



Profiling Elementary Students' Emotional Intelligence and Sustainability Literacy as a Basis for Integrative Curriculum Development

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Article Info	Abstract
Keywords: <i>elementary education; emotional intelligence; integrative learning; sustainability literacy</i> Received: 26/05/2026 Revised: 29/05/2026 Accepted: 03/06/2026	Background: Emotional Intelligence (EI) and Sustainability Literacy (SL) are essential competencies for preparing students to face social and environmental challenges in the 21st century. However, elementary school students often demonstrate adequate conceptual understanding without fully internalizing emotional regulation skills and sustainable behaviors in daily life. Methods: This study employed a quantitative descriptive-correlational design involving fifth-grade students at SD Islam Al-Falah Bojonggede. A total of 49 students participated in the Emotional Intelligence (EI) assessment, while 51 students participated in the Sustainability Literacy (SL) assessment. Participants were selected purposively to represent upper elementary students who had previously been exposed to character and environmental education. Data were collected using validated questionnaires adapted from Goleman's Emotional Intelligence framework and UNESCO's Sustainability Literacy framework, covering five EI dimensions and three SL dimensions. Descriptive statistics were used to profile students' EI and SL levels, while Pearson product-moment correlation was conducted using paired data from 39 students who completed both instruments. Results: The findings revealed that students' Emotional Intelligence was generally in the moderate to high category, with a mean score of 55.39. Motivation emerged as the strongest EI dimension ($M = 3.03$), while emotional regulation showed the lowest score ($M = 2.49$). Sustainability Literacy obtained a mean score of 32.24, with sustainability knowledge identified as the strongest dimension, whereas sustainability skills and mindset remained relatively low. These results indicate a gap between students' conceptual understanding and the practical internalization of emotional regulation, sustainability values, and sustainable behaviors. Pearson correlation analysis showed a positive and statistically significant relationship between Emotional Intelligence and Sustainability Literacy ($r = 0.440$, $p = 0.005$, $n = 39$). Conclusion: The study concludes that elementary school students demonstrated moderate to high Emotional Intelligence and adequate Sustainability Literacy, particularly in motivation and sustainability knowledge. However, emotional regulation, sustainability skills, and sustainability-oriented

mindsets remained underdeveloped. The positive and statistically significant relationship between Emotional Intelligence and Sustainability Literacy suggests that emotional competencies may support students' sustainability-related knowledge, attitudes, and behaviors. These findings underscore the importance of integrating emotional and sustainability competencies in primary education.

INTRODUCTION

Despite growing recognition of the importance of holistic education, primary education systems continue to prioritize cognitive achievement over socio-emotional and sustainability-related competencies. This imbalance limits students' ability to cope with academic challenges, regulate emotions, and engage meaningfully in social and environmental contexts. Recent global educational challenges have further emphasized the importance of resilience, adaptability, and emotional well-being as core learning outcomes (UNICEF, 2020). In response, future-oriented education systems are expected to equip students not only with cognitive abilities but also with social, emotional, and sustainability competencies to address complex global challenges (World Economic Forum, 2020).

Emotional Intelligence (EI) is a fundamental competency that supports both academic success and social development, encompassing the abilities to recognize and regulate emotions, maintain self-motivation, empathize with others, and build positive social relationships (Goleman, 1995). These dimensions form the foundation of early character development; however, their integration into classroom practices remains limited and often unsystematic. Goleman (1995) further emphasized that emotional competence contributes more significantly to life success than cognitive intelligence (IQ). In primary education, students with well-developed emotional skills tend to demonstrate prosocial behavior, collaborate effectively, and maintain emotional stability when facing challenges (Brackett & Rivers, 2014). However, effective implementation of Social Emotional Learning (SEL) requires supportive learning environments, relationship-centered pedagogy, and formative assessment practices (Ferreira et al., 2020). It should be approached as a whole-school strategy to ensure long-term impact (Elias, 2019). Nevertheless, these competencies are not consistently embedded within instructional practices, indicating a gap between theoretical importance and practical implementation.

Globally, education systems have increasingly emphasized Social Emotional Learning (SEL) as a strategic response to 21st-century challenges. The OECD (2021) highlights that SEL significantly enhances students' well-being, engagement, and adaptability, while studies by Cipriano and Rappolt-Schlichtmann (2021) show that integrating SEL into elementary education improves academic resilience and reduces behavioral problems (CASEL, 2020). In Indonesia, however, the implementation of these competencies remains fragmented, particularly in relation to the Profil Pelajar Pancasila, which promotes values such as empathy, collaboration, and global awareness. This suggests a clear gap between policy expectations and classroom realities, where socio-emotional competencies are acknowledged but not yet effectively operationalized.

