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Rethinking Sustainability Education in Social Studies Via P4C: Integrating Alain Serres' Works into the Curriculum*

Sosyal Bilgilerde Sürdürülebilirlik Eğitimini P4C ile Yeniden Düşünmek: Alain Serres Eserlerinin Müfredatla Entegrasyonu

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Abstract: This research aims to analyze the 4th, 5th, 6th, and 7th-grade Social Studies curriculum, developed under the "Türkiye Yüzyılı Maarif Modeli" ("Türkiye Century Education Model"-TYMM), through the Philosophy for Children (P4C) approach using the works of Alain Serres. Employing a document analysis model, the data sources include the TYMM Social Studies curriculum and Alain Serres' works, When We Have Eaten Up the Planet, and I Have the Right to Save My Planet. These works were selected through criterion sampling for their non-didactic style, their child-centered representation of sustainability literacy, and their alignment with the curriculum themes. The data were analyzed using a synthesis of deductive and inductive thematic analysis methods. The curriculum review also incorporated supportive skills such as information, citizenship, and cultural literacy, which serve as the pillars of sustainability awareness. Curriculum outcomes and philosophical stimuli were integrated through the lens of P4C's critical, creative, caring, and collaborative thinking (4C) dimensions. Findings reveal that while sustainability literacy is explicitly present in certain learning areas at the 4th and 5th-grade levels, it is not directly addressed at the 6th and 7th-grade levels. Nevertheless, results indicate that learning outcomes at higher grade levels can be strongly associated with sustainability themes through P4C-based inquiry. The study demonstrates a significant potential for theoretical integration between the value and skill framework of the TYMM and the inquiry-based structure of P4C. This research provides a robust framework for structuring sustainability education through in-depth pedagogical approaches like philosophical inquiry rather than static information transfer.

Keywords: Türkiye Yüzyılı Maarif Modeli, Social Studies, P4C (Philosophy for Children), Sustainability Literacy, Alain Serres.

Öz: Bu araştırma, Türkiye Yüzyılı Maarif Modeli (TYMM) kapsamında hazırlanan 4, 5, 6 ve 7. sınıf Sosyal Bilgiler öğretim programını; Alain Serres'in eserleri üzerinden P4C (Çocuklar İçin Felsefe) yaklaşımıyla analiz etmeyi amaçlamaktadır. Doküman inceleme modeliyle yürütülen çalışmanın veri kaynaklarını; TYMM Sosyal Bilgiler programı ile Alain Serres'in "Gezegenimizi Yiyip Bitirdiğimizde" ve "Gezegenimi Kurtarmaya Hakkım Var" eserleri oluşturmaktadır. Eserler; didaktik olmayan üslupları, sürdürülebilirlik okuryazarlığını çocuk gerçekliğine uygun yansıtmaları ve program temalarıyla örtüşmeleri nedeniyle ölçüt örnekleme yoluyla seçilmiştir. Veri çözümlemede, tümdengelimsel ve tümevarımsal tematik analiz yöntemlerinin sentezi benimsenmiştir. Müfredat taramasında, sürdürülebilirlik bilincinin sacayaklarını oluşturan bilgi, vatandaşlık ve kültür okuryazarlığı gibi destekleyici beceriler de kapsama dahil edilmiştir. Program verileri ile felsefi uyaranlar; P4C'nin eleştirel, yaratıcı, özenli ve işbirlikli düşünme (4C) boyutları süzgecinden geçirilerek eşleştirilmiştir. Bulgular, sürdürülebilirlik okuryazarlığının 4. ve 5. sınıflarda belirli öğrenme alanlarında açıkça yer aldığını, 6. ve 7. sınıflarda ise doğrudan bulunmadığını göstermektedir. Bununla birlikte, üst sınıflardaki öğrenme çıktılarının P4C temelli sorgulamalarla sürdürülebilirlik temalarıyla güçlü şekilde ilişkilendirilebileceği tespit edilmiştir. Sonuçlar, TYMM'nin değer ve beceri çerçevesi ile P4C'nin sorgulama temelli yapısı arasında kuramsal bir bütünleşme imkânı olduğunu kanıtlamaktadır. Araştırma, sürdürülebilirlik eğitiminin statik bilgi aktarımı yerine felsefi sorgulama gibi derinlikli pedagojik yaklaşımlarla yapılandırılmasına dair nitelikli bir çerçeve sunmaktadır.

Anahtar Kelimeler: Türkiye Yüzyılı Maarif Modeli, Sosyal Bilgiler, P4C (Çocuklar İçin Felsefe), Sürdürülebilirlik Okuryazarlığı, Alain Serres.

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Introduction

Ecological education is more than just one of today's modern debate topics; it is based on a historical heritage that extends to the Ancient Greek thinkers Democritus and Aristotle, and the nature-based learning emphases of Heraclitus, who viewed nature as the source of knowledge (Muntean & Gînju, 2017). This heritage was established on academic ground in the 19th century with Ernest Haeckel's systematization of the science of ecology; in the mid-20th century, it became an international policy through the global environmental programs of UNESCO and UNEP. Particularly since the 1980s, the integration of the sustainable development approach into education policies has ensured the globalization of sustainability education (Muntean & Gînju, 2017).

