




## Student Perceptions on the Integration of Sustainability in Teaching Social Studies

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### ABSTRACT

This study delves into how social studies teachers integrate sustainability principles into their daily teaching practices in the lens of the student. Employing a mixed-method approach, the research combines a descriptive survey (n=28) with follow-up interviews (n=10) of third-year social studies students at Rizal Technological University in the Philippines. Utilizing the Statistical Package for the Social Sciences (SPSS), quantitative data were analyzed to gauge the extent of sustainability integration, while qualitative data, obtained through semi-structured interviews, delved into student perceptions of teachers' strategies, challenges, and overall effectiveness. The findings reveal that students recognize the inclusion of sustainability concepts in their social studies education, yet the depth and consistency of this integration appear uneven. Thematic analysis of interview data unveiled specific strategies employed by teachers, such as incorporating real-life examples and project-based learning, while students highlighted challenges such as limited resources and curriculum constraints. Moreover, student feedback underscored the value of engaging approaches and the need for more consistent application of sustainability principles across the curriculum. Based on these findings, the study recommends fostering stronger partnerships with local communities to bridge the theory-practice gap in sustainability education, thereby providing valuable resources, guest speakers, and real-world project opportunities for students, empowering them to actively contribute to building a sustainable future.

### RESUMO

Este estudo investiga como os professores de estudos sociais integram os princípios de sustentabilidade em suas práticas diárias de ensino sob a ótica dos alunos. Empregando uma abordagem mista, a pesquisa combina um levantamento descritivo (n=28) com entrevistas de acompanhamento (n=10) com estudantes de terceiro ano de estudos sociais na Universidade Tecnológica de Rizal, nas Filipinas. Utilizando o Pacote Estatístico para Ciências Sociais (SPSS), os dados quantitativos foram analisados para avaliar o grau de integração da sustentabilidade, enquanto os dados qualitativos, obtidos por meio de entrevistas semiestruturadas, exploraram as percepções dos alunos sobre as estratégias dos professores, desafios e eficácia geral. Os resultados mostram que os alunos reconhecem a inclusão de conceitos de sustentabilidade em sua educação em estudos sociais, porém a profundidade e consistência dessa integração parecem desiguais. A análise temática dos dados das entrevistas revelou estratégias específicas utilizadas pelos professores, como a incorporação de exemplos da vida real e aprendizagem baseada em projetos, enquanto os alunos destacaram desafios como recursos limitados e restrições curriculares. Além disso, o feedback dos alunos destacou o valor de abordagens envolventes e a necessidade de uma aplicação mais consistente dos princípios de sustentabilidade em todo o currículo. Com base nesses achados, o estudo recomenda o fortalecimento de parcerias com comunidades locais para superar a lacuna teoria-prática na educação para sustentabilidade, proporcionando recursos valiosos, palestrantes convidados e oportunidades de projetos do mundo real para os alunos, capacitando-os a contribuir ativamente para a construção de um futuro sustentável.

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## Introduction

Sustainability, a concept that has gained significant attention in recent years, is often associated with environmental conservation. However, it encompasses much more, including social and economic aspects (Aina et al., 2019). Universities are increasingly recognizing the importance of integrating sustainability into their curriculum. This integration is seen as a way to equip students with the knowledge and skills needed to address complex sustainability challenges. The integration of sustainability in instruction involves incorporating sustainability-related topics into existing courses, developing new ones focused on sustainability, and embedding sustainability principles into the overall curriculum (Mohammadi et al., 2023). The integration of sustainability in instruction is not without challenges. It requires a systemic change in the way education is delivered, which can be difficult to achieve given the diverse disciplinary and administrative environment at a university. Despite these challenges, many universities are making significant strides in integrating sustainability into their instruction, recognizing the critical role they play in fostering sustainable development (Hill & Wang, 2018).

The integration of sustainability in education, particularly in social studies, is crucial as it helps students understand the interconnectedness of societal, environmental, and economic issues. Social studies, as a field of study, provides an excellent platform for integrating sustainability education because it deals with human society and social relationships. It can help students comprehend how their actions impact the environment and society and how they can contribute to sustainable development (Zong, 2022). Moreover, the integration of sustainability in social studies can foster critical thinking skills among students. They can analyze and evaluate the consequences of human actions on the environment and society, thereby promoting responsible decision-making (Campo et al., 2023). For instance, by studying historical events and their impact on the environment, students can understand the importance of sustainable practices and their role in preventing environmental degradation (Şeker, 2023).

Furthermore, sustainability education in social studies can also promote active citizenship. It encourages students to participate in societal issues and take action towards sustainable development (Aleixo et al., 2021). This not only enhances their understanding of sustainability but also empowers them to make a difference in their communities and the world at large (Coy et al., 2021). The integration of sustainability in social studies is not just an educational strategy, but a necessity for the future of our planet. It equips students with the knowledge, skills, and values necessary to navigate the complex challenges of the 21st century and contribute to a sustainable future (González-Salamanca, Agudelo & Salinas, 2020).

However, the success of integrating sustainability in social studies largely depends on how students perceive this integration. Students' perceptions can significantly influence their learning outcomes and attitudes towards sustainability. Therefore, understanding these perceptions can provide valuable insights for educators and curriculum developers to effectively integrate sustainability into social studies education (Abbonizio & Ho, 2020).