In parallel, Sustainability Literacy (SL) has emerged as a critical competency aligned with global agendas such as the Sustainable Development Goals (SDGs). SL encompasses interconnected dimensions of knowledge, skills, and mindset that promote sustainable thinking and behavior (UNESCO, 2017). Furthermore, sustainability literacy is closely related to students' sustainability consciousness, reflecting their awareness, attitudes, and behaviors toward environmental issues (Berglund et al., 2014). However, UNESCO (2020) emphasizes that education for sustainable development should move beyond knowledge acquisition toward transformative

action and behavioral change. Despite this, sustainability education at the primary level often remains superficial and knowledge-oriented, with limited opportunities for experiential learning and value internalization. Effective sustainability education requires participatory and context-based approaches that connect students' local experiences with broader global issues (Olsson, Gericke, & Chang Rundgren, 2016; Michelsen & Fisher, 2022). The lack of meaningful integration between SDG-oriented content and students' lived experiences highlights a significant pedagogical gap.

The integration of Emotional Intelligence and Sustainability Literacy offers a synergistic approach to addressing these challenges by fostering holistic learning that combines emotional, social, and environmental dimensions. Emotional intelligence supports self-regulation, empathy, and collaboration skills that are essential for engaging in sustainability practices, while sustainability learning provides authentic contexts for emotional development and reflective action. The integration of social-emotional learning with sustainability education is particularly important, as emotional competencies contribute to the development of environmental identity and responsible behavior (Hargreaves & Podemski, 2019). Empirical studies indicate that integrating SEL with sustainability education enhances academic performance, emotional well-being, and social responsibility (Weissberg et al., 2015; Taylor et al., 2022). However, such integrative approaches remain underdeveloped, particularly within primary education settings in Indonesia.

Currently, sustainability education in Indonesian primary schools is largely declarative, focusing on the transmission of knowledge rather than practical engagement or the development of sustainable values. At the same time, emotional regulation and socio-emotional competencies have not been fully embedded in everyday classroom practices, despite being emphasized in national character education frameworks. As a result, learning remains predominantly cognitive, lacking the reflective and experiential dimensions necessary to cultivate sustainable attitudes and behaviors. This condition reflects a misalignment between curriculum goals and actual pedagogical practices.

To address these gaps, it is essential to begin with a comprehensive mapping of students' Emotional Intelligence and Sustainability Literacy levels. Such profiling enables educators to identify students' developmental needs, existing competencies, and contextual challenges, thereby providing a strong empirical foundation for designing targeted and evidence-based interventions (Brackett & Rivers, 2014; OECD, 2021). Without this initial mapping, curriculum design risks being misaligned with students' real conditions and learning needs. Therefore, this study aims to describe elementary students' levels of emotional intelligence and sustainability literacy as a foundational step toward developing an integrative curriculum that balances affective, cognitive, and psychomotor domains, while fostering resilience, empathy, and a strong commitment to environmental sustainability.

METHODS

This study employed a quantitative descriptive-correlational design to analyze the profiles of Emotional Intelligence (EI) and Sustainability Literacy (SL) among elementary school students. This approach enables the systematic measurement and interpretation of students' achievement levels based on empirical numerical data (Creswell & Creswell, 2018) and is widely used to describe variables without examining causal relationships (Fraenkel, Wallen, & Hyun, 2012). It allows for an objective representation of variables in natural classroom settings and is particularly suitable for competency mapping and program evaluation studies (Taylor, Oberle, Durlak, & Weissberg, 2022).

However, as a descriptive design, it does not establish causal relationships; therefore, the findings should be interpreted as patterns and distributions rather than cause and effect relationships.

The participants were fifth-grade students from a private elementary school selected through purposive sampling to ensure their relevance to the research objectives, particularly because they had prior exposure to environmental and character education. A total of 49 students completed the Emotional Intelligence (EI) assessment, while 51 students completed the Sustainability Literacy (SL) assessment. The slight difference in sample size was due to incomplete responses on one of the instruments. The students were relatively homogeneous in age, ranging from 10 to 11 years, and came from a similar socioeconomic background. This context was considered appropriate because the school provides structured programs related to character development and sustainability education. For the correlational analysis, only paired data from students who completed both instruments were included.

