of challenges. The results of a study in grade V of SDN 2 Pandanrejo showed that learning in Madrasah Ibtidaiyah tended to remain focused on subjects, with limited cross-aspect integration and a lack of emphasis on reflective skills and student independence. This condition caused students' holistic skills to not develop optimally, especially in Natural and Social Sciences (IPAS) learning.

Previous studies have examined thematic approaches and holistic skill development, but the results still show limitations. Oktay Kızkapan found that project-based learning in science can improve students' scientific literacy and collaborative character, but the focus is still limited to cognitive and social aspects.[7] Faridah Musa and Norlaila Mufti emphasized the importance of Project-Based Learning (PBL) in creating meaningful learning experiences, although they did not mention the integration of spiritual and emotional aspects.[8] Chunmeng Weng designed a deep learning design with four main elements emphasizing interdisciplinary integration, but placed greater emphasis on teacher design rather than its impact on student development.[9] Furthermore, Sariaman's research indicates that thematic learning can stimulate creativity and critical thinking, but it has not been comprehensively studied in the context of the Merdeka Curriculum.[10] Similarly, Putri & Sari (2020) investigated the effectiveness of thematic learning in elementary schools, but only highlighted achievements in the cognitive domain.[11]

This study holds an important position as it specifically examines the

[7] Oktay Kızkapan and Oktay Bektaş, "The Effect of Project Based Learning on Seventh Grade Students' Academic Achievement," 2017.
[8] Faridah Musa and Norlaila Mufti, "Project-Based Learning: Promoting Meaningful Language Learning for Workplace Skills," *Procedia - Social and Behavioral Sciences* 18 (December 31, 2011): 187–95, https://doi.org/10.1016/j.sbspro.2011.05.027.
[9] Chunmeng Weng, Congying Chen, and Xianfeng Ai, "A Pedagogical Study on Promoting Students' Deep Learning through Design-Based Learning," *International Journal of Technology and Design Education* 33, no. 4 (2023): 1653–74, https://doi.org/10.1007/s10798-022-09789-4.
[10] Sariaman Sariaman, Tahmid Sabri, and Amalia Sapriati, "PEMBELAJARAN TEMATIK TERPADU BERBASIS PENGEMBANGAN BERPIKIR KRITIS DAN BERPIKIR KREATIF PADA SISWA KELAS V SEKOLAH DASAR," *EduHumaniora | Jurnal Pendidikan Dasar Kampus Cibiru* 13, no. 2 (August 1, 2021): 124–33, https://doi.org/10.17509/eh.v13i2.35881.
[11] Asih Mardati et al., "Efektivitas Perangkat Pembelajaran Tematik Discovery Learning Terhadap Kemampuan Berpikir Kritis Siswa Kelas III," *Jurnal Fundadikdas (Fundamental Pendidikan Dasar)* 4, no. 3 (February 24, 2022): 256–64, https://doi.org/10.12928/fundadikdas.v4i3.5140.

implementation of the thematic approach with a *sequenced* model in the Merdeka Curriculum for fifth-grade science lessons in elementary schools. Unlike previous studies that generally focus on cognitive achievements, this study explicitly emphasizes the strengthening of holistic skills that encompass intellectual, social, emotional, and spiritual dimensions. With this focus, this study aims to fill the gap in the literature regarding the integration of holistic skills in thematic learning, particularly in the context of the Merdeka Curriculum, which has rarely been studied empirically to date.

This study aims to analyze the implementation of thematic learning using the *sequenced* model in IPAS lessons for fifth-grade students at SDN 2 Pandanrejo, particularly in improving students' holistic skills. Theoretically, this study is expected to enrich the literature on holistic skill development within the framework of the Merdeka Curriculum. Practically, the results of this study can serve as a reference for teachers and curriculum developers in designing more meaningful, integrative, and relevant learning experiences that meet the demands of the 21st century.

