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The Implementation of Social Studies Teaching Based on Education for Sustainable Development (ESD) and its Impact on Students' Environmental Awareness

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Abstrak: Penelitian ini bertujuan untuk menganalisis pembelajaran Ilmu Pengetahuan Sosial (IPS) berbasis *Education for Sustainable Development* (ESD) dan kesadaran lingkungan mahasiswa serta mengkaji kontribusi pembelajaran IPS dalam mendukung terbentuknya kesadaran lingkungan. Penelitian menggunakan pendekatan kuantitatif deskriptif dengan responden sebanyak 31 mahasiswa. Data dikumpulkan melalui kuesioner yang terdiri atas 20 pernyataan menggunakan skala Likert lima tingkat, kemudian dianalisis melalui skor rata-rata, persentase, dan interpretasi kategori. Hasil penelitian menunjukkan bahwa pembelajaran IPS berbasis ESD memperoleh persentase sebesar 75,54% dengan kategori baik, sedangkan kesadaran lingkungan mahasiswa memperoleh persentase sebesar 77,58% dengan kategori baik. Secara keseluruhan, kedua indikator memperoleh rata-rata sebesar 76,35% dan termasuk kategori baik. Temuan menunjukkan bahwa mahasiswa memberikan respons positif terhadap integrasi isu lingkungan, pembangunan berkelanjutan, serta keterkaitan aspek sosial, ekonomi, dan lingkungan dalam pembelajaran IPS. Penelitian ini berkontribusi terhadap pengembangan ilmu Pendidikan IPS dengan menunjukkan pentingnya pembelajaran yang kontekstual, partisipatif, dan berorientasi pada keberlanjutan sebagai upaya memperkuat pemahaman dan kesadaran lingkungan mahasiswa.

Kata kunci: ***Pembelajaran IPS, Education for Sustainable Development (ESD), Kesadaran Lingkungan, Pendidikan IPS, Pembangunan Berkelanjutan***

Abstract: *This study aims to analyze Social Studies learning based on Education for Sustainable Development (ESD) and students' environmental awareness, as well as to examine the contribution of Social Studies learning in supporting the development of environmental awareness. This research employed a descriptive quantitative approach involving 31 university students as respondents. Data were collected through a questionnaire consisting of 20 statements using a five-point Likert scale and were analyzed based on mean scores, percentages, and category interpretations. The results showed that Social Studies learning based on ESD obtained a percentage of 75.54%, categorized as good, while students' environmental awareness obtained 77.58%, also categorized as good. Overall, the two research indicators achieved an average percentage of 76.35%, which was classified as good. The findings indicate that students responded positively to the integration of environmental issues, sustainable development, and the interrelationship among social, economic, and environmental aspects in Social Studies learning. This study contributes to the development of Social Studies Education by demonstrating the importance of contextual, participatory, and sustainability-oriented learning in strengthening students' understanding and environmental awareness.*

Keywords: ***Social Studies Learning, Education for Sustainable Development (ESD), Environmental Awareness, Social Studies Education, Sustainable Development***

INTRODUCTION

The ecological crisis cannot be separated from social decisions, patterns of consumption, the distribution of resources, and society's relationship with the environment (Flatman, 2009). Issues such as waste, energy use, water conservation and the unequal distribution of the impacts of environmental change highlight the need for learning that links academic knowledge with public responsibility (Yulfiani & Karsiwan, 2025). In higher education, these issues demand interdisciplinary competencies as well as the ability to take action within a local context. Education must go beyond merely imparting an understanding of the term 'sustainability'; the learning process must also help students evaluate dilemmas and consider the consequences of their actions.

Education for Sustainable Development (ESD) positions learners as active participants in the learning process, expected to develop the knowledge, values, attitudes and skills required to make responsible decisions. The ESD 2030 framework emphasises the transformation of learning environments, the strengthening of educators' competencies, youth engagement, and community action (Oe et al., 2022; UNESCO, 2020). Consequently, the successful implementation of ESD cannot be reduced to the mere inclusion of environmental themes in the curriculum; learning experiences and opportunities for participation must also be taken into account.

