

# The Role of Civic Education in Shaping Students' Attitudes toward Cultural Diversity: A Comparative Study with International Theoretical Integration

**Selma Sukainah<sup>1\*</sup>, Alya Athaya Fitria Lukman<sup>1</sup>, Muhammad Dhowi Putro Jati<sup>1</sup>, Fidela Shilchika Manza<sup>1</sup>, Nasywa Kayla<sup>1</sup>, Muhammad Veriel Putu Tiwara<sup>2</sup>, Wati Sukmawati<sup>1</sup>**

<sup>1</sup> Universitas Muhammadiyah Prof.Dr.Hamka, Indonesia

<sup>2</sup> University of Jordan, Indonesia

\* Author Correspondence

## Article History

Received : 4 July 2025;

Revised : 21 July 2025;

Accepted: 5 December 2025.

## Keywords

Civic Education;

Self-Identity;

Learning Outcome Assesment;

Attitude Toward Culture.



Check for updates

## Abstract

Civic Education plays a crucial role in character building and fostering appreciation for cultural diversity in Indonesia's multicultural society. This study addresses this gap by evaluating both cognitive and affective learning outcomes related to the Self-Identity and My Environment topic in Grade V-A Civic Education at State Elementary School Batu Ampar 12 Pagi, East Jakarta. Guided by sociocultural and multicultural education theories, this descriptive quantitative research involved a census of 32 students. Cognitive knowledge was measured using a 20-item written test (13 multiple-choice, 5 short answers, 2 essays), while affective attitudes toward cultural diversity were assessed via a 10-item Likert scale questionnaire, exploring cultural appreciation, social empathy, and civic responsibility. Descriptive statistical analysis showed 18 students achieved "Excellent" in the cognitive domain and 11 scored "Excellent" affectively, with most students demonstrating solid internalization of cultural and civic values. These results suggest that a holistic assessment model incorporating cognitive and affective evaluations effectively supports character formation and cultural inclusiveness from early education. The study contributes empirical evidence from a culturally diverse urban Indonesian context and proposes an integrated assessment approach. Practically, findings can guide value-based curricula development and enriched affective assessment in civic education for multicultural societies.

**Contact :** Corresponding author  e-mail: [sukainahselma64@gmail.com](mailto:sukainahselma64@gmail.com)

**How to Cite :** Sukainah, S., Lukman, A. A. F., Jati, M. D. P., Manza, F. S., Kayla, N., Tiwara, M. V. P., & Sukmawati, W. (2025). The Role of Civic Education in Shaping Students' Attitudes toward Cultural Diversity: A Comparative Study with International Theoretical Integration. *Lucerna : Jurnal Riset Pendidikan Dan Pembelajaran*, 5(1), 43-54. <https://doi.org/10.56393/lucerna.v5i1.3482>



This work is licensed under a [Creative Commons Attribution-ShareAlike 4.0 International License](https://creativecommons.org/licenses/by-sa/4.0/). Allows readers to read, download, copy, distribute, print, search, or link to the full texts of its articles and allow readers to use them for any other lawful purpose. The journal hold the copyright.

---

## Introduction

Education plays a central role in building the character and identity of a nation, especially within a multicultural society like Indonesia. One of the key subjects that supports this role is Civic Education, which is not limited to the delivery of civic knowledge, but also plays a crucial part in shaping students' moral values, civic awareness, and national identity. According to Wati and Anggriani (2024), character formation is a long-term process that must be developed through consistent guidance and daily habituation starting from early education. At the elementary school level, Civic Education introduces students to national values rooted in Indonesia's diverse cultural heritage. One of the core topics is *Self-Identity and My Environment*, which encourages students to recognize who they are, understand their surroundings, and appreciate differences in society.

The importance of affective components, such as civic values, attitudes, and emotional engagement is increasingly acknowledged both in Indonesia and internationally. These aspects still tend to be overlooked in many educational contexts. International organizations have also acknowledged the limited integration of affective aspects in civic education. According to the OECD SEL framework and UNESCO reports, emotional and ethical learning outcomes often receive less structured attention than academic content (OECD, 2021; UNESCO, 2019). Evidence from a comparative study across 24 countries indicates that elements like students' institutional trust, appreciation for diversity, and civic character often receive less emphasis than knowledge-based outcomes in Civic Education (Schulz et al., 2023).