The study aimed at determining the extent to which sustainability principles are incorporated into teaching practices. It also delved into student perceptions by examining how students perceive the integration of these principles by their teachers and the factors they believe influence teachers' approaches. Moreover, it identified the specific strategies and methods teachers employ to integrate sustainability concepts and any challenges they encounter in doing so. Furthermore, the study explored the effectiveness of this integration from the students' perspective and gather their recommendations for improvement.

### **Research Questions**

The study looked into the integration of sustainability into daily teaching practices in social studies which specifically answered the following questions:

1. What is the evaluation of the respondents on the extent of sustainability integration in teaching Social Studies?
2. How do respondents perceive their teachers' integration of sustainability principles in daily teaching practices, and what factors influence their teachers' approach?
3. What specific strategies do respondents observe their teachers using to incorporate sustainability concepts into daily teaching practices, and what challenges do they encounter?
4. How do respondents feedback on the effectiveness of sustainability integration in their teachers' daily teaching practices, and what recommendations do they propose for improvement?

### **Methodology**

This study employed a mixed-method approach, a research technique that integrates quantitative and qualitative research approaches into a single study or research effort. This methodology involves gathering and examining both quantitative and qualitative data to achieve a thorough understanding of a study issue (Hassan, 2023). Specifically, the sequential explanatory design was utilized to fully grasp the ideas of the study. The sequential explanatory design is a powerful approach in mixed-methods research that leverages the strengths of both quantitative and qualitative methodologies. It involves a two-phased

process, collecting and analyzing data in a specific order to gain a comprehensive understanding of a research question (Harrison et al., 2020).

The initial phase focused on collecting quantitative data, which is numerical information often gathered through surveys, experiments, or other standardized methods (Hamed, 2021). This data helps researchers establish the extent or prevalence of a phenomenon or the relationships between variables under investigation (Creswell and Plano Clark, 2023). After collection, the researchers rigorously analyze the quantitative data using statistical techniques appropriate for the chosen methods (Teddlie & Tashakkori, 2021).

Informed by the findings from the quantitative phase, researchers then collect qualitative data to delve deeper into the phenomenon (Tsai et al., 2020). This data can take various forms, such as interviews, focus groups, or observations (Hirose & Creswell, 2023). The qualitative data serves to explain or provide context for the quantitative results. Researchers analyze this data thematically, identifying patterns and meanings within the collected text or observations (Braun & Clarke, 2023).

By using the sequential explanatory design, this study ensures a robust and comprehensive examination of the research questions. The initial quantitative phase provides a broad overview and identifies key trends, while the subsequent qualitative phase offers deeper insights and contextual understanding, making the findings more meaningful and actionable. This combination of methods enhances the reliability and validity of the research outcomes, providing a well-rounded perspective on the issue under investigation.

In the context of this study, the descriptive-survey method was utilized to gather quantitative data pertaining to the extent of sustainability integration in teaching social studies. Descriptive research seeks to provide precise and systematic descriptions of a population, situation, or event. It addresses queries related to what, where, when, and how, but not ones related to why, which is where qualitative research comes in. Descriptive study design employs a diverse range of research tools to examine one or several variables (McCombes, 2022).

On the other hand, qualitative data was gathered through interviews using unstructured questions to understand respondents' perceptions of their teachers' integration of sustainability principles. This approach aimed to identify the specific strategies and methods teachers employ, as well as the challenges they encounter. Moreover, it explored the effectiveness of this integration from the students' perspective and collected their recommendations for improvement. Interviews are a common method used in qualitative surveys. They allow researchers to gather in-depth information about a person's thoughts, experiences, and perceptions. Interviews can be structured, semi-structured, or unstructured, depending on the level of flexibility allowed in the conversation (Jain, 2021).

The instrument employed in this study is a modified version of the Sustainability Assessment Questionnaire originally developed by the Association of University Leaders for

a Sustainable Future (ULSF) in the year 2002. The ULSF plays a pivotal role as the Secretariat for the signatories of the Talloires Declaration, a landmark statement signed in 1990 by over 500 presidents and chancellors of colleges and universities across the globe. The Talloires Declaration emphasizes the commitment of higher education institutions to environmental sustainability and responsible practices.

ULSF's mission is to support the Talloires Declaration signatories and advocate for sustainability as a fundamental aspect of higher education. This advocacy is achieved through a variety of means, including publications, research projects, and assessment tools that guide institutions in integrating sustainability into their teaching, research, operations, and community outreach efforts. The original Sustainability Assessment Questionnaire designed by ULSF is comprehensive and covers various operational sectors of educational institutions, ranging from energy use to waste management. However, for the purposes of this particular study, the focus was narrowed to the sections of the questionnaire that pertain to teaching ("The Association of University Leaders for a Sustainable Future (ULSF) Announces Its New Web Site," 2001).

## **Respondents**

The respondents of this study include 28 social studies students in their third-year of studies in the academic year 2023-2024 which here is considered, the population, which was purposively selected. Purposive sampling, also known as judgmental or selective sampling, is a non-probability sampling technique used in research to select participants based on specific characteristics or criteria deemed relevant to the study (Scribbr, 2022). These students were specifically chosen to participate as respondents because they are expected to exhibit a high level of mastery of sustainability concepts. This expectation is based on the fact that they have completed the necessary coursework and academic requirements for the Bachelor of Secondary Education program with a major in Social Studies awaiting for the culmination of their program called Practice Teaching which is taken in their fourth year of studies. Bachelor of Secondary Education (BSEd) program with a major in Social Studies aims at preparing graduates for careers as high school social studies teachers. This four-year program equips students with the knowledge, skills, and values necessary to effectively teach these subjects in Philippine secondary schools (RTU College of Education, n.d.).