The increasingly complex changes to the environment have become a key issue requiring attention in the field of education (Ekawati et al., 2025; UNESCO, 2017). Various environmental issues are not only related to ecological aspects but are also interlinked with the social and economic lives of communities (Fredricks et al., 2004; Ramírez et al., 2019). These conditions demonstrate that education plays a strategic role in building individuals' knowledge, attitudes and behaviours so that they are able to understand and respond to various environmental issues in a responsible manner. In this context, learning oriented towards sustainable development is important to develop, as it can link academic knowledge to the real-world issues faced by society and the environment.

Social Sciences education possesses characteristics that are relevant to developing students' understanding of these various issues. Social Sciences education not only examines human life within a social context but also explores the relationships between society, the economy and the environment (Sapriya, 2012). Therefore, the integration of the principles of Education for Sustainable Development (ESD) into Social Sciences education can serve as an approach to building students' understanding of the importance of development that strikes a balance between social, economic and environmental interests. In this study, ESD-based Social Sciences education is directed.

The issue of sustainability is a pedagogical concern in Social Sciences education that is closely linked to the subject matter (Serpa & Jos, 2024; Sterling, 2011). The interaction between humans and the environment can be studied through economic

decisions, public policy, consumer culture, social relations, community vulnerability and collective responsibility. Social Sciences education therefore provides a meeting point between understanding issues and examining options for action that impact communal life. The added value of Social Sciences lies in its ability to discuss the social dimensions of an ecological problem, rather than merely repeating information about environmental degradation.

It is important to examine the difference between teaching that presents real-world cases and teaching that involves students as analysers and designers of solutions. Case studies can initiate a thought process, but the opportunity to weigh up options, present reasons, and examine socio-ecological consequences determines the depth of the learning experience. Studies on sustainability competencies emphasise systems thinking, anticipatory thinking, normative thinking, strategic thinking, and interpersonal thinking as complementary skills (Wiek et al., 2011).

The urgency of ESD based social studies education is growing ever stronger, as an understanding of the environment must be accompanied by the development of individual awareness and responsibility. Environmental awareness is demonstrated not only through knowledge of the importance of environmental sustainability, but also through tangible behaviour in daily life, such as disposing of rubbish in the correct bins, reducing the use of single-use plastics, conserving water and electricity, and participating in environmental conservation activities (Karsiwan et al., 2023; Sitorus & Lasso, 2021). In the context of higher education, students play a vital role as individuals expected to apply knowledge and values of sustainability in both their academic and social lives. Consequently, social studies education must be directed not only towards achieving cognitive objectives but also towards fostering attitudes and behaviours that support environmental sustainability.

However, the implementation of ESD-based social studies education still needs to be developed in a more contextual and participatory manner. This indicates that there is still scope to strengthen the transformation of awareness from understanding and attitudes towards engagement and concrete, sustainable actions (Aryanti et al., 2025; Handayani et al., 2024). Given these circumstances, research into Social Studies learning based on Education for Sustainable Development (ESD) and its impact on students' environmental awareness is essential to obtain an empirical understanding of the relationship between.

From the perspective of sustainability competencies, knowledge of the relationship between humans and the environment is a prerequisite, not an end in itself. Systems thinking helps students recognise the interactions between social, economic and ecological factors, whilst anticipatory competencies encourage consideration of long-term consequences; and interpersonal competencies are necessary for discussing joint solutions. In social studies lessons, all three can be demonstrated through the examination of local case studies, guided dialogue, the analysis of public decision-making, and the design of evaluable actions (Wiek et al., 2011).

Meanwhile, environmental awareness is a construct that requires careful

explanation. Knowledge, normative beliefs, concern, intentions and behaviour which are not identical will influence the way students view the environment as a medium for learning through their interactions (Yudiyanto et al., 2021). An individual may support the idea of conservation but face constraints such as opportunity, habits, infrastructure or social norms when seeking to act. Kollmuss and Agyeman demonstrate that there are a number of barriers between knowledge/concern and pro-environmental behaviour (Kollmuss & Agyeman, 2002). Consequently, respondents' statements that they are willing to engage in environmental conservation cannot be directly interpreted as evidence of actual participation.