Civic Education has multidimensional objectives, including the development of cognitive understanding, affective engagement, and responsible behavior. It seeks to instill knowledge of rights and obligations, democratic principles, and national identity, while simultaneously shaping values such as tolerance and empathy. Key concepts such as *self-identity* refer to how individuals perceive themselves in relation to social groups, while *cultural environment* encompasses the values, norms, and practices that surround individuals. Character formation, meanwhile, is the internalization of these civic and cultural values through guided learning experiences. Through this process, values such as tolerance, responsibility, and care for others are formed and become part of their identity. Students who recognize themselves and their environment well will develop into confident individuals who are sensitive to others and capable of living harmoniously in diversity (Novianti et al., 2023; Nurliana et al., 2023; Sukmawati et al., 2022).

In Indonesia, Civic Education is formally integrated into the elementary curriculum through the *Kurikulum 2013* and its current transformation under the *Merdeka Belajar* policy. These frameworks emphasize character education, nationalism, and civic competence from the early grades. At Grade V level, the topic "*Self-Identity and My Environment*" is explicitly aimed at helping students understand their role in society, appreciate cultural diversity, and behave as responsible citizens. This learning theme is relevant for nurturing social skills, empathy, and national awareness among young learners. This assessment not only measures content comprehension but also captures affective aspects, including students' appreciation for diversity, pride in local traditions, and concern for preserving cultural heritage (Istiqomah et al., 2023).

---

---

Sukmawati et al., 2021). This type of assessment provides a complete picture of the learning impact on students' character development.

Indonesia's rich diversity, spanning over 1,300 ethnic groups and 700 languages—makes cultural understanding an essential part of education. According to sociocultural theory, identity is not formed in isolation but through continuous interaction with one's environment. Through this perspective, *self-identity* and *cultural literacy* are interlinked. Students who understand and respect the cultural backgrounds of others are more likely to develop tolerance, cooperation, and civic awareness. Educators must thus ensure that these concepts are introduced early and reinforced consistently. Despite its importance, existing research on Civic Education tends to focus on cognitive outcomes and overlook the affective domain. There is limited empirical evidence that examines how Civic Education shapes attitudes such as cultural appreciation, identity development, and concern for community in elementary contexts. Most studies are theoretical or focused on secondary education levels. Hence, a gap exists in understanding how young learners internalize civic values and how these can be effectively assessed.

This study was conducted at State Elementary School Batu Ampar 12 Pagi in East Jakarta, a public institution situated in a densely populated urban area with socio-cultural diversity. The Grade V-A students involved in the research come from various ethnic and religious backgrounds, representing a microcosm of Indonesia's multicultural reality. Such a context provides a meaningful opportunity to observe how students internalize self-identity and cultural values within an inclusive Civic Education setting. Assessing student learning outcomes in Civic Education requires more than testing content knowledge. It is essential to measure affective aspects such as respect for diversity, cultural pride, and civic responsibility. However, affective assessments are often underdeveloped in school practice. A holistic approach, combining cognitive and affective tools can provide a fuller understanding of students' development. This method also aligns with current educational principles that emphasize not only learning *what to know* but also *how to be* and *how to live together*.

This study aims to evaluate both the cognitive understanding and affective attitudes of Grade V-A students on the topic "Self-Identity and My Environment" in Civic Education. By using a combination of written tests and affective questionnaires, this research seeks to offer empirical data on students' learning outcomes and character formation. The findings are expected to contribute to the refinement of character education models in primary schools and promote the use of integrated assessment strategies that reflect the holistic goals of Civic Education in multicultural contexts. In doing so, this study addresses a critical research gap by focusing on affective learning outcomes at the elementary level, an area still underexplored in current educational literature.

## Method

This study employed a descriptive quantitative design with a cross-sectional survey approach to provide an objective overview of students' cognitive and affective learning outcomes following instruction on the topic "Self-Identity and My Environment" in Civic Education. The approach was chosen because it enables the