Research Method

This study employs a qualitative approach using a case study design ([12] To examine the implementation of the *sequenced* thematic learning model in the Merdeka Curriculum. The research focuses on the development of students' holistic skills through IPAS learning in Grade 5 of SD Negeri 2 Pandanrejo, particularly on the themes of "Ecosystem Balance" and "The Impact of Natural Resource Extraction and Conservation Efforts." The research subjects include classroom teachers, students, the school principal, and parent representatives. A case study was chosen because it allows researchers to explore learning practices in depth within a real-world context, with clear units of analysis focused on teacher-student interactions and support from the school and family environments.

Data collection was conducted from January to March 2025 through interviews, observations, and documentation. In the initial stage, the researcher conducted preliminary interviews and pre-observations to establish relationships with informants and understand the research context. Subsequently, in-depth interviews and classroom observations were conducted, focusing on teacher-student interactions, collaborative activities, and students' emotional and social engagement. The final stage includes follow-

[12] R K Yin, "Studi Kasus (Desain & Metode)(Ed. 1st)(Cet-14)," *Jakarta: Rajawali Pers*, 2015.

up interviews and the collection of supporting documents such as syllabi, teaching modules, student work, photos of activities, and evaluation notes. Semi-structured interviews were conducted with teachers, school principals, and parents to obtain a comprehensive picture of learning practices and environmental support. At the same time, documentation data served to reinforce and triangulate the results of observations and interviews.

Data analysis in this study follows Robert K. Yin's case study approach, emphasizing *pattern matching* and *explanation building*. Data from interviews, observations, and documentation are compared with expected patterns, such as improvements in collaboration skills, reflection, and concept integration in science learning through the *sequenced* model. Validation is conducted through triangulation of sources (teachers, students, principals, and parents) and triangulation of techniques (interviews, observations, documentation). Additionally, *member checking* is performed by asking teachers and principals to review the summary of findings to ensure the accuracy of interpretations.

Integration of Science and Social Studies Materials through the Sequenced Model

The results of observation and documentation show that the application of the *sequenced* model in thematic IPAS learning at SD Negeri 2 Pandanrejo is able to present a clear integration between science and social studies subjects. The pattern of presenting material, which begins with the concept of ecosystem balance (science), followed by natural resource management (social studies), helps students understand cause-and-effect relationships more coherently. Students appear to find it easier to follow the line of reasoning when starting from concrete examples in their surroundings before moving on to more abstract social consequences. This finding aligns with Piaget's theory of cognitive development, which emphasizes the importance of concrete experiences as a foundation for abstract understanding.[13] The following table illustrates the integration of science and social studies content in learning.

[13] Vishnu Agrawal and Ashish Sureka, "Setting the Foundation for Scientific Inquiry and Computational Thinking in Early Childhood Using Lego Machines and Mechanism Education Kit," *ArXiv Preprint ArXiv:1801.06042*, 2017.

Table 1
Sequence of Material Organization Using the Sequenced Model

Stage	Subject	Main Material	Activity Format
1	Science	Environmental balance (food chain)	Ecosystem discussion & simple experiments
2	Social Studies	Utilization and conservation of natural resources	Local case studies & poster analysis
3	Integration	Theme: "Maintaining Natural Balance"	Collaborative project (nature conservation poster)

The teacher explained that the sequence was designed considering the thinking stages of elementary school students: starting from concrete knowledge (science), then moving on to more abstract social understanding (social studies).

Compared to previous studies, these results confirm and expand the research on integrated learning. Research by Atik Puspita Rini,[14] Shows that an integrated curriculum strengthens 21st-century competencies by linking concepts to real-world contexts, while Tony Dowden,[15] Fogarty,[16] Lisa M. Harrison,[17] Emphasize integration as a pathway to meaningful learning. The phenomenon at SD Negeri 2 Pandanrejo adds a new perspective by highlighting sequencing strategies. By placing science before social studies, students not only understand scientific concepts more firmly but also find it easier to connect them to social implications, such as how damage to natural ecosystems will impact human life. Thus, sequencing proves to be not merely focused on technical aspects but a pedagogical strategy that adds deeper meaning to cross-disciplinary integration.