Ardoin's systematic review confirms that environmental education can produce cognitive and affective outcomes, whilst observed conservation outcomes require attention to local contexts, partnerships and action (Ardoin et al., 2020). These findings are relevant to the question of whether ESD based social studies learning provides students with the opportunity to move from simply reading about issues to engaging in dialogue and active participation. However, this literature does not automatically prove the effectiveness of the learning approach in this study's sample. Perceptions of the implementation of learning and environmental awareness need to be treated as two distinct areas of analysis. Students' perceptions capture the experiences they believe occurred during lectures, whilst self-reported awareness reflects beliefs and behavioural tendencies based on respondents' answers (Fariha et al., 2026; Wheaton et al., 2024). Although both can be presented together, the average of these two indicators does not indicate the strength of the relationship, the direction of causality, or changes over time. This distinction is important to ensure that the language of interpretation aligns with the research design.

This study stems from the need to obtain an initial mapping at an item level that is more informative than simply labelling the overall outcome as 'good'. For example, agreement regarding the use of real-life cases may coexist with lower responses regarding opportunities for discussion; beliefs regarding the responsibility to maintain the learning environment.

The ESD based social studies learning examined in this study is limited to students' perceptions of the integration of environmental issues, socio-economic-ecological interconnections, the presentation of case studies, participation in discussions, opportunities to express opinions, and opportunities for engagement in conservation. Environmental awareness is limited to responses regarding ecological responsibility, self-reported practices, and willingness to participate. These limitations counteract the tendency to treat a single aggregate figure as a comprehensive reflection of the quality of learning or environmental behaviour.

The study's contribution is primarily diagnostic and contextual: it describes the profile of students' responses and identifies aspects of learning and awareness that are relatively less prominent. This study does not claim to identify new mechanisms or prove the effectiveness of ESD, as the available evidence does not yet support such claims. The gap that can be addressed at the level of this study is the need for a detailed

description of ESD oriented social studies learning experiences and environmental awareness indicators measured together within a single group of students; it does not address a global gap in the literature that has been confirmed through a systematic review. This study aims to analyse ESD based social studies learning and students' environmental awareness, as well as to examine the contribution of social studies learning in fostering environmental awareness. The research findings are expected to contribute to the development of educational science.

Based on this framework, the study aims to (1) describe students' perceptions of ESD based social studies learning; (2) map self-reported environmental awareness using the available indicators; and (3) identify items that can be prioritised to strengthen participatory learning. Three research questions are posed: what are the profiles of the two indicators; which items achieved the highest and lowest scores; and what pedagogical implications can reasonably be drawn from these descriptive patterns?

METHOD

This study employs a quantitative descriptive approach combined with qualitative analysis (Sugiyono, 2020). This study was designed to provide an overview of the implementation of social studies lessons based on Education for Sustainable Development (ESD) and the level of environmental awareness amongst students. The data sources in this study were primary data obtained directly through questionnaires completed by the respondents. The research subjects comprised 31 students.

The data collection instrument used was a questionnaire consisting of 20 statements. Respondents' answers were measured using a five-point Likert scale, with response options comprising: 1) Strongly Agree (SS), 2) Agree (S), 3) Undecided (R), 4) Disagree (TS) and 5) Strongly Disagree (STS). This research instrument was grouped into two main indicators, namely ESD-Based Social Studies Learning (comprising 12 statements) and Students' Environmental Awareness (comprising 8 statements). The research procedure was carried out through the following systematic stages:

1. Preparation Stage: Developing a research instrument in the form of a questionnaire comprising 20 statements, divided into ESD-based social studies learning indicators and environmental awareness indicators.
2. Data Collection Stage: Distributing the questionnaire to 31 students as research respondents.
3. Data Processing Stage: Collecting the completed questionnaires, summarising the response scores based on the Likert scale, and calculating the mean score for each item and indicator.
4. Analysis and Reporting Stage: Analysing the percentage of scores, grouping them into assessment categories, and compiling a qualitative-descriptive discussion.