---

measurement of knowledge comprehension and value internalization without manipulating variables or testing causal hypotheses (Putri & Sukmawati, 2024; Sukmawati et al., 2021a; Sukmawati et al., 2024). The research involved all 32 students of Grade V-A at State Elementary School Batu Ampar 12 Pagi, Jakarta, using total population (census) sampling, as the class reflects a microcosm of Indonesia's multicultural society and therefore provides meaningful insights into civic education in urban multicultural contexts, acknowledging potential limitations in generalizability beyond similar demographic settings. Data were collected using two validated instruments: a 20-item cognitive test (13 multiple-choice, 5 short-answer, and 2 essay questions) aligned with Bloom's Taxonomy levels, and a 10-item Likert-scale affective questionnaire (1=Strongly Disagree to 5=Strongly Agree) covering three dimensions—cultural appreciation (4 items), social empathy (3 items), and civic responsibility (3 items). Both instruments underwent expert validation by three education specialists and pilot testing with 15 Grade V students from a comparable school, yielding satisfactory reliability coefficients (Cronbach's Alpha = 0.82 for the cognitive test and 0.79 for the affective questionnaire). To minimize potential response bias, triangulation was conducted through classroom observation and brief follow-up interviews with 10 randomly selected students to confirm the consistency between questionnaire responses and observable behaviors. Data collection procedures included a pre-test orientation, voluntary participation supported by parental consent, and strict confidentiality measures. The data were analyzed using descriptive statistics (mean, percentage, standard deviation) and basic inferential correlation analysis between cognitive and affective scores using SPSS 25.0, with results categorized into performance levels from "Very Poor" to "Excellent" based on established educational benchmarks and supported by systematic documentation of student demographic backgrounds.

## Results and Discussion

### Results

This research presents comprehensive data from both cognitive tests and affective assessments conducted with Grade V-A students at State Elementary School Batu Ampar 12 Pagi. The study employed written tests consisting of multiple choice, short answers, and essays to determine student learning outcomes on the Self-Identity and My Environment material, complemented by affective questionnaires exploring students' attitudes and behaviors related to cultural awareness, respect for diversity, and sense of belonging within their environment (M. N. Fitria et al., 2022; Kusnadi et al., 2023; Sukmawati, 2020; Wahjusaputri et al., 2024).

The cognitive assessment results revealed that students demonstrated strong mastery of the Self-Identity and My Environment material, with a mean score of 82.3 ( $SD = 12.7$ ). Among the 32 enrolled students, 30 completed the cognitive assessment, while 2 students were absent during the testing period. The distribution showed that 18 students (60.0%) achieved scores between 85-100, categorized as "Excellent," while 11 students (36.7%) scored between 70-84, falling into the "Good" category. Notably, no students were classified in the "Satisfactory" (55-69) or "Poor" (46-54) categories,

indicating generally strong cognitive understanding across the class. The 2 absent students were classified as "Very Poor" (0-45) due to non-participation, representing 6.7% of the total enrollment.

Further analysis revealed that students performed particularly well on factual recall questions (mean score: 88.5) and conceptual understanding items (mean score: 79.2), while application-level questions showed slightly lower performance (mean score: 74.8). This pattern suggests that while students have solid foundational knowledge, there may be opportunities to strengthen higher-order thinking skills application in civic education contexts. The affective assessment, completed by 30 students (2 absent), demonstrated positive attitudes toward cultural diversity and civic responsibility, with an overall mean score of 78.9 (SD = 9.4). The results showed that 18 students (60.0%) scored between 70-84, categorized as "Good," while 11 students (36.7%) achieved scores between 85-100, falling into the "Excellent" category. Only 1 student (3.3%) was classified as "Very Poor," indicating an overall high level of value internalization among participants.

**Table 1.** Cognitive Test Result of Grade V-A Students

Score Interval	Category	Frequency	Percentage	Mean Score in Category
85 - 100	Excellent	18	60.0%	91.2
70- 84	Good	11	36.7%	76.8
55 - 69	Satisfactory	0	0.0%	-
46 - 54	Poor	0	0.0%	-
0 - 45	Very Poor	2	6.7%	0
Total		30	100%	82.3

*Source : Researcher's own data proccesing, 2025.*

**Table 1.** Affective Assessment Results of Grade V-A Students

Score Interval	Category	Frequency	Percentage	Mean Score in Category
85 - 100	Excellent	11	36.7%	89.3
70- 84	Good	18	60.0%	77.2
55 - 69	Satisfactory	0	0.0%	-
46 - 54	Poor	0	0.0%	-
45 - 0	Very Poor	1	3.3%	42
Total			100%	78.9

*Source: Researcher's own data processing, 2025.*

Analysis of the three affective dimensions revealed varying levels of internalization: cultural appreciation (mean: 81.2, SD: 8.9), social empathy (mean: 78.1, SD: 10.3), and civic responsibility (mean: 77.4, SD: 11.2). These findings suggest that students most strongly embraced cultural appreciation values, followed by social

empathy and civic responsibility (Ifdaniyah et al., 2024; Muthi'ah et al., 2023; Wati Sukmawati et al., 2023).