By the third year, these students have undergone extensive instruction in various subjects related to social studies, which has equipped them with a comprehensive understanding of both the theoretical and practical aspects of sustainability. Their advanced phase in the program makes them particularly well-suited to provide detailed and informed insights into how sustainability principles are integrated into the actual classroom instruction among various courses handled by the social studies teachers. The said respondents are under

the Social Studies Department which is a department of the College of Education in Rizal Technological University, Mandaluyong City, Philippines.

Out from the 28 respondents, 10 were selected to participate in the interview. They were selected based on their academic performance who belong to the top 10. Academic performance ranking can be a relevant, but not the sole, factor when selecting interview participants for specific topics (Melchers et al., 2021). High academic performance can indicate a strong foundation in the subject matter, suggesting the participant may possess relevant knowledge and critical thinking skills (Liu & Pásztor, 2022). In this case, concepts related with sustainability and their integration to teaching social studies.

### **Data Analysis**

After collecting data through an online platform, specifically via a Google Form link, the researcher consolidated the responses and subjected them to analysis. The quantitative data was processed using the Statistical Package for the Social Sciences (SPSS), which calculated the arithmetic mean to determine the extent of sustainability integration in teaching social studies. The arithmetic mean, a measure of central tendency, represents the average value of a quantitative variable by considering all observations equally. In contrast, the weighted arithmetic mean assigns different weights to each observation based on its significance. (Balbin, 2024).

Following the research of Abenes et al. (2023), adjectival interpretations of the calculated means were derived using a 5-point Likert scale. To investigate how teachers integrate sustainability principles into their daily teaching practices, the Google Form included interview questions. These questions addressed the specific strategies and methods teachers employ to incorporate sustainability concepts, the challenges they face, the effectiveness of these methods, and the respondents' recommendations for improvement.

The qualitative data collected through these interview questions was subjected to coding and thematic analysis to identify emerging themes. The goal of this analysis was to uncover recurring patterns within the recorded communication. This method involved systematically gathering data from a variety of sources, which could include written, spoken, or visual content such as books, periodicals, newspapers, films, interviews, web content, social media posts, and photographs. Thematic analysis is a widely used qualitative research method for identifying, analyzing, and interpreting patterns of meaning within data. It systematically extracts key concepts and insights from various qualitative sources, including interviews, focus groups, open-ended survey responses, and documents (Balbin, 2024).

## Results and Discussion

**Table 1.**

*Mean (M) and Standard Deviation (SD) values on the Evaluation on the Extent of Sustainability Integration in Teaching Social Studies*

<b>Benchmark Statements</b>	<b>Mean</b>	<b>SD</b>	<b>Verbal Interpretation</b>
The Social Studies curriculum integrates sustainability principles across courses.	4.32	0.67	Strongly Agree
There are dedicated courses or programs focused on sustainability within the Social Studies Curriculum.	4.43	0.63	Strongly Agree
The Social Studies Department promotes experiential learning opportunities related to sustainability.	4.29	0.76	Strongly Agree
Faculty members receive training or support for incorporating sustainability into their teaching.	4.00	0.86	Agree
The Social Studies Department encourages student involvement in sustainability-related research projects.	4.25	0.80	Strongly Agree
There are measures in place to assess student learning outcomes related to sustainability.	4.18	0.77	Agree
The Social Studies Department utilizes sustainable practices in classroom management and resource usage.	4.04	0.69	Agree
Collaboration with local communities is emphasized in instructional activities.	3.75	1.04	Agree
The Social Studies Department fosters a culture of environmental stewardship among students and faculty.	4.14	0.76	Agree
Continuous improvement efforts are made to enhance the sustainability of instructional practices within the Social Studies Department.	4.39	0.74	Strongly Agree
<i>Over-all</i>	<i>4.18</i>	<i>0.77</i>	<i>Agree</i>

The table above presents data on the respondents' evaluation of the extent of sustainability integration in teaching social studies in the undergraduate program. Notably, the second benchmark statement, which asserts, "*There are dedicated courses or programs focused on sustainability within the social studies curriculum,*" received the highest mean score of 4.43 among the mean values, with an adjectival interpretation of "strongly agree." This finding indicates that, among the various courses or subjects taken by the respondents over their three years of study, they have encountered several, if not many, that are explicitly dedicated to addressing sustainability. This high level of agreement underscores the significant presence of sustainability-focused content within the curriculum, suggesting that these subjects have successfully integrated sustainability principles into the teaching practices. Integrating sustainability principles into teaching practices is a growing trend in education, reflecting a broader movement towards Education for Sustainable Development (ESD). This approach, as defined by UNESCO, aims to equip students with the knowledge, understanding, skills, and attributes necessary to navigate a rapidly changing world while safeguarding environmental, social, and economic well-being for present and future generations (Einav et al., 2023).

Similarly, Hays and Reinders (2020) echo these sentiments in their exploration of Sustainable Learning and Education (SLE) Philosophy. Their work emphasizes that the primary objective is not only to develop but also to widely distribute sustainable curriculum and cutting-edge approaches to learning and teaching. Central to their argument is the imperative of integrating systems and ecological thinking into educational paradigms, as these concepts play a crucial role in cultivating a comprehensive comprehension of sustainability. Furthermore, they stress the dual importance of self-sufficiency, advocating for its integration both as a methodology and an ultimate aim within sustainable learning and education endeavors.