The data were analysed using quantitative descriptive analysis techniques by

calculating the average scores and achievement percentages for each indicator. The formula used to calculate the percentages is:

$$\text{Percentage} = \left(\frac{\text{Average Score}}{\text{Maximum Score}}\right) \times 100\%$$

The resulting percentages were then interpreted qualitatively into five assessment categories, namely: Very Good, Good, Fair, Poor, and Very Poor.

RESULTS AND DISCUSSION

Results

The results of this study were obtained by distributing a questionnaire to 31 students. This study aimed to gain an understanding of Social Studies learning based on Education for Sustainable Development (ESD) and students' environmental awareness. The research instrument consisted of 20 statements measured using a five-point Likert scale, namely Strongly Agree (SS), Agree (S), Undecided (R), Disagree (TS) and Strongly Disagree (STS).

The statements in the questionnaire were grouped into two main indicators, namely:

1. ESD-based Social Studies Learning (comprising 12 statements) which measures students' perceptions of the integration of environmental issues, their understanding of sustainable development, the interrelationship between social, economic and environmental aspects, critical thinking, and their involvement in environmental conservation.
2. Student Environmental Awareness (comprising 8 statements) relating to students' behaviour and responsibility in safeguarding the environment.

The data obtained were analysed using quantitative descriptive analysis by calculating the mean score and percentage for each indicator, and were then interpreted qualitatively based on the assessment categories. Based on the analysis of all respondents' answers, an overall average score of 3.82 out of a maximum of 5 was obtained, or 76.35 per cent, which falls within the 'Good' category.

Overall, the distribution of students' responses showed a positive trend, as presented in Table 1 and Table 2.

Table 1. Analysis Results by Research Indicator

Research Indicators	Average Score	Percentage (%)	Category
ESD-Based Social Studies Teaching	3,78	75,54%	Good
Students' Environmental Awareness	3,88	77,58%	Good
Overall Average of Indicators	3,82	76,35%	Good

Source: Research findings

Based on Table 1, both research indicators achieved results in the 'good' category. The 'Students' Environmental Awareness' indicator achieved the highest percentage at 77.58 per cent, whilst the 'ESD Based Social Studies Learning' indicator achieved a percentage of 75.54 per cent. The distribution of respondents' answers can be seen in the detailed description of each item in Table 2.

Table 2. Results of the Analysis of Student Responses for Each Statement

No	Statement	Percentage (%)	Category
1	Social Studies teaching materials integrate environmental issues relevant to everyday life	76,13%	Good
2	Lecturers explain the interrelationships between social, economic and environmental aspects	75,48%	Good
3	Social Studies teaching enhances understanding of sustainable development	75,48%	Good
4	Social Studies teaching encourages students to think critically about environmental issues	74,19%	Good
5	Lecturers use real-life case studies of environmental problems	80,00%	Good
6	Students engage in discussions regarding solutions to environmental problems	71,61%	Good
7	Students are given the opportunity to express their views on environmental issues	72,90%	Good
8	Social Studies education motivates participation in environmental conservation	76,13%	Good
9	Teaching methods foster a greater concern for the environment	75,48%	Good
10	Social Studies materials help students understand their responsibilities towards the environment	78,06%	Good
11	Social Studies education encourages the adoption of environmentally friendly behaviour	77,42%	Good
12	Social Studies education provides opportunities to take part in environmental conservation activities	73,55%	Good
13	Students dispose of rubbish in the designated bins	82,58%	Very good
14	Students endeavour to reduce their use of single-use plastics	74,19%	Good
15	Students conserve water	71,61%	Good
16	Students conserve electricity when it is not in use	77,42%	Good
17	Students have a responsibility to safeguard the environment	81,29%	Very good
18	Protecting the environment is the responsibility of every individual	82,58%	Very good
19	Students endeavour to adopt an environmentally friendly lifestyle	78,71%	Good
20	Students are willing to take part in environmental conservation activities	72,26%	Good

Source: Research findings

The distribution of respondents' answers in this study was generally dominated by positive responses, with 39.52 per cent of respondents selecting 'Agree' (A) and 33.87 per cent selecting 'Strongly Agree' (SA). The cumulative proportion of positive responses totalled 73.39 per cent. Meanwhile, the 'Undecided' (U) option was selected by 7.58 per cent, 'Disagree' (D) by 12.58 per cent, and 'Strongly Disagree' (SD) by 6.45 per cent.