Today, humanity is passing through a critical geological period called the "Anthropocene"(The Age of Humans). Derived from the Greek words "anthropos" (human) and "-cene" (period/age), this concept expresses that human activities have become a transformative force over Earth's systems (Berkmen, 2022; Steffen et al., 2011). This process, accepted to have gained momentum with the Industrial Revolution, reveals the deep crisis in the human-nature relationship through ecological ruptures such as biodiversity loss, the climate crisis, and chemical pollution (Satır, 2025). Hannam & Echeverria (2009) argue that education can no

* Bu çalışma, 23-26 Ekim 2025 tarihlerinde Gazi Üniversitesi ev sahipliğinde düzenlenen 23. Uluslararası Sınıf Öğretmenliği Eğitimi Sempozyumu'nda (USOS 2025) sözlü olarak sunulan "Antroposen Çağda Sosyal Bilgiler Öğretiminde P4C Temelli Sürdürülebilirlik Eğitimi: Alain Serres'in Eserleri Üzerine Bir İnceleme" başlıklı özet bildirinin gözden geçirilmiş ve genişletilmiş hâlidir.

longer be a static transfer of information. It is now an obligation for education to shed this static structure for young generations surrounded by globalization and an uncontrolled consumption culture. In this direction, education should turn towards pedagogical approaches that encourage conscious and rational behavioral changes in individuals. In connection with this change in education, the concept of 'literacy' is also being redefined in the literature. A linear perspective directed only at textual data is no longer considered sufficient. With its new definition, literacy is accepted as a 'set of competencies' that enables the individual to pass global dynamics through a critical filter. This approach is based on interpreting the world on an ethical responsibility plane (Misiaszek, 2022). Ecological literacy, which is at the center of this transformation, focuses on the earth's capacity to support life and brings the responsibility of protecting this capacity to the individual's agenda (El Ansari & Stibbe, 2009).

Sustainability literacy is a broader umbrella concept that encompasses ecological literacy. In this context, a sustainability-literate individual not only knows ecological concepts but also takes on the guardianship of limited natural resources. These individuals are people who respect the right to life of all living beings and adopt the principle of intergenerational justice. Furthermore, they possess the competence to manage environmental, socio-cultural, and economic resources with a rational methodology (MEB, 2024a). This equipment represents a social responsibility consciousness blended with ethical sensitivity rather than a cognitive mass of information. This holistic pedagogical attitude requires the transformation of consciousness into concrete and sustainable actions.

As a result of the search to produce a systematic solution to the local reflections of global crises and the changing perception of literacy, the "Türkiye Yüzyılı Maarif Modeli"(TYMM - Türkiye Century Education Model) was implemented in Türkiye in 2024. TYMM aims to raise individuals who are not only knowledgeable but also environmentally sensitive and capable of making ethical decisions within the framework of "virtue-value-action" integrity. Today's children are faced with a more complex and rapidly changing environmental reality compared to previous generations. Environmental changes and the increase in opportunities for accessing information have made these problems more visible and debatable. This situation makes it mandatory to handle environmental problems not only with scientific data but also within the framework of ethical responsibilities. For the sustainability of democratic societies, it is essential for individuals to be able to distinguish the ethical dimensions of human actions and develop a critical perspective (Papathanasiou, 2023). Realizing the harm caused by environmental problems to living things is a basic prerequisite for the solution of these problems. This awareness can be built from an early age through environment-themed illustrated children's books (Bozkurt, 2021).

Social Studies education has an interdisciplinary structure that handles human-environment interaction with its historical, geographical, and economic dimensions. Thanks to this structure, Social Studies has a strategic importance in providing the literacy required by the Anthropocene age. However, despite updates in education systems, environmental education in Türkiye is generally limited to the transfer of cognitive content. This situation clearly demonstrates the lack of pedagogical models through which students can discuss complex environmental problems on an ethical and philosophical level.

At this point, the P4C (Philosophy for Children) approach, developed by Matthew Lipman and Ann Sharp, stands out. P4C contains at its center an understanding of a "Community of Inquiry" where students participate in collaborative dialogue (Lipman, 2003; Stanley, 2012). The philosophy for children pedagogy is fed by the Socratic dialogue method as well as Charles Peirce's theory of inquiry and John Dewey's philosophy of logic, politics, and epistemology. The theoretical infrastructure of the approach has been enriched by the social psychology approaches of Mead and Vygotsky. Its methodological framework is based on Justus Buchler's theory of judgment and classroom discussion techniques. Furthermore, Sharp has provided an inclusive structure by blending fields such as ecology, feminism, and theology with this pedagogy (Gregory et al., 2025). Unlike traditional academic philosophy, P4C does not see philosophy as a mere field of information. On the contrary, it positions philosophy as a vivid and dynamic field where children ask questions about their existence in the world (Kizel, 2016). Lipman and Sharp broke away from the rigid Piagetian stage understanding in developmental psychology while bringing philosophical research methods into the classroom. Lipman and Sharp implemented a logical methodology, arguing that children can acquire analogy-making, connection-building, and justification skills at an early age. This process is not just a cognitive activity. The process is shaped within a collaborative dialogue community where students listen to each other, question, and correct their own thoughts (Gregory et al., 2025).