Relevance to the Merdeka Curriculum

The implementation of the *sequenced* model in Grade 5 at SD Negeri 2 Pandanrejo is in line with the principle of flexibility promoted by the Merdeka Curriculum. Teachers organize the material in stages so that learning feels more coherent and easier to follow.

[14] Atik Puspita Rini et al., "Pendekatan Terintegrasi Dalam Pengembangan Kurikulum Abad 21," *Jurnal Ilmiah Pendidikan Holistik (JIPH)* 2, no. 2 (April 30, 2023): 171–82, https://doi.org/10.55927/jiph.v2i2.3942.
[15] Tony Dowden, Chris Brough, and Barbara Fogarty-Perry, "Student-Centred Curriculum Integration in Primary Schools: Nurturing Democratic Citizenship in Aotearoa New Zealand," *Curriculum Perspectives* 44, no. 4 (2024): 513–23, https://doi.org/10.1007/s41297-024-00234-1.
[16] Robin J. Fogarty, *How to Integrate the Curricula*, Third edit (Chicago: Corwin, 2009).
[17] Lisa M. Harrison, Ellis Hurd, and Kathleen M. Brinegar, "An Integrative Curriculum: Supporting Students' Understanding of Self and the World," *Middle School Journal* 50, no. 2 (March 15, 2019): 2–3, https://doi.org/10.1080/00940771.2019.1583986.

Conceptual integration is strengthened through thematic projects, such as the theme *"Water for Life."* In this project, students not only conduct science experiments on the water cycle but also map the availability of clean water in their surroundings as part of their social studies. Data shows that 78% of students were able to explain the water cycle concept and connect it to real-world conditions they encountered. These findings reinforce the results of research by Agrawal and Sureka, "[18] Kaso Mustamin, "[19] which states that project-based learning promotes social connectedness while increasing students' active participation in solving contextual problems.

The cross-disciplinary integration that emerges also demonstrates support for social constructivism, where understanding is built through social interaction and real-world experiences (Schunk, 2019).[20] In other words, sequencing not only helps teachers organize the flow of material but also serves as a bridge for students to build deeper meaning. These findings reinforce the argument that the Merdeka Curriculum requires systematic, integrative pedagogical strategies, and the *sequenced* model is capable of addressing these needs in accordance with students' stages of cognitive development.

Holistic Skill Development

Data from observations, interviews, and student reflections show the development of holistic skills covering spiritual, social, emotional, and cognitive dimensions. In the spiritual aspect, for example, 65% of students stated that preserving nature is part of their responsibility as God's mandate. The social aspect is evident in the cooperation in group discussions, while the emotional aspect is seen in the students' concern for environmental issues around them. Cognitively, learning outcomes also improved, reflected in a 13-point increase in the average summative score after implementing the *sequenced* model.

Table 2.
Improvement in Students' Holistic Skills

Aspect	**Observed Indicators**	**Field Data**

[18] Agrawal and Sureka, "Setting the Foundation for Scientific Inquiry and Computational Thinking in Early Childhood Using Lego Machines and Mechanism Education Kit."
[19] Kaso Mustamin et al., "The Impact of Project-Based Learning on Students' Collaboration Skills in Secondary Schools," *International Journal of Educational Research Excellence (IJERE)* 3 (December 30, 2024): 992–98, https://doi.org/10.55299/ijere.v3i2.740.
[20] Dale Schunk and Maria Dibenedetto, "Motivation and Social Cognitive Theory," *Contemporary Educational Psychology* 60 (December 1, 2019): 101832, https://doi.org/10.1016/j.cedpsych.2019.101832.

Spiritual	Awareness of protecting the environment as God's mandate	65% of students stated in interviews that "nature must be protected as God's creation"
Social	Cooperation in group discussions	Observation: students shared roles when making posters
Emotional	Concern for environmental damage	52% of students expressed sadness when discussing water pollution
Cognitive	Conceptual understanding & ability to answer summative questions	The average score on summative tests increased by 13 points compared to pre-intervention

Based on the field data above, this study shows that the implementation of the sequenced model in thematic IPAS learning: *first*, improves material integration. The sequential integration of science and social studies makes it easier for students to understand the cause-and-effect relationships between concepts; *second*, it aligns with the Merdeka Curriculum. The sequenced model supports curriculum flexibility by providing space for teachers to connect cross-subject concepts contextually through projects; *third,* it develops students' holistic skills. Observations show improvements in spiritual aspects (awareness of preserving nature), social aspects (collaboration), emotional aspects (empathy toward environmental damage), and cognitive aspects (deeper understanding of concepts); *fourth,* addressing structural challenges. Obstacles primarily arise in curriculum aspects and limited teaching references, but teachers can overcome these through learning outcome mapping and project-based learning.