Cross-tabulation analysis revealed a moderate positive relationship between cognitive and affective performance. Among students scoring "Excellent" cognitively, 8 (44.4%) also achieved "Excellent" affectively, while 10 (55.6%) scored "Good" affectively. For students with "Good" cognitive performance, 3 (27.3%) achieved "Excellent" affectively, and 8 (72.7%) maintained "Good" affective scores. This correlation coefficient of  $r = 0.58$  suggests that cognitive understanding and affective internalization are moderately related but represent distinct learning domains.

**Tabel 3.** Cross-tabulation of Cognitive and Affective Performance

Cognitive Category	Affective Excellent	Affective Good	Affective Very Poor	Total
Excellent	8 (44.4%)	10 (55.6%)	0 (%)	18
Good	3 (27.3%)	8 (72.7%)	0 (%)	11
Very Poor	0 (0%)	0 (%)	1 (100%)	1
Total	11	18	1	30

*Source: Researcher's own data processing, 2025*

To complement the quantitative findings, brief reflection statements were collected from students, providing insight into their learning experience. Student A (cognitive: excellent, affective: excellent) shared: "I learned that Indonesia has many different cultures, and that makes us strong. I want to learn more about my friends' traditions." Student B (cognitive: good, affective: excellent) reflected: "Even though we are different, we can still be good friends. My family is from Batak, but I have friends from Java and Betawi, and we help each other." Student C (cognitive: excellent, affective: good) noted: "I understand the material well, but sometimes I still feel more comfortable with people from my own background."

These qualitative insights reveal that high cognitive performance does not automatically translate to high affective engagement, supporting the quantitative correlation findings. Students demonstrated varying levels of comfort with diversity despite similar academic understanding, highlighting the complexity of civic education outcomes in multicultural contexts. Although detailed demographic data were limited due to privacy considerations, preliminary analysis revealed no significant performance differences between male students ( $n=16$ , cognitive mean: 81.8, affective mean: 78.2) and female students ( $n=14$ , cognitive mean: 82.9, affective mean: 79.8). However, these findings should be interpreted cautiously due to the small sample size and lack of statistical power testing.

The study acknowledges several potential biases: (1) Two students absent during assessment may have systematically different characteristics from participants; (2) Social desirability bias may have influenced affective responses; (3) The single-school

---

sample limits generalizability across different socioeconomic contexts. Future research should incorporate larger, more diverse samples and control for these potential confounding variables.

The results demonstrate that Grade V-A students at State Elementary School Batu Ampar 12 Pagi achieved strong performance in both cognitive (mean: 82.3) and affective (mean: 78.9) domains related to Self-Identity and My Environment civic education content. While cognitive and affective outcomes show moderate correlation ( $r = 0.58$ ), the distinct patterns suggest that knowledge acquisition and value internalization require different pedagogical approaches. The integration of quantitative performance data with qualitative student reflections provides a more comprehensive understanding of learning outcomes, revealing the nuanced relationship between understanding multicultural concepts and embracing diverse civic values in practice.

## Discussion

The results shown above indicate that most grade V-A students at State Elementary School Batu Ampar 12 Pagi have cognitively understood the Self-Identity and My Environment material. With 18 students in the Excellent category and 11 students in the Good category, this shows that students' cognitive understanding of the Self-Identity and My Environment material is quite high (Saputri et al., 2024; Sukmawati, 2021; Sulistiani et al., 2024). These results are consistent with the notion that Civic Education in primary school is crucial for building basic knowledge and values related to identity and citizenship. However, cognitive achievement alone cannot fully represent students' civic readiness. Therefore, it is necessary to also examine how affective aspects complement this understanding and influence student behavior.

Meanwhile, non-test assessment shows that 18 students fall into the Good category, while 11 students are in the Excellent category. Only one student was classified in the Very Poor category regarding their attitude toward this material. This finding aligns with studies showing that PPKn implementation at the elementary school level effectively fosters multicultural values and encourages students to internalize civic virtues such as respect and cooperation in daily life (Selfi et al., 2024). Such practices have been proven to support the cultivation of cultural awareness and character development among young learners. However, it remains unclear whether these affective responses are influenced by students' home environments or cultural backgrounds, which were not controlled in this study. Additionally, future research should explore whether these values are retained over time or vary depending on classroom climate and teaching methods. Although this study indicates positive affective outcomes, the absence of inferential testing limits conclusions about the significance of these findings across broader contexts.