The basic elements of P4C pedagogy are directly related to the intellectual virtues aimed to be settled in the individual's character. In this framework, the inquiry process nourishes curiosity and attention, concept construction nourishes creativity and deep thinking, and dialogue nourishes open-mindedness along with communication skills. Similarly, reasoning skills provide a critical attitude and reasonableness, while the reflection stage develops both the habit of considering others and self-reflection (Sutcliffe, 2022). In this respect, P4C is a powerful pedagogy for providing the "environmental ethics" and "responsibility" consciousness required by sustainability literacy. The four basic thinking skills of the approach (critical, creative, caring, and collaborative thinking) allow children to handle environmental problems not only as technical problems but as moral issues (Lipman, 1991).

The materials used in P4C education are the "stimuli" that form the basis of the inquiry process (Sharp, 2017). Especially illustrated children's books enable children to think more complexly and deeply thanks to the interaction of text and visuals (Haynes & Murris, 2012). While these works provide a suitable ground for values education, they allow children to develop inquiry skills specific to the conditions of the age they live in (Erdem, 2015). Qualified illustrated books feed the moral imagination of children by providing a natural discussion environment free from cultural burden (Wartenberg et al., 2023). Bringing children's literature products into dialogue with philosophical texts in educational processes ensures that the child develops not only a cognitive but also an existential awareness. This type of philosophical reading contributes to the transformation of childhood's natural but unnoticed connection with nature into a sustainable environmental consciousness in adulthood (Miller, 2011). Environmental problems being solved touch upon disciplines such as ethics, morality, aesthetics, and logic. In philosophical discussions, students can deepen their thoughts on the value of nature for humans, animal rights, and consumption culture. It

is possible to include philosophical literary stories in the process through P4C methods in order to create awareness about the protection of nature (Borisová & Pintes, 2022).

Current applied research in the Social Studies education literature confirms the transformative effect of structured environmental activities on sustainability awareness. For example, Suna (2023), in a study at the 6th-grade level, found that thematic activities significantly increased sustainable life awareness, while Tıkışoğlu (2023) reported that the design-based learning approach developed environmental literacy and sustainable development perspectives multidimensionally. These researches embody the pedagogical efficiency of active learning models that exceed the theoretical boundaries of Social Studies teaching programs. In the literature, it is emphasized that Social Studies teaching programs mostly keep environmental education at a cognitive level, while the affective and ethical dimensions remain in the background (Kocakır & Alabaş, 2025). Current analyses on the 2024 Social Studies Curriculum (TYMM) also draw attention to the quantitative insufficiency of outcomes regarding environmental literacy (Seçgin, 2024; Gürler & Gürgen, 2025). This gap and structural limitations in the literature reveal that environmental education should be reconstructed not only as information transfer but also as a philosophical inquiry and an ethical positioning.

Research examining the impact of the P4C approach on environmental and socio-scientific issues at the primary and secondary school levels in the literature is limited in number. In a study conducted at the 4th-grade level, it was determined that handling socio-scientific issues with P4C increased students' tendencies to ask philosophical questions and their sense of curiosity (Yurtbakan & Batmaz, 2024). Similarly, it has been found that handling socio-scientific issues through philosophical inquiry with P4C improved 7th-grade students' decision-making and evidence-based thinking skills (Güler & Şengül, 2023). Erginer et al. (2024) state that analyzing children's books in the context of environmental philosophy creates a deep sensitivity. Saner and Manzo (2022) used the P4C method in the library workshops they conducted in the USA. In this study, environmental ethics issues were questioned through illustrated children's books. As a result of the research, it was revealed that children developed sensitivity and awareness towards environmental ethics. This study proves that children do not only learn superficial information. In this process, children stated that they positioned themselves as world citizens by expanding their moral imaginations (Saner & Manzo, 2022). In this context, P4C stands out as a pedagogy that allows for the creative questioning of social and environmental responsibilities (Saner & Manzo, 2022).

The works of Alain Serres (When We Have Eaten Up the Planet, I Have the Right to Save My Planet) focused on in this study present the complex problems of the Anthropocene age with a metaphorical language. Serres' narratives, rather than a didactic teaching, contain a rich content that opens concepts such as "the right of nature," "consumption frenzy," and "the rights of future generations" to philosophical inquiry. The "Virtue-Value-Action Framework," which forms the basis of the Türkiye Yüzyılı Maarif Modeli (TYMM), has determined "Livable Environment" as one of its ultimate goals. Core values such as justice, respect, and responsibility constitute the equivalent of environmental ethics in the curriculum. The Social Studies course has a structure that directly articulates with the concept of ecological citizenship in the processes of rooting environmental consciousness, developing global awareness, and internalizing sustainable life experiences. This discipline not only transfers environmental information to the individual but also instills the importance of taking personal and social responsibility for the design of a livable future. Therefore, Social Studies undertakes a strategic function in the construction of a sustainable world ideal on a plane extending from the local to the global (Ercan & Palaz, 2025). Social Studies education, due to its interdisciplinary nature, is a discipline where ethical values and high-level thinking skills such as decision-making and problem-solving are embodied (Arı & Boyraz, 2023). When the TYMM Social Studies Teaching Program is examined, it is seen that sustainability literacy is structured in certain learning areas at the 4th and 5th-grade levels (MEB, 2024b). On the other hand, it has been determined that direct learning outcomes of sustainability literacy are not included at the 6th and 7th-grade levels of the program. This gap contradicts the principle of sustainability being a continuous life skill. The current study argues that sustainability education can be handled in the outcomes of "Our Home World," "Our Living Democracy," and "Economy in Our Life" learning areas in the 6th grade, and "Our Home World"and "Technology and Social Sciences" learning areas in the 7th grade.