The research results indicate that the indicator for Social Studies Learning based on Education for Sustainable Development (ESD) achieved a score of 75.54 per cent and falls within the 'good' category. This outcome suggests that students generally responded positively to the integration of environmental issues and the principles of sustainable development into Social Studies lectures. Social Studies education plays a strategic role in building learners' collective awareness of the interactions between social and economic dynamics and ecological sustainability (Aryanti et al., 2025; Firdaus Daud, Nurfiana Abdullah, 2022).

As shown in Table 2, the highest score for this indicator was achieved in the item relating to lecturers' use of real-life case studies in the learning process, at 80.00 per cent. The use of real life case studies has proven effective in linking academic material to social realities and the ecological issues faced by society in concrete terms. This is in line with the view that problem based learning is capable of honing students' sensitivity and critical thinking skills regarding environmental issues (Schunk, 2022; Tobias & Duffy, 2012). Furthermore, the relevance of social studies material to everyday life (76.13 per cent) and the development of an understanding of ecological responsibility (78.06 per cent) also contribute to shaping students' behavioural orientation.

Although the results fall within the 'good' category, there are several aspects that require improvement, such as the level of active student engagement in discussions on solutions to environmental issues (71.61 per cent) and opportunities to express opinions (72.90 per cent). For ESD based social studies learning to function optimally, instructional strategies need to shift from merely one-way information delivery towards participatory and collaborative methods (Janssen, Kirschner, Erkens, Kirschner, & Paas, 2022). Through more inclusive discussion forums, students become not merely consumers of knowledge, but also agents of change who actively formulate solutions to the environmental crisis.

The Environmental Awareness Indicator for students recorded an average percentage of 77.58 per cent ('good' category), which was the highest achievement in this study. These findings indicate that students already possess a strong foundation of values and attitudes regarding the importance of maintaining environmental sustainability. The statements ranking highest were the habit of disposing of rubbish in the correct bins (82.58 per cent) and the belief that preserving the environment is the moral responsibility of every individual (82.58 per cent), both of which fall into the 'very good' category. This high sense of personal responsibility is further reinforced by the students' perception of the obligation to protect the environment (81.29%). These findings support environmental behaviour theory, which states that the internalisation of

a sense of individual responsibility is a key predictor in driving eco-conscious action (Mezirow, 1997; Wheaton et al., 2024).

In everyday life, this awareness is demonstrated through concrete actions such as adopting an environmentally friendly lifestyle (78.71 per cent), saving electricity (77.42 per cent), and reducing the consumption of single-use plastics (74.19 per cent). Nevertheless, the levels of water conservation (71.61 per cent) and willingness to participate directly in environmental conservation activities outside the classroom (72.26 per cent) remain relatively lower. This situation suggests the need for platforms for concrete action, such as community service programmes, green initiatives on campus, or environmental conservation programmes, so that students' contextual awareness can be transformed into consistent active participation (Ajzen, 1991; Alves et al., 2026).

The synergy between ESD based social studies learning and students' high level of environmental awareness (overall average of 76.35 per cent) has important implications for the development of higher education curricula. Learning that integrates ESD principles not only serves to enhance students' cognitive development but also shapes their affective and conative aspects in an environmentally conscious manner. Therefore, it is recommended that the future reorientation of social studies education focus on an integrated approach that links academic theory with practical field experience.

DISCUSSION

Contextual Learning and the Limitations of Participation

The highest score in the aspect of using real-life case studies (80.00 per cent) indicates that respondents viewed the connection between Social Studies material and environmental issues in a relatively positive light. This finding is consistent with the nature of Social Studies, which interprets ecological phenomena through the lens of social, economic, policy and behavioural factors within society. Real-life cases can serve as material for identifying actors, sources of conflict, the distribution of consequences, and options for action, ensuring that sustainability education is inseparable from the realities of communal life.