---

---

This study reveals a balance between students' cognitive understanding and their attitudes toward the material. It demonstrates that the learning process is effective not only in transferring knowledge but also in instilling character values. Students not only display cognitive understanding of the material but also reflect good attitudes toward the values contained in the learning process (Aulia et al., 2024; Fauziah et al., 2023; Hartomo et al., 2024; Sukmawati, 2023). This finding aligns with the broader goals of Civic Education, which not only target cognitive knowledge acquisition but also emphasize character development, national identity, civic responsibility, and social-emotional growth as essential educational outcomes. This perspective is supported by (Japar et al., 2023), who argue that integrating multicultural principles into Civic Education enhances students' civic skills, encourages respect for cultural differences, and equips learners to engage responsibly in pluralistic societies. Curricularly, it aims to enhance personal capabilities to become good, intelligent, active, and responsible Indonesian individuals (Puspa Dianti, 2014). However, further investigation is needed to identify whether this balance is consistent across different school contexts or specific to this sample. The descriptive nature of the analysis limits the ability to determine the strength of association between understanding and attitudes.

Theoretically, this study supports sociocultural and multicultural perspectives, which emphasize that identity and values are shaped through interaction with diverse environments. The classroom context at State Elementary School Batu Ampar 12 Pagi, which reflects Indonesia's multicultural society, provides fertile ground for civic learning. However, the use of only descriptive statistics limits the generalizability of the findings. Bias may also arise from the exclusion of absent students or uncontrolled variables, which could affect the consistency of the results. These limitations should be acknowledged to avoid overestimating the study's impact.

Future research should adopt more robust methods such as mixed-method approaches, psychometric testing, or longitudinal tracking to strengthen the evidence base. Comparative studies involving multiple schools with different demographic profiles would provide richer insights into how Civic Education functions in various contexts. Researchers may also explore how technology-based learning tools can enhance civic engagement and value internalization. In addition, more theoretical innovation is needed to connect affective civic learning with broader educational psychology and cultural identity frameworks. Strengthening both methodological and conceptual dimensions will ensure that Civic Education remains responsive to the demands of an increasingly diverse and complex society.

## Conclusion

The results of this study show that Grade V-A students at State Elementary School Batu Ampar 12 Pagi demonstrate strong cognitive understanding and positive

---

affective attitudes regarding the “Self-Identity and My Environment” material in Civic Education. These outcomes reinforce the importance of using multidimensional assessments that integrate cognitive tests with affective instruments to support holistic character education. In practical terms, this highlights the need for teachers to adopt affective assessment tools, such as attitude scales or reflection journals as part of daily classroom evaluation. Furthermore, it aligns with Indonesia’s Merdeka Belajar curriculum reform, which emphasizes not only knowledge acquisition but also the development of civic values like empathy, cultural tolerance, and social responsibility from early grades. However, given the study’s descriptive design, small sample size, and lack of demographic segmentation, the results should be interpreted cautiously. Future research should expand to broader and more diverse settings, ideally using mixed-method or longitudinal approaches, and grounded in culturally responsive civic education frameworks to deepen understanding of identity development in multicultural contexts.

## Acknowledgments

The authors express their deepest gratitude to the principal, teachers, and staff of State Elementary School Batu Ampar 12 Pagi for all the support and assistance provided during this research. We also extend our thanks to all grade V-A students who participated enthusiastically and actively in this research. Additionally, the authors wish to express gratitude to the Faculty of Teacher Training and Education at Universitas Muhammadiyah Prof. Dr. HAMKA for the guidance and encouragement provided. The authors also thank family and friends who provided support and motivation so that this research could be completed successfully.

## Authors’ Note

The authors declare that there is no conflict of interest regarding the publication of this article. The authors confirmed that the paper was free of plagiarism.