However, there is a distinct gap in the curriculum regarding how this theoretical framework offered by the new curriculum will be implemented in classrooms and how this consciousness will be maintained, especially at upper levels where the emphasis on sustainability decreases. By combining the works of Alain Serres with the inquisitive power of P4C pedagogy, a conceptual framework is presented on how the sustainability literacy missing at the upper levels of the program can be built with a process-oriented approach. TYMM aims to raise "wise generations" who are no longer passive recipients but have high-level cognitive skills and "Responsible Decision-Making"(SDB) competence. However, the goals in the program are generally limited to the transfer of cognitive content; the lack of methods that will provide experience through ethical dilemmas and value-oriented actions continues. This gap in the curriculum and literature brings along the problem of how the flexibility potential offered by the new curriculum will be embodied in practice. The process of "transformation into sustainable environmental consciousness" mentioned by Miller (2011) is destined to remain superficial unless it is supported by structured pedagogical approaches in the upper grades.

At this point, the main problem of the research is how the structural gaps in the TYMM Social Studies teaching program can be supported by P4C pedagogy and qualified children's literature examples, and how this integration will contribute to students' sustainability consciousness. In this context, the main purpose of the research is to determine how the sustainability literacy gaps in the TYMM Social Studies program can be enriched through philosophical inquiry communities; to reveal to what extent the learning outcomes in the TYMM Social Studies teaching program can be associated with the sustainability themes in Alain Serres' works, and to exemplify this process within the framework of P4C's core components, the '4C' thinking dimensions. The research sought answers to the following questions:

- Can the learning outcomes in the TYMM Social Studies teaching program (grades 4-7) be associated with the prominent sustainability themes in Alain Serres' works?
- How can a pedagogical opportunity area be created through P4C's 4C skills and stimuli in grades and learning areas where sustainability literacy is not included?

Method

Research Design

This research is designed using the document analysis model, a qualitative research design. Document analysis enables the systematic analysis of documents containing information about phenomena and events in cases where the researcher's opportunity for direct observation or interviewing is limited, or where the research problem focuses directly on textual materials (Yıldırım & Şimşek, 2016). O'Leary (2017) defines document examination as both an independent method and a qualitative data collection technique. In this study, document analysis was adopted as the "primary data collection method" to establish conceptual bridges between the TYMM Social Studies Curriculum and examples of children's literature.

Data Sources

The materials constituting the analysis units of the research were determined in accordance with "criterion sampling," one of the purposeful sampling methods (Büyüköztürk et al., 2020). The materials forming the analysis units are grouped into two main categories:

- Curriculum: The 2024 Türkiye Yüzyılı Maarif Modeli (TYMM - Turkey Century Education Model) Social Studies Course Curriculum (Grades 4, 5, 6, and 7).
- Literary Works (Philosophical Stimuli): The works titled *Gezegenimizi Yiyip Bitirdiğimizde* (When We Ate the Planet - 28 pages) and *Gezegenimi Kurtarmaya Hakkım Var* (I Have the Right to Save My Planet - 40 pages) penned by Alain Serres. Factors influencing the selection of these works included their metaphorical treatment of themes such as ecological ethics, sustainability literacy, and children's rights; the potential of their visuals, presented via collage technique, to serve as philosophical stimuli; and their recognition in international literature. Furthermore, the fact that the works possess an open-ended, thought-provoking narrative style that encourages inquiry—suitable for the nature of P4C pedagogy—rather than a didactic language, was among the selection criteria.

Data Analysis

The data obtained in this research were analyzed through a synthesis of deductive and inductive thematic analysis methods to combine the theoretical framework with the unique patterns presented by the data (Patton, 2018). In the deductive thematic analysis process, the learning outcomes in the TYMM Social Studies curriculum and Alain Serres' two picture books were examined through the components of the P4C (Philosophy for Children) approach (critical, caring, creative, and collaborative thinking), which forms the basis of the research. At this stage, the data were integrated within the framework of predetermined P4C parameters and sustainability literacy criteria, and their compatibility with the existing theoretical structure was tested. In the inductive analysis stage, by focusing on the entire data set without a preliminary theoretical constraint, an attempt was made to discover new themes, original metaphors, and implicit meaning patterns arising from the interaction between Alain Serres' philosophical stimuli and the TYMM components. As highlighted by Braun & Clarke (2006), this approach ensured a deep and rich understanding of the data set.