Data were collected using two questionnaires adapted from established theoretical frameworks. Prior to administration, both instruments were reviewed for linguistic clarity and contextual suitability. The items were translated into the local language and adjusted to ensure age appropriate comprehension.

1. The Emotional Intelligence Questionnaire consisted of 20 items measuring five core dimensions: self-awareness, emotional regulation, motivation, empathy, and social skills (Goleman, 1995). Responses were recorded using a 4-point Likert scale ranging from Never (1) to Always (4).

The internal consistency of the instrument in this study was acceptable, with a Cronbach's alpha coefficient of **0.791**, indicating satisfactory reliability for measuring students' emotional intelligence. This result is consistent with previous studies that have reported adequate reliability for similar EI constructs (Brackett, Rivers, & Salovey, 2011; Taylor et al., 2022).

2. The Sustainability Literacy Questionnaire included 13 items grouped into three dimensions: knowledge of environmental issues, skills in applying sustainability principles, and a mindset reflecting personal commitment to sustainable living (UNESCO, 2017). Each item used a 4-point Likert scale to measure the frequency and intensity of sustainability-related attitudes and behaviors.

The instrument also demonstrated acceptable internal consistency, with a Cronbach's alpha coefficient of **0.791**, indicating that it was sufficiently reliable for assessing students' sustainability literacy. Reflective, statement-based instruments of this type have been shown to effectively capture students' sustainability literacy through self-assessment and value reflection (Michelsen & Fisher, 2022). The instruments were translated into the local language and reviewed by experts to ensure clarity, cultural relevance, and age appropriate comprehension.

Data collection was conducted on site at the school with the assistance of classroom teachers. Prior to administration, the researcher explained the objectives and procedures to ensure that all participants understood the items clearly. The average completion time for each questionnaire was approximately 30-40 minutes. Prior to data collection, ethical considerations were carefully addressed. Permission to conduct the study was obtained from the school administration. In addition, informed consent was secured from students' parents or guardians, and participation was voluntary. Students were assured that their responses would remain confidential and used solely for research purposes.

Data were analyzed using descriptive and correlational statistics. Descriptive analysis included the calculation of mean, standard deviation, minimum–maximum scores, and achievement categories to describe students' Emotional Intelligence (EI) and Sustainability Literacy (SL) profiles. The achievement categories were interpreted based on the scoring criteria used for each instrument to ensure consistency with the characteristics of the EI and SL measures.

In addition, Pearson product-moment correlation was conducted to examine the relationship between EI and SL using only valid paired data from students who completed both questionnaires. The correlation coefficient, degree of freedom, *t* statistic, and *p*-value were calculated to determine the direction, strength, and statistical significance of the relationship. All analyses were performed using Microsoft Excel with automated formulas to ensure consistency and minimize computational errors.

RESULT AND DISCUSSION

Descriptive analysis indicates that students' Emotional Intelligence (EI) scores ranged from 38 to 80 ($M = 55.39$; $SD = 7.45$), reflecting moderate variability across participants. The distribution of students' emotional intelligence categories is presented in Figure 1.

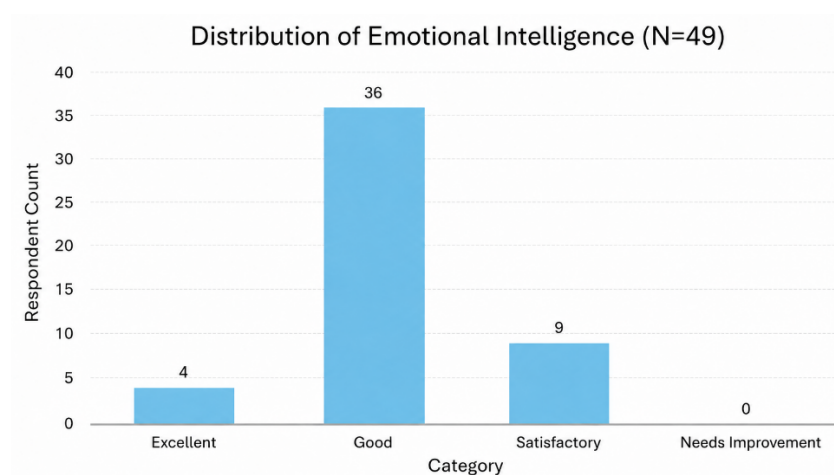


Figure 1. Distribution of Emotional Intelligence Categories

As shown in Figure 1, most students fall into the “Good” category, indicating that basic emotional competencies are generally established, although only a small proportion of students reach the “Excellent” level. The average scores across EI sub-dimensions are illustrated in Figure 2.