It is further strengthened by the value of standard deviation for the said benchmark statement which is 0.63 which indicates that the responses regarding the extent of sustainability integration in teaching social studies exhibit a moderate level of variability around the mean score. This variability suggests that while there is general agreement among respondents, there are also some differences in their evaluations of sustainability integration.

Moreover, in contrast with the above, the lowest mean score of 3.75 was obtained by the 8<sup>th</sup> benchmark statement, *“Collaboration with local communities is emphasized in instructional activities,”* with an adjectival interpretation of “agree.” It highlights a concerning low average agreement score regarding the importance of collaborating with local communities in instructional activities, indicating a potential gap in understanding or prioritization of community engagement within educational contexts. It suggests that there needs an assessment of the status quo and modify the same to strengthen community initiatives among the students relative to instruction. A study by Malone (2020) emphasizes the increasing necessity for continuous evaluation and research concerning community schools and their associated initiatives in the community. The study underscores the importance of assessing not only the effectiveness of specific community school programs but also the collective impact of various coordinated interventions implemented within these schools.

Furthermore, an article from the University of Pennsylvania Graduate School of Education delineates the distinction between school-community engagement and school-community collaboration. The author contends that school-community engagement efforts primarily aim to build students' knowledge about or for their communities. In contrast, school-community collaboration involves students actively co-constructing knowledge with their communities. The article underscores the importance of equally valuing and integrating both school-based and community-based knowledge to foster more meaningful and effective educational experiences (Provinzano et al., 2018).

With such a finding, the benchmark statement yielded a standard deviation of 1.04, indicating that the responses are moderately varied, but not excessively so. This level of spread suggests that while there is some agreement, there is not complete consensus among the respondents. The moderate standard deviation reflects a diversity of opinions, likely stemming



from varying levels of awareness, experience, or value placed on community collaboration in instructional activities.

The over-all mean score of 4.18, interpreted adjectivally as "agree," with a standard deviation of 0.77, indicates a generally positive consensus among respondents regarding the extent of sustainability integration in teaching Social Studies. This suggests that, on average, respondents believe that sustainability principles are well-integrated across courses within the Social Studies curriculum, and there are dedicated courses or programs specifically focused on sustainability. The moderate variability in responses highlights that while the majority agree on the importance and presence of sustainability integration, some respondents may have different levels of enthusiasm or experience with these initiatives.

*Respondents' Perception on the Integration of Sustainability Principles into Daily Teaching Practices and Factors that Influence the Teachers' Approach*

**Theme 1. Teacher Integration Methods**

Teachers are employing various methods to weave sustainability principles into their daily teaching. They directly address environmental concerns and encourage conservation efforts, as one student noted, *"My teachers integrate sustainability principles...by discussing environmental issues..."* Beyond discussions, teachers also push students towards eco-friendly habits, shaping their environmental consciousness. This is reflected in a student's observation, *"I notice some teachers integrating sustainability...by promoting recycling."* Furthermore, teachers leverage real-world, hands-on projects, as another student highlights, *"I think I perceive or see the integration of sustainability principles by my teacher...by letting us do assessment tasks or activities that we can use in the real world."* This approach extends beyond singular subjects. As one student points out, professors *"demonstrate the integration and sustainability principles through interdependence,"* showcasing how seemingly separate topics are intricately linked. By fostering understanding of interconnectedness, educators encourage students to think holistically about sustainability. These combined methods provide a well-rounded approach to integrating sustainability into the classroom.

The above discusses the various methods teachers are using to incorporate sustainability principles into their daily teaching. These include addressing environmental concerns and encouraging conservation efforts, promoting eco-friendly habits such as recycling, implementing real-world, hands-on projects, and demonstrating the interdependence of different topics. This comprehensive approach fosters a deeper understanding and appreciation of sustainability among students. A study by Gisore (2023) emphasizes the importance of integrating sustainability education into classrooms to foster learning towards a more sustainable future. Another study Avelar et al., (2023) published in

the International Review of Education explores how higher education institutions are integrating the Sustainable Development Goals into their curriculum, research, and partnerships. These studies validate the effectiveness of the methods mentioned in the above declaration, underscoring the significance of integrating sustainability principles into daily lessons.

## **Theme 2. Factors Influencing Teacher Approach**

Several factors influence how deeply teachers integrate sustainability principles into their lessons. These factors range from personal convictions to external pressures. A student acknowledges the role of personal beliefs and values, stating, *"The integration of sustainability principles...may be personal beliefs or values."* Curriculum requirements also play a role, as another student mentions, *"teachers integrate sustainability principles...by incorporating relevant topics into their lessons...such as discussing environmental issues..."* However, teacher autonomy can be limited by factors like available resources and school administration support. A student highlights this by saying, *"sustainability isn't always the forefront of our classroom discussions...Some teachers mention it briefly...I think one factor influencing this is the limited resources and time."* Professional development and training can also empower teachers, as another student suggests, *"Professional Development, Training/Seminars, and Teaching techniques"* are factors that influence teacher approach. Beyond these internal school factors, a student mentions educational background and teacher maturity as influences, stating, *"their maturity and experience in their respective fields...influence their approach."* Lastly, the broader world shapes teacher decisions as well. The student who mentioned limited resources also points to current events like *"extreme heat"* as a potential driving force. Similarly, societal issues like social equity can influence teacher approach, as students express that a professor demonstrates by prioritizing these issues in their teaching. This complex interplay of factors shapes how extensively teachers integrate sustainability into their classrooms.