The analysis units were defined as "learning outcomes (ÖÇ), skills (KB, SDB, SBAB), values (D), and dispositions (E)"in the curriculum document; and as "textual elements evoking themes of sustainability, environmental ethics, responsibility, and collective action" in the literary texts. The coding process was conducted independently by two researchers; the agreement rate calculated via consensus/dissensus was used to observe the consistency of the coding. Themes and matches were reported to form the basis for the grade-level tables located in the findings section. The coding and thematic structuring process was carried out in three consecutive stages:

- Program-Oriented Coding: The learning areas of *Our Home the Earth*, *Our Common Heritage*, *Our Living Democracy*, *Economy in Our Lives*, and *Technology and Social Sciences* within the TYMM Social Studies program were scanned. During this scanning process, learning outcomes (ÖÇ) where "sustainability literacy" was not explicitly stated in the program text were also included in the analysis. Due to the interdisciplinary nature of the concept of sustainability, skills such as Information Literacy, Citizenship Literacy, and Cultural Literacy constitute the fundamental pillars of sustainability consciousness. Therefore, learning outcomes that do not explicitly mention sustainability literacy but harbor these supportive literacy types were included in the scope and coded with relevant themes on the grounds that they support the cognitive and affective infrastructure of sustainability.
- Stimulus Coding in Literary Texts (Stimulus Selection): By examining Serres' works, narratives containing themes of environmental destruction, intergenerational responsibility, and the common good were coded as "philosophical stimuli." In this step, the potential to create an inquiry space (community of inquiry ground) that could be used in P4C sessions was taken into account, rather than the texts giving direct messages.
- P4C-Based Thematic Matching and Synthesis: The codes obtained from the program and the stimuli selected from the texts were matched by passing them through the filter of P4C's four thinking dimensions (critical, creative, caring, and collaborative). Focus themes determined under the framework of "sustainability literacy" were classified according to grade levels, and sample philosophical inquiry questions were designed based on this structure.

Validity and Reliability

Validity and reliability, which are the basic criteria determining the quality of data in qualitative research, are addressed through the concepts of credibility, transferability, dependability, and confirmability (Yıldırım & Şimşek, 2016). Within the scope of this research, the following steps were carried out to ensure these criteria:

- Credibility (Internal Validity): The findings were supported by direct quotations from the curriculum; the connection between literary works and program components was exemplified through "P4C Inquiry Questions."
- Transferability (External Validity): Document selection criteria, analysis units, and coding stages were presented with a detailed description that the reader can follow.
- Consistency and Reliability: Two researchers coded independently; as a result of the calculation made with the Miles & Huberman (1994) formula regarding the matching of TYMM outcomes with Serres' texts, the percentage of agreement between the researchers was determined to be 93%, ensuring a high level of consistency. Three matches with disagreement were finalized through negotiation.

- Confirmability: Raw data belonging to the research process, coding charts, and P4C plan drafts were archived to ensure auditability.

Role of the Researchers

Due to the nature of qualitative research, the researcher's theoretical equipment and practical experience are determining factors in terms of the analytical depth of the data and the validity of the findings. In this context, the following points regarding the researchers' areas of expertise are important for increasing the study's level of reliability and credibility:

The first researcher, who performed the data analysis and structured the philosophical inquiry designs, is a field expert who has completed three-stage practitioner training in accordance with international standards in the field of Philosophy for Children (P4C). The researcher conducted their doctoral dissertation directly on P4C applications in Social Studies education and has managed numerous philosophical inquiry workshops across a wide range, from preschool to higher education levels. This theoretical and experiential accumulation guarantees both the philosophical quality of the inquiry questions created based on Alain Serres' two mentioned works and their pedagogical compatibility with TYMM outcomes.

The second researcher carries out academic studies in the field of P4C and Social Studies education and undertook the roles of "expert audit" and "inter-coder consistency" during the analysis process. The analysis process conducted by the researchers on this common ground of expertise ensured that the data were purified from subjective interpretations and passed through an analytical filter at all stages, from the selection of philosophical stimuli to the generation of inquiry questions.

Findings

In this research, the learning areas of *Our Home the Earth*, *Our Common Heritage*, *Our Living Democracy*, *Economy in Our Lives*, and *Technology and Social Sciences* within the Türkiye Yüzyılı Maarif Modeli (TYMM) Social Studies curriculum for grades 4, 5, 6, and 7 were analyzed by associating them with the themes of environmental ethics, intergenerational responsibility, and sustainability prominent in Alain Serres' works. In the analysis, Serres' works were treated as philosophical stimuli; based on document data, it was evaluated whether these stimuli, together with the four fundamental thinking skills of P4C pedagogy (critical, creative, caring, and collaborative thinking), constitute a basis for a pedagogical framework regarding sustainability literacy in Social Studies courses.