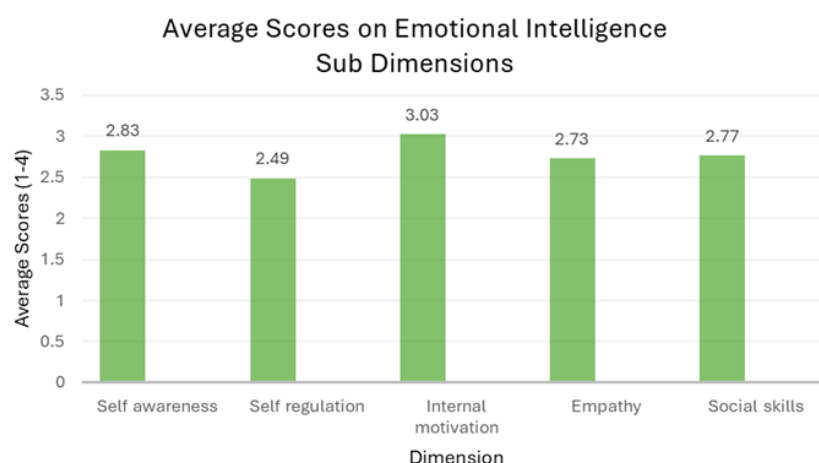


Figure 2. Average Scores on Emotional Intelligence Sub Dimension

Figure 2 shows that internal motivation ($M = 3.03$) has the highest mean score, followed by self-awareness ($M = 2.83$), social skills ($M = 2.77$), and empathy ($M = 2.73$). In contrast, self-

regulation recorded the lowest mean score ($M = 2.49$), indicating that students still experience challenges in managing emotional responses in real life situations.

Students' Sustainability Literacy (SL) scores ranged from 21 to 42 ($M = 32.24$; $SD = 3.97$), indicating a generally adequate but uneven level of understanding. The distribution of sustainability knowledge levels is presented in Figure 3.

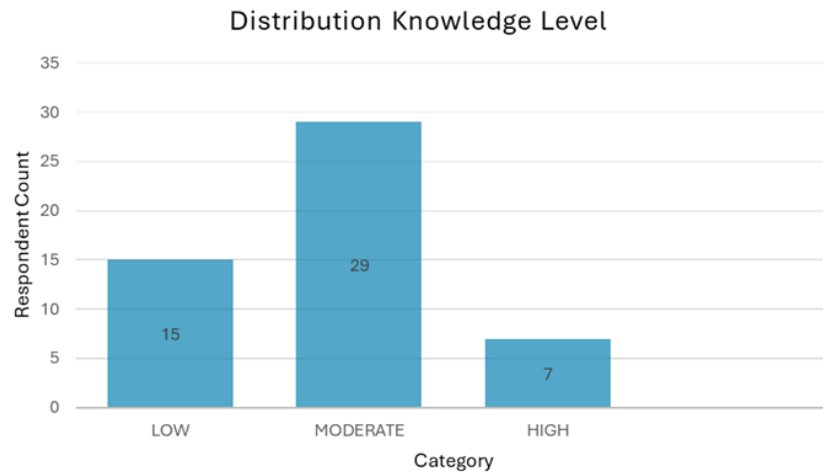


Figure 3. Distribution of Sustainability Literacy-Knowledge Level

As shown in Figure 3, most students demonstrate moderate levels of conceptual understanding, indicating familiarity with basic environmental concepts. The distribution of sustainability skills is presented in Figure 4.



Figure 4. Distribution of Sustainability Literacy-Skills Level

Figure 4 indicates that students ability to apply sustainability principles in daily life remains limited, as a considerable proportion of students fall into the lower categories. The distribution of sustainability mindset is presented in Figure 5.