Nevertheless, a high score for the use of case studies does not equate to evidence of the success of the case study method. The instrument measures students' perceptions, not changes in learning outcomes following the intervention. From an ESD perspective, case studies merely provide a starting point for developing competencies in systems thinking, anticipatory thinking and strategic thinking. These competencies require practice in assessing interdependencies, estimating the impacts of choices, and devising accountable strategies (Wiek et al., 2011).

Two items with relatively low scores involvement in discussions of solutions (71.61 per cent) and opportunities to express opinions (72.90 per cent) raise issues for pedagogical reflection. Both relate to students' deliberative space and opportunities to construct knowledge collectively. In social studies lessons, dialogue is not merely a

means of exchanging answers, but an experience of weighing up different arguments and negotiating public choices. These lower figures may indicate a need to evaluate the design of the discussions, although they are not yet sufficient to determine the causes.

There are several possible explanations that should be examined in future research, such as the allocation of teaching time, the distribution of speaking opportunities, the quality of prompting questions, lecturer dominance, student preparedness, and the availability of information sources on environmental cases. As this study did not collect observational evidence or conduct interviews, all these alternatives are treated as hypotheses for further investigation, rather than established research findings. The practical implication is to strengthen the learning sequence from case analysis to dialogue and the formulation of solutions. For example, students could map the actors involved in the issue of campus waste, analyse the economic interests and social impacts, compare policy options, and then justify their choice of solution through structured discussion (Asiyat K. & V. Anufrienko., 2022; Susanti et al., 2025). This design is a pedagogical proposal based on response profiles, rather than an intervention whose effectiveness has been tested in this study.

Normative Awareness, Habits, and Willingness to Act

The environmental awareness indicator scored 77.58 per cent, which is slightly higher, in descriptive terms, than the learning perception indicator. However, the difference between these two aggregate figures cannot be interpreted as evidence that learning shapes awareness. The two scores originate from instruments that differ in scope and the nature of their items, and the strength of the relationship between variables has not been calculated. Therefore, interpretation must focus on the characteristics of each aspect reported by the students.

Items concerning each individual's responsibility to protect the environment scored 82.58 per cent, as did those concerning the habit of disposing of rubbish in the correct place. These results indicate a relatively high level of agreement regarding the values of responsibility and simple habits, as reported by the students themselves. It is important to distinguish between normative orientations, which state what is considered correct, and behavioural indicators, which enquire about actual practices. The presence of both types of items within a single awareness score has the potential to obscure differences between dimensions that require further testing.

The willingness to participate in conservation activities (72.26 per cent) and water conservation (71.61 per cent) was, descriptively speaking, lower. In studies of environmental behaviour, individuals may face practical, social and institutional barriers when translating ecological concerns into concrete action on the ground. Kollmuss and Agyeman discuss the complexity of the relationship between knowledge, awareness, motivation and pro-environmental practices (Kollmuss & Agyeman, 2002). This framework helps to develop possible explanations, but should not be used to claim that specific barriers were present amongst these 31 respondents.

The level of participation also depends on the availability of meaningful activities.

A university may have environmental programmes, but student engagement requires clarity regarding opportunities, access, the division of roles, and ongoing support. To test this explanation, further research needs to incorporate indicators of opportunities for action, verified participation, and information on the institutional context. More robust measurements can distinguish between intention, frequency of behaviour, and evidence of community action. Ardoin points out that conservation oriented environmental education outcomes require attention to local action as well as more direct assessment of results (Ardoin et al., 2020). herefore, the implication of this study is not that students 'do not yet care', but rather that current measurements suggest the presence of indicators worthy of examination through more appropriate action plans and evaluations.

Implications for ESD Oriented Social Studies Learning

A synthesis of the findings points to three priorities for the development of learning. Firstly, contextual content must be retained, but utilised as a source of problems to be analysed, rather than merely as an illustration (Bamberg & Möser, 2007; Puspito et al., 2026). Students can compare empirical evidence, the perspectives of social groups, economic consequences and the ecological implications of a single issue. In this way, social studies education retains its identity as a study of society whilst integrating ESD objectives.