Sustainability and P4C Analysis at the 4th Grade Level

The findings of the document analysis, conducted to seek an answer to the first sub-problem of the research—"How the learning outcomes in the TYMM Social Studies teaching program (4th grade) can be associated with the prominent sustainability themes in Alain Serres' works within the P4C framework"—are presented below. As a result of the analysis, it was determined that the "Sustainability Literacy"(OB8) component is explicitly defined in the learning areas of "Economy in Our Life" and "Our Common Heritage"; however, it was found that this literacy is not explicitly included in the "Our Home World" learning area, which is expected to show a conceptual overlap with this literacy in terms of learning outcomes. Within the context of this sub-problem, the details of how the current learning outcomes are structured and matched with Alain Serres' works and P4C's 4C thinking skills are presented in Table 1:

The data presented in Table 1 demonstrate that the learning areas of the 4th-grade Social Studies curriculum can be successfully integrated with the descriptions of ethical values and ecological heritage in Serres' works. Based on the document analysis, the following primary findings were reached:

- In the 'Our Home World' learning area, it was observed that physical processes such as the climate crisis and ecological destruction are blended with P4C's caring and critical thinking skills; it was seen that these data can be integrated into a value-oriented ethics of care and a foundation of moral responsibility, rather than remaining a technical set of information.
- In the 'Economy in Our Life' learning area, it was identified that sustainability literacy integrates with the philosophical connections established between the material value of resources and their intrinsic value for sustaining life. It was determined that questioning production and consumption processes through the axis of life's continuity shifts the perception of economy to an ethical ground.
- It was found that the values of Frugality and Patriotism underwent a structural transformation as a result of being blended with Serres' philosophical questions on need and property. It was detected that this situation evolves the traditional understanding of protecting borders into a broad ethical responsibility consciousness that encompasses protecting the soil, water, and climate of the homeland.
- In the 'Our Common Heritage' learning area, it was seen that the concept of heritage can be integrated with the dimension of ecological heritage through Serres' metaphors, which define nature as a 'common treasure.' Thus, it was determined that heritage is positioned not merely as an object to be protected, but as a right to be transferred to future generations.
- It was identified that the Responsibility tendency and Collaboration (SDB2.2) skill in the program align with a sense of responsibility based on intergenerational justice and a collective consciousness that transcends individual action, through the theme of protecting natural resources.

Sustainability and P4C Analysis at the 5th Grade Level

The findings of the document analysis, conducted to address the first sub-problem of the research—"How the learning outcomes in the TYMM Social Studies teaching program (5th grade) can be associated with the prominent sustainability themes in Alain Serres' works within the P4C framework"—are presented below. The document analysis of the 5th-grade Social Studies program revealed that while sustainability literacy (OB8) is included in the "Our Home World"and "Economy in Our Life" learning areas, it is not addressed in the "Our Common Heritage" learning area. Within the context of this sub-problem, the details of how the current learning outcomes are structured and matched with Alain Serres' works and P4C's 4C thinking skills are presented in Table 2:

Table 1. Analytical matching of 4th grade TYMM components with P4C 4c skills and Serres' works

Learning Area	TYMM Learning Outcomes and Components	Philosophical Stimulus from Serres	P4C – 4C Skill and Inquiry Area
Our Home the Earth	**Learning Outcomes:** SB.4.2.2, SB.4.2.3 (a, b, c) **Conceptual Skills:** Analysis **Values**: Mercy, Sensitivity, Cleanliness, Patriotism, Healthy Living **Dispositions:** Curiosity, Responsibility, Creativity **Literacy:** Information Literacy	"…when we drink the last drop of the last clean river on earth, when we pick the last fruit from its branch…" (*When We Ate the Planet*) "Why is the temperature rising everywhere on our planet? Why are forests burning? Why are the ice floes that polar bears walk on melting? Or conversely, why is it raining excessively? While floods sweep away houses, rivers overflow." (*I Have the Right to Save My Planet*)	**Caring Thinking:** Is the depletion of natural resources only a physical loss, or does it create other types of losses? Is mercy towards nature a choice or an ethical responsibility? **Critical Thinking:** Is the climate crisis a natural event, or is it something humans do? If the climate crisis arises from human behaviors, does this make us morally responsible? Does belonging to a place (Patriotism) require being responsible for that place's environmental future? Is patriotism only about protecting borders, or is protecting the homeland's climate and future water also a patriotic duty?
Our Common Heritage	**Learning Outcomes:** SB.4.3.3 (a, b), SB.4.3.2 **Conceptual Skills:** Interpretation, Construction **Literacy**: OB8. Sustainability Literacy **Values:** Responsibility, Patriotism **Dispositions:** Self-Confidence, Responsibility, Creativity	*"Since the formation of the world, water is the common treasure of humans, plants, animals, in short, all of us." (I Have the Right to Save My Planet)*	**Creative Thinking:** If we were to redesign the world, what would we view as 'heritage' and why? **Critical Thinking**: Does viewing a planet as 'heritage' change our moral responsibilities towards it? Does viewing something as heritage mean we can treat it however we want? If the planet is a treasure, is protecting it a right or an inevitable duty?
Economy in Our Lives	**Learning Outcomes:** SB.4.5.1, SB.4.5.2 (a, b, c, ç) **Conceptual Skills:** CS. Reflection **Values:** Saving (Thrift), Patriotism **Dispositions:** Curiosity, Responsibility, Seeking the Truth, Analytical Thinking, Critical Viewing **Literacy:** Sustainability Literacy	"We will be left with only money. But money cannot be eaten. We will be left with... Gold! But gold cannot be breathed!" (*When We Ate the Planet*)	**Critical Thinking:** Are things that cannot be eaten but are accumulated valuable? Why? Does the fact that something cannot be eaten or breathed mean it is not valuable? Is the value of something measured by its contribution to survival or by the feeling of ownership? Is it right to produce and consume things that do not make people happy? Why?
Process and Social-Emotional Skills	**SES Skills:** Collaboration, Responsible Decision Making	*"Humans, look after our planet as you look after your children." (I Have the Right to Save My Planet)*	**Caring and Collaborative Thinking:** Can environmental problems be solved by individuals one by one, or must they be solved together? Does treating the planet "like our child" call us to individual action or collective movement? If everyone says "I am doing my best," is the planet truly protected?