These results are consistent with the study by Patrick McGuire and Halah Alismail, which emphasizes the importance of an integrative curriculum in building comprehensive 21st-century skills.[21] Similar findings were reported by Voogt and Roblin, who noted that a thematic approach can foster collaboration and critical thinking skills.[22] Monique Volman's findings also confirm the same phenomenon.[23] Thus, this study provides empirical evidence that the *sequenced* model not only strengthens conceptual understanding but also fosters students' spiritual, social, and emotional awareness—an

[21] Patrick Mcguire and Halah Alismail, "21st Century Standards and Curriculum: Current Research and Practice.," January 20, 2015.
[22] Joke Voogt, Jules Pieters, and Natalie Pareja Roblin, "Collaborative Curriculum Design in Teacher Teams: Foundations," in *Collaborative Curriculum Design for Sustainable Innovation and Teacher Learning* (Springer, 2019), 5–18.
[23] Monique Volman et al., "The Focus of Schools on Twenty-first–Century Competencies and Students' Experience of These Competencies," *The Curriculum Journal* 31 (May 16, 2020), https://doi.org/10.1002/curj.57.

achievement aligned with the direction of the Merdeka Curriculum's development.

Implementation Challenges and Pedagogical Implications

Although the *sequenced* model shows positive results, its implementation is not without challenges. Teachers face limitations in ready-to-use thematic teaching materials and a relatively short time to develop modules. This aligns with the findings of Wulandari,[24] and Gita Nurul Puspita,[25] , who noted that technical aspects and limitations often hinder the implementation of an integrated curriculum in learning resources. However, teachers in Grade V of SD Negeri 2 Pandanrejo were able to adapt by mapping learning outcomes and designing projects based on the local context, thereby preventing these obstacles from reducing the quality of the learning process.

The practical implications of these findings are the need for systematic support in the form of *sequenced* teaching guidelines that can help teachers plan lessons without the burden of developing materials individually. Such guidelines are important to ensure that the integration of science and social studies can be implemented more consistently across schools. For future researchers, it is recommended to conduct studies in a broader context with a stronger experimental design so that the effectiveness of the *sequenced* model can be tested more comprehensively.

This study contributes by emphasizing the role of sequencing as a pedagogical strategy that is relevant to the cognitive development characteristics of elementary school students. Sequencing is not merely a matter of the order in which material is presented, but a strategy that can ensure that cross-disciplinary integration remains aligned with students' learning needs. Thus, the results of this study enrich the discourse on curriculum integration, while offering a new perspective for the development of thematic learning practices within the framework of the Merdeka Curriculum.

Conclusion

This study confirms that the application of the sequenced model in thematic IPAS learning in elementary schools can produce coherent and meaningful integration between

[24] Wulan Ndari et al., "Implementation of the Merdeka Curriculum and Its Challenges," *European Journal of Education and Pedagogy* 4 (June 15, 2023): 111–16, https://doi.org/10.24018/ejedu.2023.4.3.648.
[25] Gita Nurul Puspita et al., "The Integration ESD and Ethnoscience to Merdeka Curriculum: Study on Junior High School," *IJIS Edu: Indonesian Journal of Integrated Science Education* 6, no. 2 (2024): 148–60.

science and social studies subjects. The sequence of presentation, which starts from concrete concepts (science) to social abstractions (social studies), has been proven to make it easier for students to understand the cause-and-effect relationships between concepts, while strengthening the integration of material. This finding is in line with Piaget's cognitive development theory and integrative learning practices that emphasize the importance of concrete experiences as a basis for abstract understanding.