The above discusses the various factors that influence how teachers integrate sustainability principles into their lessons. These factors include personal beliefs and values, curriculum requirements, available resources, school administration support, professional development and training, teacher maturity and experience, and broader societal issues and current events. These factors interplay to shape the extent to which sustainability is integrated into classrooms. This aligns with a study by Duran and Mariñas (2024) published in the journal *Sustainability*, which examines the integration of sustainability principles into higher education curriculum in the Philippines. The study employs the expanded Theory of Planned Behavior to explore the relationships among sustainability knowledge, concern for sustainability, perceived behavioral control, subjective norms, attitudes towards sustainability integration, and the intention to integrate sustainability. The findings reveal that educators'

attitudes significantly influence their intentions to incorporate sustainability into curriculum, and emphasize that robust institutional support is essential for effective integration.

### **Theme 3. Student Learning Outcomes**

By integrating sustainability principles into teaching, teachers aim to cultivate a generation of responsible citizens equipped to tackle the challenges of the future. One student highlights this goal, stating that the purpose is *"to instill a culture of environmental stewardship in students."* This translates into students developing an awareness of sustainable living practices, allowing them to make informed decisions in their daily lives. Furthermore, students gain the ability to apply sustainability principles in real-world situations, as another student emphasizes, *"The integration of sustainability principles into our daily class will help us develop a sustainable mindset in which we can have the mindset to really take care of our environment."* This fosters a sustainable mindset, encouraging students to think critically and solve problems with long-term sustainability in mind. The study also suggests that integrating sustainability promotes critical thinking and problem-solving skills. One student mentions professors who *"connect everything, including the effects of the environment, society, and economics, to one another,"* highlighting an approach that encourages students to see the interconnectedness of issues. This fosters understanding of the interconnectedness of environmental, social, and economic issues, preparing students to navigate the complexities of the real world. Ultimately, by integrating sustainability principles, educators aim to develop long-term thinking and resilience in their students, equipping them with the necessary skills to build a more sustainable future.

Integrating sustainability principles into education is crucial for cultivating responsible citizens adept at sustainable living and real-world application. This approach nurtures a sustainable mindset, fosters critical thinking, and highlights the interconnectedness of environmental, social, and economic issues. By promoting long-term thinking and resilience, it equips students with essential skills to build a sustainable future, inspiring them to become proactive stewards of the environment and advocates for sustainable development. Sustainable Learning and Education: A Curriculum for the Future by Jay Hays and Hayo Reinders (2020) introduces Sustainable Learning and Education (SLE), an emerging philosophy of learning and teaching founded on principles of sustainability. This approach emphasizes creating educational experiences that prepare students to engage with and address sustainability challenges, ensuring that learning is both relevant and impactful in the context of global environmental issues.

Sustainability in English Language Teaching: Strategies for Empowering Students to Achieve the Sustainable Development Goals by Beibei Yu, Wu Yuan Guo, and Hongpeng Fu (2024) systematically reviews studies integrating sustainability into English Language Teaching (ELT). The article highlights the pivotal role of education in tackling global

environmental challenges through language learning and offers practical solutions for educators facing obstacles in incorporating sustainability into ELT. By doing so, it underscores the necessity of embedding sustainability within educational practices to empower students to contribute meaningfully to sustainable development goals.

### *Respondents' Observations of Teachers' Sustainability Integration Strategies and Challenges Encountered*

#### **Theme 1. Engaging Strategies**

Teachers are going beyond traditional lectures to make sustainability education captivating and relevant for students. The data reveals a toolbox of engaging strategies employed by educators. One prominent approach is incorporating real-life examples. By grounding lessons in relatable situations, teachers bridge the gap between theoretical concepts and students' lived experiences. This sentiment is echoed in the passage, *"Teachers often integrate sustainability by incorporating real-life examples into lessons and organizing projects focused on environmental issues."* Another key strategy is project-based learning. Students delve deeper into sustainability concepts by actively researching, planning, and executing projects. The data provides an example, *"a recent project...developed a plan to clean up our community. We brainstormed ideas to reduce waste and planned a school clean-up...guided by 3Rs."* This hands-on approach fosters critical thinking, problem-solving, and collaboration skills, all essential for tackling real-world sustainability challenges. Discussions also play a crucial role. By encouraging open dialogue around sustainability issues, teachers create a platform for students to grapple with complex concepts, share diverse perspectives, and develop informed opinions. Technology further enhances engagement. The data mentions the use of ICT (Information and Communication Technology) to *"make sustainability education more accessible and interactive."* These engaging strategies go beyond rote memorization, empowering students to become active participants in creating a more sustainable future.