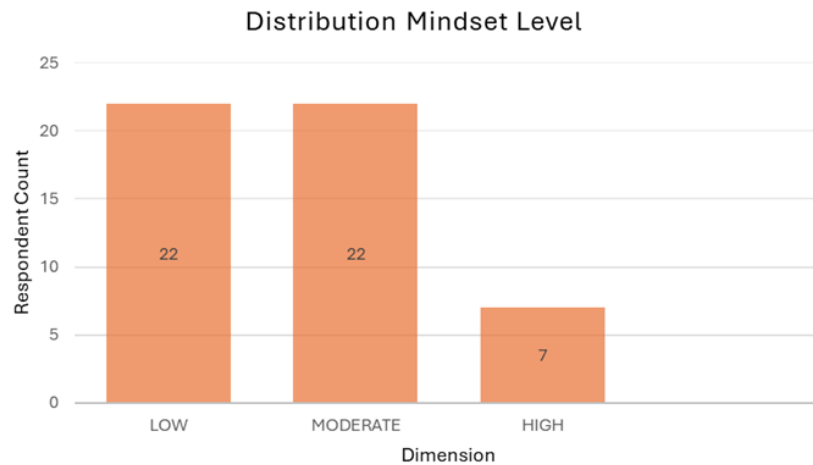


Figure 5. Distribution of Sustainability Literacy-Mindset Level

As illustrated in Figure 5, 43% of students are categorized as low, 43% as moderate, and only 14% as high. This finding suggests that students have not yet fully internalized sustainability values, highlighting a gap between cognitive understanding and behavioral or affective engagement.

When considered together, Emotional Intelligence (EI) and Sustainability Literacy (SL) reveal a consistent pattern: students tend to perform better in conceptual and cognitive domains than in applied and internalized dimensions. In EI, this is reflected in stronger motivation and awareness but weaker emotional regulation; in SL, it is reflected in stronger knowledge but weaker skills and mindset. To further examine the relationship between the two variables, a Pearson product-moment correlation analysis was conducted using valid paired data from 39 students. The results showed a positive and statistically significant correlation between Emotional Intelligence and Sustainability Literacy, $r(37) = 0.440$, $p = 0.005$. This indicates a moderate positive relationship, suggesting that students with higher emotional intelligence tend to demonstrate higher sustainability literacy. However, the moderate strength of the correlation also indicates that sustainability literacy is likely influenced by other factors beyond emotional intelligence, such as learning experiences, school programs, environmental exposure, and family or community practices.

The findings of this study reinforce Goleman's (1995) assertion that Emotional Intelligence (EI) is a set of competencies that can be developed through structured learning. The relatively strong performance in motivation alongside weaker emotional regulation suggests that affective readiness is present, but regulatory skills require more intentional pedagogical support. This extends previous research by demonstrating that emotional competencies at the elementary level may develop unevenly across dimensions, particularly in contexts where structured SEL implementation is limited.

In the domain of Sustainability Literacy (SL), the results confirm a persistent gap between conceptual understanding and practical application. Students demonstrated sufficient knowledge of sustainability concepts; however, their sustainability competence remained underdeveloped because the skills and mindset required to apply this knowledge in meaningful and sustainable real-world actions had not been fully established. As a result, students may face difficulties in translating sustainability knowledge into responsible decision-making, problem-solving, and sustainable behaviors in everyday life.

This supports previous findings that knowledge alone is insufficient to drive sustainable behavior (Tilbury, 2004). Furthermore, this finding aligns with recent studies showing that sustainability competencies in primary education often develop unevenly across knowledge, skills, and attitudes (Vesterinen & Ratinen, 2023). This imbalance occurs because sustainability education in many schools still emphasizes the transmission of conceptual knowledge rather than providing sufficient opportunities for experiential learning, critical reflection, and real-world problem-

solving. As a result, students may understand environmental and sustainability issues theoretically but have limited opportunities to practice sustainable behaviors, decision-making, and civic engagement (UNESCO, 2024; Vesterinen & Ratinen, 2023). In addition, younger learners are still developing higher-order thinking skills and self-regulation capacities, which are essential for translating sustainability knowledge into action (Wamsler et al., 2020).