## References

Dianti, P. (2016). Integrasi pendidikan karakter dalam pembelajaran pendidikan kewarganegaraan untuk mengembangkan karakter siswa. *Jurnal Pendidikan Ilmu Sosial*, 23(1). <https://doi.org/10.17509/jpis.v23i1.2062>

Fauziah, N., & Sukmawati, W. (2023). Stacking analysis of higher thinking skills of class V elementary school students on the material of movement organs using the RADEC model. *Jurnal Penelitian Pendidikan IPA*, 9(1), 1-4. <https://doi.org/10.29303/jppipa.v9i1.3926>

Febianti, F. A., & Sukmawati, W. (2024). Improving students’ science literacy skills through treasure hunting games with problem-based learning model. *Jurnal Penelitian Pendidikan IPA*, 10(9), 6363-6375. <https://doi.org/10.29303/jppipa.v10i9.7996>

---

Fitria, A., & Sukmawati, W. (2024). The influence of magnetic media usage on improving reading literacy skills in material understanding of objects in second grade elementary school. *Jurnal Penelitian Pendidikan IPA*, 10(9), 6426-6433. <https://doi.org/10.29303/jppipa.v10i9.7991>

Fitria, M. N., & Sukmawati, W. (2022). Analisis perbedaan hasil belajar pada pembelajaran matematika secara daring dan luring siswa kelas V SDN Tegal Alur 21 Petang. *Ideas: Jurnal Pendidikan, Sosial, dan Budaya*, 8(3), 833-840. <https://doi.org/10.32884/ideas.v8i3.853>

Hartomo, R. M., & Sukmawati, W. (2024). The effect of digital flipbook media on improving science literacy on human digestive system materials among elementary school students. *Jurnal Penelitian Pendidikan IPA*, 10(9), 6260-6270. <https://doi.org/10.29303/jppipa.v10i9.7994>

Ifdaniyah, N., & Sukmawati, W. (2024). Analysis of changes in students' science literacy ability in class V elementary school science learning using the RADEC model. *Jurnal Penelitian Pendidikan IPA*, 10(2), 681-688. <https://doi.org/10.29303/jppipa.v10i2.3952>

Istiqomah, N., & Sukmawati, W. (2023). Stacking analysis of the mastery of science concepts in the RADEC learning model for grade IV elementary students. *Jurnal Penelitian Pendidikan IPA*, 9(10), 7993-8000. <https://doi.org/10.29303/jppipa.v9i10.3999>

Izzati, T. G., & Sukmawati, W. (2024). Increasing science literacy through make a match learning media on human growth materials in class V elementary school. *Jurnal Penelitian Pendidikan IPA*, 10(9), 6541-6551. <https://doi.org/10.29303/jppipa.v10i9.7995>

Japar, M., Fadhillah, D. N., Kardiman, Y., & Kenedi, A. K. (2023). Teaching civic skills through multicultural education in Indonesia. In *Proceedings of ICLIQE* (pp. 1033-1045). [https://doi.org/10.2991/978-2-38476-114-2\\_95](https://doi.org/10.2991/978-2-38476-114-2_95)

Kusnadi, N. F., & Sukmawati, W. (2023). Analysis of changes in the level of difficulty of elementary school students in learning the RADEC model on the concept of energy transformation using the Rasch Model. *Jurnal Penelitian Pendidikan IPA*, 9(SI), 1121-1127. <https://doi.org/10.29303/jppipa.v9ispecialissue.4036>

Muthi'ah, N. M., & Sukmawati, W. (2023). Racking analysis instrument mastery test concepts in learning science using the RADEC model in elementary school students. *Jurnal Penelitian Pendidikan IPA*, 9(SI), 1137-1143. <https://doi.org/10.29303/jppipa.v9ispecialissue.3976>

Novianti, R., Aisyah, W. N., & Sukmawati, W. (2023). Analysis of students' answer errors on understanding the energy concept in conceptual change text (CCT)-based learning. *Jurnal Penelitian Pendidikan IPA*, 9(2), 505-508. <https://doi.org/10.29303/jppipa.v9i2.2049>

Nurliana, N., & Sukmawati, W. (2023). Stacking analysis on the application of the RADEC model to the creativity of fifth grade elementary school students on water cycle material. *Jurnal Penelitian Pendidikan IPA*, 9(8), 5964-5970. <https://doi.org/10.29303/jppipa.v9i8.3951>

OECD. (2021). *Social and emotional skills: Well-being, connectedness and success*. OECD Publishing. <https://doi.org/10.1787/92a11084-en>

---

---

Putri, N. T., & Sukmawati, W. (2024). Improving science literacy in elementary schools through the application of the RADEC model. *Jurnal Penelitian Pendidikan IPA*, 10(8), 6230–6238. <https://doi.org/10.29303/jppipa.v10i8.7993>