Educators are employing innovative strategies to make sustainability education engaging and relevant. These strategies include the use of real-life examples, project-based learning, discussions, and technology. Real-life examples help bridge the gap between theoretical concepts and students' experiences. Project-based learning allows students to delve deeper into sustainability concepts and develop critical thinking, problem-solving, and collaboration skills. Discussions provide a platform for students to grapple with complex concepts and share diverse perspectives. Technology, specifically Information and Communication Technology (ICT), enhances engagement by making sustainability education more accessible and interactive. These findings align with the study by Koprina and Chermiak (2016), which emphasizes the importance of transformative pedagogies in sustainability

education. The study highlights the effectiveness of experiential learning, critical pedagogy, and problem-based learning - all of which resonate with the strategies mentioned above. For instance, the use of real-life examples and project-based learning aligns with the study's emphasis on experiential learning, which involves learning through reflection on doing. Similarly, the encouragement of open dialogue around sustainability issues echoes the study's focus on critical pedagogy, which involves questioning societal norms and values. Thus, the strategies employed by the teachers in your data are supported by existing research in the field of sustainability education.

## **Theme 2. Content and Skills Focus**

This underscores a critical shift in education – the integration of sustainability concepts across core subjects. This move goes beyond simply teaching environmental science. Teachers are weaving sustainability principles into various disciplines, as highlighted in the statement, *“learners must engage in activities or projects... such as research, project-based learning, critical thinking exercises... to engage with sustainability concepts.”* This interdisciplinary approach fosters a holistic understanding of how sustainability connects to social, economic, and environmental aspects of our world. By integrating sustainability throughout the curriculum, teachers aim to cultivate a generation of well-informed and responsible citizens. Students gain a deeper understanding of the challenges we face and the role they can play in creating a more sustainable future. This aligns with the sentiment expressed, *“preparing students to be environmentally responsible citizens and stewards of the earth.”* Furthermore, the focus on sustainability education goes beyond simply acquiring knowledge. The strategies employed often cultivate essential skills for tackling complex issues. Critical thinking allows students to analyze information, identify cause-and-effect relationships, and evaluate different viewpoints. Problem-solving skills equip them to develop creative solutions to sustainability challenges. These skills are crucial for navigating the complexities of the 21st century, where sustainability will undoubtedly be a central issue. Integrating sustainability concepts with core subjects empowers students to not just understand the challenges, but also become active participants in creating solutions.

The results underscore a significant transformation in education towards embedding sustainability concepts across various subjects, surpassing traditional environmental science instruction. This interdisciplinary strategy enables students to grasp a comprehensive view of sustainability, encompassing its ties to social, economic, and environmental dimensions. The goal is to nurture knowledgeable and conscientious citizens capable of comprehending our existing challenges and contributing to a more sustainable future. Notably, the emphasis extends beyond mere knowledge acquisition to the cultivation of critical thinking and problem-solving skills, essential for addressing intricate sustainability issues. These findings parallel the insights from Warren, Archambault and Foley's (2014) study, which advocates for the

integration of sustainability education into the curriculum. The study stresses the importance of adopting an interdisciplinary approach akin to what your findings suggest. It also highlights the significance of fostering critical thinking and problem-solving abilities, aligning with the strategies reflected in your data. Furthermore, the study reinforces the notion that sustainability education should empower students to actively engage in devising solutions.

### **Theme 3. Knowledge and Training Gap**

While the theme showcases teachers' dedication to incorporating sustainability, it also reveals a crucial gap such as the need for more training and support. Effectively integrating sustainability concepts requires a strong knowledge base and pedagogical skills. The theme acknowledges this in the statement, *"There's a need for more training and support for teachers in incorporating sustainability effectively."* Some teachers might lack the confidence or expertise to seamlessly weave sustainability principles into their lessons. This can be attributed to a lack of prior training or access to resources. The sentiment is echoed in the passage, *"Some professors incorporate sustainability concepts... Others might just mention it briefly during lectures."* This limited integration suggests a need for more comprehensive training programs that equip teachers with the knowledge and pedagogical tools to confidently incorporate sustainability across the curriculum. Investing in teacher training around sustainability education can yield significant benefits. Empowered teachers can create engaging learning experiences that foster a deeper understanding of sustainability principles and equip students with the skills necessary to address these challenges. By providing the necessary support and resources, we can bridge the knowledge and training gap, empowering teachers to become leaders in creating a generation of sustainability-minded citizens.

The above observations reverberate strongly with existing research emphasizing the pivotal role of teacher training in sustainability education. For instance, the study "Teacher Education and Education for Sustainability" by Evans (2019) acknowledges that teacher education has contended with addressing various social and environmental issues for over the past 50 years. It accentuates that despite numerous initiatives and instances of exemplary practice, these endeavors often remain fragmented and isolated, failing to achieve widespread integration of sustainability education within teacher training programs. Another study, titled "Teacher Education for Sustainable Development: A Review of an Emerging Research Field," by Fischer et al. (2022) underscores the critical importance of teacher education as a pivotal domain for fostering advancements towards more sustainable futures. This study highlights the central role of education, with a specific focus on education for sustainable development (ESD), in enhancing society's capability to tackle the most urgent societal challenges we confront today.