Secondly, spaces for participation must be designed as observable components of the learning process. Lecturers can facilitate group discussions with distributed roles, evidence-based debate forums, stakeholder mapping, and mechanisms for individual reflection. Assessment indicators may include the quality of argumentation, contributions to discussions, the ability to accept differing perspectives, and the clarity of proposed solutions. The emphasis on strengthening the learning environment and the role of young people provides a normative framework for such designs, rather than direct evidence of the success of specific practices in this study (Saputra et al., 2023).

Thirdly, environmental action activities should be linked to academic objectives and measurable evaluation. Examples include an audit of plastic use on campus or the documentation of energy-saving practices, followed by an analysis of social barriers. Activities need to be accompanied by pre- and post-measurements, performance rubrics or observational evidence so that they do not merely amount to reports on attitudes. If the effectiveness of learning is to be assessed, quasi experimental or longitudinal designs may be considered, taking into account the validity of the instruments and the characteristics of the participants.

At the evaluation level, further research needs to distinguish between at least three domains: ESD learning experiences, normative awareness/judgement, and participation/behaviour. If the Theory of Planned Behaviour is chosen, the measurement must genuinely encompass attitudes towards behaviour, subjective norms, perceived behavioural control, and intentions; it is not sufficient merely to add the theory's terminology as a mere embellishment (Ajzen, 1991; Mezirow, 1997). If sustainability

competencies are used, rubrics or tasks related to the dimensions of these competencies are required. Thus, the contribution of this article is not to offer a validated ESD model, but rather to provide a basis for initial mapping to identify areas for improving teaching. Distinguishing between what is described, how it is interpreted, and what is newly proposed will enhance the transparency of the academic argument.

Pedagogical Implications and Recommendations

The descriptive findings highlight several evaluation points that are more specific than the aggregate rating of 'good'. In strengthening ESD based social studies learning, lecturers can review the consistency of the use of real-life case studies and increase opportunities for students to present arguments and formulate alternative solutions (Ekawati et al., 2025; Fariha et al., 2026). These priorities stem from the relatively lower level of participation in discussions compared to the use of case studies, rather than from evidence that a particular method has failed or succeeded.

The learning process can be organised through three interrelated stages: understanding socio-ecological issues based on evidence; debating alternative courses of action whilst considering their impacts on diverse groups; and reflecting on the outcomes of actions on a feasible scale (Sterling, 2011; Tobias & Duffy, 2012). For example, the issue of reducing plastic on campus can serve as the subject of an investigation into consumption, facilities, regulations and inequalities in access. Students can then compare options and develop recommendations whose implementation can be assessed. This approach maintains the relevance of social studies to social analysis, whilst reinforcing ESD's focus on responsibility and participation.

Future assessments should not combine all experiences into a single score without testing for dimensionality. The assessment of learning experiences may utilise validity-tested questionnaires, whereby the quality of dialogue can be measured using an argumentation rubric, whilst environmental actions are assessed through observation, activity logs or project outputs (Firdaus Daud, Nurfiana Abdullah, 2022). This kind of triangulation will better enable a careful analysis of the differences between normative support and verified actions. The implementation of these recommendations requires testing and evaluation; consequently, they should be regarded as practical guidelines derived from the findings, rather than the research results themselves.

CONCLUSION

Based on the research findings and discussion, the implementation of Social Studies teaching based on Education for Sustainable Development (ESD) and students' level of environmental awareness fell into the 'Good' category, with an overall average percentage of 76.35 per cent (score of 3.82). The indicator for students' environmental awareness achieved the highest score of 77.58 per cent, which was particularly evident in basic behaviours such as the habit of disposing of rubbish in the correct bins and a sense of individual responsibility (82.58 per cent). Meanwhile, the indicator for ESD based social studies teaching achieved a percentage of 75.54 per cent, with the main

strength lying in lecturers' use of real-life case studies on environmental issues (80.00 per cent). Although the overall impact was positive, certain aspects such as student engagement in discussions on environmental solutions (71.61 per cent) and direct participation in conservation activities (72.26 per cent), still require improvement through a reorientation of Social Studies teaching strategies towards a more active, participatory, problem-based learning approach, as well as one focused on concrete action.

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