Tablo 2. Analytical matching of 5th grade TYMM components with P4C 4c skills and Serres' works

Learning Area	TYMM Learning Outcomes and Components	Philosophical Stimulus from Serres	P4C – 4C Skill and Inquiry Area
Our Home the Earth-	**LO:** SB.5.2.2 – SB.5.2.3 **CS:** Comparison **Discipline Skill:** Spatial Thinking **Values:** Sensitivity, Cleanliness **Literacy:** Sustainability Literacy (OB8)	"When we cut down the last tree, when we skin, cut and sew the fur of the last animal…" (*When We Ate the Planet*)	**Critical Thinking:** Does human development justify harming nature? Does the growth of a place always mean it is better? Does the 'right to use' something cover the 'right to destroy' it?
Our Common Heritage	**LO:** SB.5.3.1. **CS:** Comparison **Dispositions:** Curiosity, Critical Viewing, Analytical Thinking, Creativity, Responsibility **Values:** Love, Patriotism **Literacy:** Cultural Literacy	*"Show respect to the environment, the rivers, the oceans they may never touch. Even if they are far away, they all belong to the children." (I Have the Right to Save My Planet)*	**Creative Thinking:** Can a river or an ocean be accepted as 'heritage' like a historical artifact? **Caring Thinking:** Are we responsible only for the artifacts in our own geography, or are we also responsible for other places in the world?
Economy in Our Lives	**LO:** SB.5.5.1 – SB.5.5.2 **CS:** Interpretation, Summarizing **Dispositions:** Responsibility, Original Thinking, Creativity **Values:** Saving (Thrift), Patriotism **Literacy:** Sustainability Literacy	"*Every day scientists warn: 1 million animal and plant species could be wiped off the face of the earth… If a plant species disappears, the insects that feed on its flowers also disappear…"* (*I Have the Right to Save My Planet*)	**Creative Thinking:** If the Earth had a budget, what would be our priorities? Is saving only about spending less, or is it about living more consciously? Is saving only for ourselves, or is it also for others and the planet?
Process and Social-Emotional Skills	**SES Skills:** Collaboration, Responsible Decision Making	*"If the 3 billion children in the world found 3 billion magnificent ideas, our planet would become even more beautiful!" (I Have the Right to Save My Planet)*	**Collaborative Thinking:** Can humans solve environmental problems one by one, or must they solve them together and through rules? Is the proposition "If everyone sweeps in front of their door, the world will be clean" sufficient? Can people's participation in decision processes make protecting the environment fairer or more effective? Why?

The data presented in Table 2 demonstrate how the learning outcomes in the 5th-grade Social Studies curriculum can be operationalized within the framework of sustainability literacy (OB8) through the philosophical stimuli of Alain Serres. As a result of the document analysis, the following primary findings were reached:

- It was observed that the skill of Spatial Thinking (SBAB7) and the value of Sensitivity in the 'Our Home World' area align with Serres' warnings regarding ecosystem losses; this interaction transforms geographic knowledge into an ethical inquiry regarding the balance between human development and biodiversity conservation.
- It was identified that Cultural Literacy, as a core component of 'Our Common Heritage,' can be integrated with the dimension of 'ecological heritage' through Serres' portrayal of nature as a global treasure. This shift repositions nature as a shared legacy for future generations rather than just a physical environment.
- It was determined that the value of Frugality (Saving) in the 'Economy in Our Life' area is reconfigured within the context of the 'ecological budget.' By associating economic activities with biodiversity loss, the concept of saving is expanded from personal financial gain to the conscious management of planetary resources.
- It was found that the process skills of Responsible Decision-Making (SDB3.3) and Collaboration (SDB2.2) match with Serres' emphasis on collective solutions. This alignment addresses environmental challenges through collaborative thinking and democratic participation, framing sustainability as a shared moral responsibility.