The impact of this imbalance on student development is significant. When sustainability learning remains primarily knowledge-oriented, students may struggle to apply sustainability principles in everyday situations, limiting the development of responsible behaviors, environmental stewardship, and long-term commitment to sustainable lifestyles. Research suggests that students who develop sustainability skills and mindsets alongside conceptual understanding are more likely to demonstrate stronger sustainability competencies. These competencies encompass problem-solving abilities, collaborative action, systems thinking to address complex sustainability challenges, and pro-environmental behaviors that contribute to environmental stewardship and sustainable development (Brundiers et al., 2021; UNESCO, 2024). Therefore, educational approaches that integrate cognitive, emotional, and behavioral dimensions of sustainability are needed to foster transformative learning and support students in becoming active agents of sustainable development.

Compared to prior research, this study provides additional empirical evidence from the Indonesian primary education context, where sustainability learning remains predominantly knowledge-oriented. A key contribution of this study lies in identifying a similar developmental pattern in both Emotional Intelligence (EI) and Sustainability Literacy (SL), with students demonstrating stronger performance in cognitive dimensions than in applied and internalized competencies. Furthermore, the correlation analysis showed a positive and statistically significant relationship between Emotional Intelligence and Sustainability Literacy, $r(37) = 0.440$, $p = 0.005$, based on 39 valid paired data. This finding suggests that emotional competencies such as self-regulation, empathy, and motivation may support students in internalizing sustainability values and translating them into meaningful actions. Thus, this study highlights the potential role of Emotional Intelligence in supporting sustainability-related learning outcomes at the primary education level.

However, the moderate strength of the correlation indicates that Emotional Intelligence is not the sole determinant of Sustainability Literacy. Sustainability Literacy is a multidimensional construct that encompasses knowledge, awareness, attitudes, skills, and behaviors related to sustainability (Sanchez et al., 2025). Therefore, in addition to emotional competencies, students' sustainability literacy is likely influenced by various cognitive, behavioral, and contextual factors. Other factors, including instructional strategies, learning environments, and experiential learning opportunities, may play significant roles in shaping sustainability-related competencies. This finding aligns with the OECD (2021) framework, which emphasizes the integration of cognitive, social, and emotional competencies to address complex global challenges. It also suggests that improving sustainability literacy requires not only strengthening individual competencies but also transforming pedagogical approaches.

Compared to previous studies that examine EI and sustainability separately, this research highlights their potential interdependence within primary education. It suggests that integrating Social Emotional Learning (SEL) with sustainability education may enhance both emotional development and environmental responsibility. In this context, adopting more experiential and student-centered approaches becomes essential. Project-based learning, for instance, has been shown to enhance students' engagement and real-world understanding in environmental education contexts (Yolcu, 2023), thereby helping bridge the gap between conceptual knowledge and practical application.

Despite these contributions, several limitations should be acknowledged. The use of self-report instruments may introduce response bias, and the relatively small sample size limits the generalizability of the findings. Additionally, the descriptive design of the study does not allow for

causal interpretations. Therefore, future research should employ larger samples and more robust analytical approaches, such as longitudinal designs or experimental methods, to better understand the relationship between EI and SL.

In terms of practical implications, the findings highlight the need for a more systematic integration of SEL and sustainability education through experiential and reflective pedagogies. Teachers should be systematically trained in integrating Social Emotional Learning (SEL) with sustainability-oriented instructional strategies, particularly through approaches such as project-based and inquiry-based learning. At the policy level, embedding sustainability themes within SEL frameworks can support the development of holistic competencies aligned with the Pancasila Student Profile and broader global education goals.

CONCLUSION

This study concludes that elementary school students generally demonstrated moderate to high levels of Emotional Intelligence (EI), with motivation emerging as the strongest dimension. However, emotional regulation remained comparatively lower, indicating that students still faced challenges in managing stress, controlling emotional responses, and resolving interpersonal conflicts. In terms of Sustainability Literacy (SL), students showed adequate understanding of sustainability concepts, particularly in the knowledge dimension, while skills and mindset were less developed, suggesting that sustainability-related understanding had not yet been fully translated into practical actions and daily behaviors. The findings also revealed a positive and statistically significant relationship between Emotional Intelligence and Sustainability Literacy, $r(37) = 0.440$, $p = 0.005$, based on 39 valid paired data. This result suggests that students with higher Emotional Intelligence tend to demonstrate higher Sustainability Literacy, although the moderate strength of the relationship indicates that SL is likely influenced by other educational, social, and environmental factors. These findings highlight the importance of fostering both EI and SL in primary education as complementary competencies that support students' personal development and their capacity to respond to environmental and social challenges. Future research is recommended to examine instructional approaches that integrate emotional and sustainability competencies across different educational contexts.

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