In addition to strengthening the relevance of the Merdeka Curriculum, the sequenced model has proven effective in developing students' holistic skills, encompassing spiritual, social, emotional, and cognitive aspects. Improvements in conceptual understanding, environmental awareness, group cooperation, and concern for ecological issues indicate that this model is not merely a technical strategy but also a pedagogical approach that provides deep meaning for interdisciplinary learning.

This research's theoretical contribution lies in its affirmation of sequencing as an integrative strategy that aligns with elementary school students' cognitive development characteristics. Practically, these findings recommend the need for systematic support in the form of sequenced-based teaching guidelines to enable teachers to design thematic learning in a more consistent, contextual, and 21st-century skill-oriented manner.

Bibliography

Agrawal, Vishnu, and Ashish Sureka. "Setting the Foundation for Scientific Inquiry and Computational Thinking in Early Childhood Using Lego Machines and Mechanism Education Kit." *ArXiv Preprint ArXiv:1801.06042*, 2017.

Aliyatuz Zulfa, Nadia, Hibana Hibana, and Nurita Sari. "Learning Method Innovation: Integrating Projects for Holistic Development of Early Childhood." *Al-Athfaal: Jurnal Ilmiah Pendidikan Anak Usia Dini* 7, no. 2 (December 29, 2024): 157. https://doi.org/10.24042/al-athfaal.v7i2.24780.

Dowden, Tony, Chris Brough, and Barbara Fogarty-Perry. "Student-Centred Curriculum Integration in Primary Schools: Nurturing Democratic Citizenship in Aotearoa New Zealand." *Curriculum Perspectives* 44, no. 4 (2024): 513–23. https://doi.org/10.1007/s41297-024-00234-1.

Harrison, Lisa M., Ellis Hurd, and Kathleen M. Brinegar. "An Integrative Curriculum: Supporting Students' Understanding of Self and the World." *Middle School Journal* 50, no. 2 (March 15, 2019): 2–3. https://doi.org/10.1080/00940771.2019.1583986.

Kızkapan, Oktay, and Oktay Bektaş. "The Effect of Project-Based Learning on Seventh Grade Students' Academic Achievement," 2017.

Listiana, Dicky, Ari Puspita, Rr Setyowati, Nurul Istiq'faroh, and Ganes Gunansyah. "Implementation of the Project-Based Learning Model to Enhance Collaborative Skills of Elementary School Students." *Journal of Innovation and Research in Primary Education* 4 (April 29, 2025): 179–86. https://doi.org/10.56916/jirpe.v4i2.1218.

Mardati, Asih, Hanum Hanifa Sukma, Febby Karmila, and Yeyen Febrilia. "Efektivitas Perangkat Pembelajaran Tematik Discovery Learning Terhadap Kemampuan Berpikir Kritis Siswa Kelas III." *Jurnal Fundadikdas (Fundamental Pendidikan Dasar)* 4, no. 3 (February 24, 2022): 256–64. https://doi.org/10.12928/fundadikdas.v4i3.5140.

Maulida, Kamila Syifa. "Pembelajaran Tematik-Integratif Sebagai Upaya Meningkatkan Keterampilan Abad Ke-21 Siswa Sekolah Dasar." *Jurnal Pendidikan Guru Sekolah Dasar* 1, no. 2 (December 7, 2023): 8. https://doi.org/10.47134/pgsd.v1i2.140.

McGuire, Patrick, and Halah Alismail. "21st Century Standards and Curriculum: Current Research and Practice." January 20, 2015.

Musa, Faridah, and Norlaila Mufti. "Project-Based Learning: Promoting Meaningful Language Learning for Workplace Skills." *Procedia - Social and Behavioral Sciences* 18 (December 31, 2011): 187–95. https://doi.org/10.1016/j.sbspro.2011.05.027.

Mustamin, Kaso, Wahdah Wahdah, Dermawan Intiardy, Abrina Jumrah, and Petrus Pattiasina. "The Impact of Project-Based Learning on Students' Collaboration Skills in Secondary Schools." *International Journal of Educational Research Excellence (IJERE)* 3 (December 30, 2024): 992–98. https://doi.org/10.55299/ijere.v3i2.740.