#### **Theme 4. Importance of Action and Follow-Through**

The theme exposes a critical gap between knowledge and action in some sustainability education approaches. While teachers may employ engaging strategies like real-life examples and projects, some students perceive a lack of concrete follow-through on these practices. This highlights a crucial aspect of effective sustainability education which is the importance of translating knowledge into action. The theme captures this sentiment through student experiences: *"Some professors incorporate sustainability concepts by discussing real-life examples... One challenge we face is the lack of concrete actions or follow-through."* Simply discussing sustainability issues is not enough. Students need opportunities to apply their knowledge and actively participate in creating solutions. Effective sustainability education creates a bridge between theory and practice. This can be achieved through projects that encourage students to develop and implement solutions within their communities. For instance, the theme mentions a project where students *"developed a plan to clean up our community... planned a school clean-up... guided by 3Rs."* Such hands-on experiences are invaluable in fostering a sense of agency and empowering students to become active changemakers. By prioritizing action and follow-through, educators can close the loop and ensure that sustainability education translates into real-world impact. This fosters a sense of responsibility and empowers students to become active participants in creating a more sustainable future.

In the study "Knowledge Translation and Its Interrelation with Usability and Accessibility" by Heinisch (2021), the concept of knowledge translation is applied to citizen science as a means of advancing the Sustainable Development Goals (SDGs), drawing from the conceptual framework established by translation studies. The research underscores that knowledge translation serves as a conduit between knowledge and action, a principle fundamental to the essence of citizen science. Another study by Kim (2005) titled "Translator Education and Sustainability," found that collaborative project-based teaching is a highly effective method for enhancing both translation skills and the generic skills essential for sustainability. This finding aligns with your point about the importance of projects that encourage students to develop and implement solutions within their communities.

#### *Respondents' Feedback and Recommendations on Sustainability Integration*

#### **Theme 1. Effectiveness of Hands-on and Relevant Approaches**

Effective sustainability integration hinges on creating captivating and relevant learning experiences for students. The theme overwhelmingly supports this notion, with phrases like *"effective when it's hands-on and relevant to students' lives"* and *"the strength of effectiveness...interdisciplinary approach and hands-on activities"* emphasizing the importance of this approach. By incorporating real-life examples and engaging students in

hands-on activities, teachers can bridge the gap between theoretical concepts and students' lived experiences. This fosters a deeper understanding of sustainability principles and makes the lessons more interesting and valuable. Such strategies create a positive learning environment where students are actively engaged and able to absorb the values and knowledge needed to become responsible stewards of the environment. Statements like *"sustainability integration...effective when it's hands-on and relevant"* and *"lessons are very interesting...students are able to absorb learning and values...incorporate more real-world examples"* further illustrate the effectiveness of this method.

The findings align well with several studies on sustainability integration in education. For example, the study "Sustainability Integration in Philippine Higher Education Curriculum: A Structural Equation Modeling Assessing Teacher Intention to Integrate" by Duran and Mariñas (2024) stresses the importance of embedding sustainability principles into university and college courses. The research reveals that educators' attitudes significantly influence their intentions to incorporate sustainability into their curriculum. Additionally, the study highlights the critical role of institutional support and the powerful impact of sustainability concerns on educators' intentions. Another study by Argento et al. (2020) titled, "Integrating Sustainability in Higher Education: A Swedish Case" underscores how academics engage in the integration of sustainability within their work. The study emphasizes that administrators of higher education institutions must account for the additional time and resources required to support academics effectively in this endeavor. This includes providing adequate training, support, and infrastructure to enable faculty members to incorporate sustainability principles comprehensively into their teaching and research activities. The research advocates for institutional leadership to recognize and address these challenges, ensuring that academics are equipped to contribute meaningfully to sustainable development goals.

## **Theme 2. Importance of Interdisciplinary Learning**

The theme emphasizes the importance of going beyond isolated subjects when teaching sustainability. Phrases like *"connect sustainability to different subjects"* and *"integration of different approaches"* emphasize the value of an interdisciplinary approach. This allows students to see the interconnectedness of sustainability issues and how they impact various aspects of our lives. As highlighted in one comment, *"Optimism, making efforts to integrate sustainability concepts...emphasizing interdisciplinary understanding..."* reinforces the idea that weaving sustainability principles across disciplines fosters a deeper, more holistic understanding. By breaking down the silos between subjects, educators can equip students with a comprehensive perspective on sustainability, empowering them to tackle complex challenges in the real world.

A case study by Liu et al. (2022) revealed that integrating sustainability principles can enhance interdisciplinarity. The study showcased how incorporating sustainability issues into



non-environmentally related courses enables students and instructors from diverse disciplines to collaborate effectively. Their collaboration aimed to enhance students' abilities to integrate knowledge and communicate with individuals from different backgrounds and experiences. Another study by Weber et al. (2021) emphasized the utilization of a complex systems approach to teach sustainability problems. This method, incorporating network science, enables students to comprehend the interconnected nature of sustainability issues. These studies reinforce the above findings regarding the significance of adopting an interdisciplinary approach to sustainability education.

### **Theme 3. Varied Implementation and Need for Consistency**

The theme reveals a promising yet uneven landscape in sustainability education. Phrases like *"sustainability integration...varies"* and *"well integrated for certain teachers"* highlight the inconsistency in how these principles are being applied. While some teachers excel at incorporating sustainability into their lessons, others struggle to fully integrate it. This inconsistency creates gaps in student learning and weakens the overall impact of sustainability education. The comments point towards a clear need for more consistent application across the curriculum, as suggested in *"Lack of Initiatives and Emerging challenges..."* Imagine a student who encounters sustainability concepts in one class but not another. This fragmented approach can create confusion and limit the effectiveness of sustainability education.