Putri, R. S. Y. P., Kinanti, A. L. S., Fahmudita, A., & Kharisma, A. I. (2024). Analisis Implementasi Nilai Pendidikan Multikultural dalam Pembelajaran PPKN Kelas V Sekolah Dasar. *Journal of Contemporary Issue in Elementary Education*, 2(2), 101–108. <https://doi.org/10.33830/jciee.v2i2.9451>

Ramadhani, I. N., & Sukmawati, W. (2022). Analisis pemahaman literasi sains berdasarkan gender dengan tes diagnostik three-tier multiple choice. *Ideas: Jurnal Pendidikan, Sosial, dan Budaya*, 8(3), 781–790. <https://doi.org/10.32884/ideas.v8i3.860>

Saputri, A. L., & Sukmawati, W. (2024). The influence of the team games tournament (TGT) learning model assisted by Wordwall on the scientific literacy of class V elementary school students. *Jurnal Penelitian Pendidikan IPA*, 10(7), 3787–3798. <https://doi.org/10.29303/jppipa.v10i7.7992>

Schulz, W., Fraillon, J., Losito, B., Agrusti, G., Ainley, J., Damiani, V., & Friedman, T. (2023). *IEA International civic and citizenship education study 2022 assessment framework*. Springer. <https://doi.org/10.1007/978-3-031-20113-4>

Sukmawati, W. (2020). Techniques adopted in teaching students organic chemistry course for several years. *Jurnal Inovasi Pendidikan IPA*, 6(2), 247–256. <https://doi.org/10.21831/jipi.v6i2.38094>

Sukmawati, W. (2021). Is conceptual learning based on conceptual change text (CTT) effectively applied to PGSD students' science classes? *Jurnal Inovasi Pendidikan IPA*, 7(2), 171–181. <https://doi.org/10.21831/jipi.v7i2.44034>

Sukmawati, W. (2023). Analysis of changes in students' scientific literacy ability after attending lectures using the RADEC model. *Jurnal Penelitian Pendidikan IPA*, 9(3), 1039–1044. <https://doi.org/10.29303/jppipa.v9i3.2846>

Sukmawati, W., & Wahjusaputri, S. (2024). Integrating RADEC model and AI to enhance science literacy: Student perspectives. *Jurnal Penelitian Pendidikan IPA*, 10(6), 3080–3089. <https://doi.org/10.29303/jppipa.v10i6.7557>

Sukmawati, W., Kadarohman, A., Sumarna, O., & Sopandi, W. (2021a). Analysis of reduction of COD (Chemical Oxygen Demand) levels in tofu waste using activated sludge method. *Moroccan Journal of Chemistry*, 9(2), 339–345. <https://doi.org/10.48317/IMIST.PRSM/morjchem-v9i2.27586>

Sukmawati, W., Sari, P. M., & Yatri, I. (2022). Online application of practicum video based on local wisdom to improve student's science literacy. *Jurnal Penelitian Pendidikan IPA*, 8(4), 2238–2244. <https://doi.org/10.29303/jppipa.v8i4.1940>

Sulistiani, N. A., & Sukmawati, W. (2024). The relationship between e-book material on grouping animals and scientific literacy ability of elementary school students. *Jurnal Penelitian Pendidikan IPA*, 10(7), 3913–3919. <https://doi.org/10.29303/jppipa.v10i7.8248>

UNESCO. (2019). *Global citizenship education: Taking it local*. UNESCO Publishing.

Wahjusaputri, S., Nastiti, T. I., Bunyamin, B., & Sukmawati, W. (2024). Development of artificial intelligence-based teaching factory in vocational high schools in

---

Central Java Province. *Journal of Education and Learning (EduLearn)*, 18(4), 1234–1245. <https://doi.org/10.11591/edulearn.v18i4.21422>

Wahjusaputri, S., Sukmawati, W., Nastiti, T. I., & Noorlatipah, V. (2022). Strengthening teacher pedagogical literacy after the COVID-19 pandemic in vocational secondary education in Banten Province. *Jurnal Pendidikan Vokasi*, 12(2), 181–188. <https://doi.org/10.21831/jpv.v12i2.47119>

Wati, D. R., & Anggriani, M. (2024). Membangun karakter bangsa melalui pembelajaran PKN di sekolah dasar: Tantangan dan strategi. *Jurnal Pendidikan Guru Sekolah Dasar*, 1(3), 13–20. <https://doi.org/10.47134/pgsd.vii3.562>