Ndari, Wulan, Suyatno, Sukirman, and Fitri Mahmudah. "Implementation of the Merdeka

Curriculum and Its Challenges." *European Journal of Education and Pedagogy* 4 (June 15, 2023): 111–16. https://doi.org/10.24018/ejedu.2023.4.3.648.

OECD. "What Can Students Do in Mathematics, Reading, and Science? BT - PISA 2022 Results (Volume I): The State of Learning and Equity in Education." PISA. Paris: OECD Publishing, 2023. https://doi.org/10.1787/53f23881-en.

Piaget, Jean. "Development and Learning." *Reading in Child Behavior and Development*, 1972, 38–46.

Puspita, Gita Nurul, Ari Widodo, Siti Sriyati, and Achmad Samsudin. "The Integration of ESD and Ethnoscience into Merdeka Curriculum: A Study on Junior High School." *IJIS Edu: Indonesian Journal of Integrated Science Education* 6, no. 2 (2024): 148–60.

Rini, Atik Puspita, Naufal Fikri Firmansyah, Nugraheni Widiastuti, Yunitha Ike Christyowati, and Achmad Noor Fatirul. "Pendekatan Terintegrasi Dalam Pengembangan Kurikulum Abad 21." *Jurnal Ilmiah Pendidikan Holistik (JIPH)* 2, no. 2 (April 30, 2023): 171–82. https://doi.org/10.55927/jiph.v2i2.3942.

Robin J. Fogarty. *How to Integrate the Curricula*. Third edit. Chicago: Corwin, 2009.

Sariaman, Sariaman, Tahmid Sabri, and Amalia Sapriati. "PEMBELAJARAN TEMATIK TERPADU BERBASIS PENGEMBANGAN BERPIKIR KRITIS DAN BERPIKIR KREATIF PADA SISWA KELAS V SEKOLAH DASAR." *EduHumaniora | Jurnal Pendidikan Dasar Kampus Cibiru* 13, no. 2 (August 1, 2021): 124–33. https://doi.org/10.17509/eh.v13i2.35881.

Schunk, Dale, and Maria Dibenedetto. "Motivation and Social Cognitive Theory." *Contemporary Educational Psychology* 60 (December 1, 2019): 101832. https://doi.org/10.1016/j.cedpsych.2019.101832.

Trisdiono, Harli, Siswandari Siswandari, Nunuk Suryani, and Soetarno Joyoatmojo. "Development of Multidisciplinary Integrated Project-Based Learning Model To Improve Critical Thinking and Cooperation Skills." *JPI (Jurnal Pendidikan Indonesia)* 8, no. 1 (June 18, 2019): 9. https://doi.org/10.23887/jpi-undiksha.v8i1.17401.

UNESCO. "Asia-Pacific Education 2030: SDG 4 Midterm Review." UNESCO, 2023. https://www.unesco.org/en/articles/asia-pacific-education-2030-sdg-4-midterm-review.

Volman, Monique, Merlijn Karssen, Yolande Emmelot, and Irma Heemskerk. "The Focus of Schools on Twenty-first–Century Competencies and Students' Experience of These Competencies." *The Curriculum Journal* 31 (May 16, 2020). https://doi.org/10.1002/curj.57.

Voogt, Joke, Jules Pieters, and Natalie Pareja Roblin. "Collaborative Curriculum Design in Teacher Teams: Foundations." In *Collaborative Curriculum Design for Sustainable Innovation and Teacher Learning*, 5–18. Springer, 2019.

Weng, Chunmeng, Congying Chen, and Xianfeng Ai. "A Pedagogical Study on Promoting Students' Deep Learning through Design-Based Learning." *International Journal of Technology and Design Education* 33, no. 4 (2023): 1653–74.

https://doi.org/10.1007/s10798-022-09789-4.

Yin, R K. “Studi Kasus (Desain & Metode)(Ed. 1st)(Cet-14).” *Jakarta: Rajawali Pers*, 2015.