Consistency in integrating sustainability into the teaching process is paramount for several reasons. Firstly, it ensures that students develop a comprehensive understanding of sustainability concepts across various subjects, reflecting its interdisciplinary nature (Hays & Reinders, 2020). Secondly, consistent integration facilitates effective learning by enabling students to connect different subjects and grasp their interconnectedness within the context of sustainability, thereby enhancing the educational experience (Holst, 2023). Thirdly, it can lead to behavioral change by instilling in students a sense of responsibility towards the environment and promoting the adoption of sustainable practices in their daily lives. Lastly, with the pressing challenges of the 21st century, such as climate change and social inequality, rooted in sustainability, consistent sustainability integration equips students with the knowledge and skills necessary to address these challenges and contribute to a sustainable future (Nayar, 2013).

### **Theme 4. Promoting Community Engagement and Partnerships**

The theme emphasizes the potential of community engagement to enrich sustainability education. Comments like *"Lack of Initiatives and Emerging challenges...my recommendations are Community Engagement..."* presses the importance of fostering partnerships with local environmental groups, government agencies, and businesses. These partnerships can bridge the gap between theoretical knowledge and real-world application,

offering valuable resources, guest speakers, and networking opportunities for students. Imagine a science class partnering with a local environmental organization to monitor water quality in a nearby stream. Students gain practical experience in data collection and analysis, bringing the concepts learned in class to life. This is echoed in the sentiment "...*promoting collaborative partnerships with local environmental groups...*" such partnerships can provide students with firsthand experience in tackling environmental challenges.

This aligns seamlessly with existing research on the subject. For example, a study conducted at the University of British Columbia (UBC) delves into the role of higher education institutions in fostering transformative learning for sustainable principles and practices within local and global communities. Notably, UBC has spearheaded initiatives such as the University Sustainability Initiative (USI) and implemented programs like the SEEDS program and Sustainability Ambassadors to actively promote sustainable behaviors and practices among its students and faculty. These endeavors underscore the institution's commitment to sustainability education and its efforts to integrate sustainable principles across various aspects of campus life (Teslenko, 2019). Another study investigated the factors impacting students' engagement in sustainable online education. It revealed that the quality of course content, interactive class experiences, and a conducive, distraction-free physical environment are pivotal for maximizing students' engagement in online sustainability education (Lasekan, 2024).

## **Conclusion**

This study reveals positive developments in social studies education, evidenced by the introduction of dedicated sustainability courses and growing student enthusiasm for such initiatives. However, there appears to be a missed opportunity in fully integrating local community collaboration into these educational efforts. While effective teacher strategies such as utilizing real-life examples and project-based learning have been identified, there's a pressing need for more comprehensive teacher training and a stronger emphasis on linking knowledge with action. Student feedback underscores the importance of engaging approaches and interdisciplinary learning, yet inconsistencies in applying sustainability principles across the curriculum pose challenges, indicating a requirement for a more standardized approach. The recommendation to foster partnerships with community groups emerges as a promising solution, offering a pathway to bridge the divide between theory and practice. Through hands-on projects and engagement with local environmental experts, educators can empower students to not only be well-informed citizens but also active participants in constructing a sustainable future.

## **Recommendations**

To reinforce the foundation of study on sustainability integration within social studies, future endeavors should delve deeper into the underlying reasons behind teacher inconsistencies, perhaps through comprehensive teacher interviews or surveys. Furthermore, the considerable impact of community engagement warrants thorough examination via in-depth case studies, delving into the gradations of implementation, student advantages, and encountered challenges. It would be advantageous to assess the efficacy of diverse teacher training approaches for sustainability education. Moreover, there's a crucial need to bridge the knowledge-action gap, potentially through innovative pedagogical methods that emphasize the application of sustainability principles to real-world issues, leveraging community engagement or service-learning opportunities. Lastly, longitudinal studies can provide invaluable insights into the enduring effects of sustainability education on students' knowledge, attitudes, and behaviors over time. These multifaceted investigations hold the potential to substantially enrich the field, equipping educators with the tools to craft enduringly impactful learning journeys for the forthcoming generations.

## **Limitations**

While this study offers valuable insights from the student perspective, it is essential to acknowledge its limitations. The absence of teacher input deprives the study of crucial insights into implementation challenges, highlighting the necessity for a more comprehensive examination that includes educators' perspectives. Additionally, while the student suggestions regarding community engagement show promise, they are not thoroughly explored, warranting a deeper investigation to understand the intricacies and feasibility of implementation. It's important to recognize that student perceptions may not capture the full spectrum of integration complexities, and the study's focus on positive aspects might overlook potential frustrations experienced by students. Thus, future research should strive for a more balanced exploration of both challenges and successes to provide a more comprehensive understanding of sustainability integration in social studies education.

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## **Disclosure of Conflict of Interest**

No conflict of interest.

## Ethics Statement

Data collection for this study was conducted through an internet-based platform. Participation was entirely voluntary. Respondents provided explicit informed consent by taking a specific action on the platform, such as clicking a link to access an online survey. This action served as their acknowledgement of the study's purpose and their agreement to participate. Respondents were informed of their right to withdraw from the study at any point and were not pressured to participate. To ensure anonymity, the consent form explicitly stated that the researcher would take all necessary steps to protect their identities. This included not including any personally identifiable information in the final analysis or reporting of the research findings. The study was designed to be ethically sound and avoid any potential harm to individuals or organizations. Respondents did not receive any financial compensation for their participation. Upon completion of the study, all responses were handled with care, securely stored, and then disposed of according to ethical guidelines.

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