Transforming Structural Gaps in the 6th-Grade Social Studies Program into "Opportunity Spaces" via P4C Pedagogy

The analyses conducted regarding the second sub-problem of the research—" How can a pedagogical opportunity space be created through P4C's 4C skills and philosophical stimuli in grade levels and learning areas where sustainability literacy (OB8) is not explicitly included?"— revealed the structural transformation potential of the curriculum. As a result of the document analysis conducted on the 6th-grade Social Studies curriculum, it was determined that "Sustainability Literacy"(OB8) is not defined as a direct process component or a learning outcome at this grade level. However, the findings indicate that this structural gap can be transformed into a "pedagogical opportunity space" within the framework of the teacher's pedagogical autonomy, through P4C—a philosophical pedagogy—and qualified literary stimuli.

Learning outcomes that are not directly presented under the heading of sustainability in the curriculum, yet include themes such as democratic rights, technology, economic activities, and patriotism, can be unified under the common denominator of "sustainability" through philosophical inquiries. This situation is a concrete indicator of how the flexible structure of the curriculum can be enriched with deepening approaches like P4C. In the context of this sub-problem, how the learning areas in the 6th-grade Social Studies program can be functionalized through P4C and Serres' works, despite the lack of a direct sustainability component, is presented in Table 3:

The data presented in Table 3 reveal the structural relationship between the learning outcomes of the 6th-grade Social Studies curriculum and the themes of human-nature interaction, democratic responsibilities, and economic activities found in Alain Serres' works. Based on the document analysis, the following primary findings were reached:

- In the 'Our Home World' learning area, it was found that the skill of Spatial Thinking (SBAB7), by merging with Serres' emphasis on the 'free' elements in nature, creates an ethical spatial consciousness and a field of responsibility instead of the unlimited consumption of what is free. Space is re-conceptualized not merely as a geographical coordinate, but as an ethical network of relationality established between the individual and nature.
- It is observed that the components of rights and responsibilities in the program's 'Our Living Democracy' learning area integrate with Serres' emphasis on children's rights, positioning environmental rights as an inseparable part of children's rights and a fundamental domain of participation for ecological citizenship.
- In the 'Economy in Our Life' learning area, it was determined that the values of Entrepreneurship (SBAB6) and Honesty (D6) can be transferred into a field of philosophical inquiry that deciphers the ethical contradiction between economic profit and ecological destruction, through the example of palm oil production. This transformation turns the student from a passive consumer into an ethical subject who questions the environmental costs of production.
- As seen in the 'Social-Emotional Skills' section of the table, it was identified that the components of Collaboration (SDB2.2) and Responsible Decision-Making (SDB3.3) match with Serres' emphasis on the 'right to share and hope' on the basis of a fair culture of sharing. The solution to environmental problems is constructed as a moral togetherness rather than a technological necessity.
- Specifically, the association of the value of Patriotism (D19.3) with the 'consciousness of protecting resources' prepares the ground for the understanding of sustainability to establish an ontological and structural integrity with a national value. Loving one's homeland is defined as a responsibility equivalent to protecting its soil, water, and ecological future.

Transforming Structural Gaps in the 7th-Grade Social Studies Program into "Opportunity Spaces" via P4C Pedagogy

Within the scope of the research's second sub-problem—" How can a pedagogical opportunity area be created through P4C's 4C skills and philosophical stimuli in grade levels and learning areas where Sustainability Literacy (OB8) is not included?"— the 7th-grade teaching program was examined. The 7th-grade Social Studies program aims for students to reach a level where they analyze global issues and scientific progress. Although "Sustainability Literacy"(OB8) is not included as a direct component at this level, it was observed that the future-oriented and rights-based expressions in Alain Serres' work, *I Have the Right to Save My Planet*, provide a strong foundation for transforming current outcomes into a global environmental ethic. This situation demonstrates how the structural gap in the program can evolve into a "pedagogical opportunity space" through P4C. In the context of this sub-problem, the details of how the learning areas in the 7th-grade program possess sustainability content through P4C and Serres' stimuli are presented in Table 4:

The data presented in Table 4 reveal that the learning outcomes of the 7th-grade Social Studies program exhibit structural alignment with the themes of environmental responsibility, global citizenship, and scientific inquiry in Alain Serres' works. Based on the document analysis, the following primary findings were reached:

Table 3. Analytical matching of 6th grade TYMM components with P4C 4c skills and Serres' works

Learning Area	TYMM Learning Outcomes and Components	Philosophical Stimulus from Serres	P4C – 4C Skill and Inquiry Area
Our Home the Earth	**LO:** SB.6.2.2 **Discipline Skill (SBAB7):** Spatial Thinking (Analyzing Connections) **CS:** Interpretation **Values:** Sensitivity, Cleanliness, Patriotism	*"Everything is free here! Sun, light, brightness are free. Bird songs, the shade of trees... Not for money, no need to pay like in the stores!"* (*I Have the Right to Save My Planet*)	**Critical Thinking:** When humans use a space, does the meaning of that space change? If everything in nature is 'free,' does that mean we have the 'right' to treat them however we want? Do we have a responsibility toward things that are free? Why?
Our Living Democracy	**LO:** SB.6.4.2 **CS:** Analysis, Inquiry **SES:** Communication, Collaboration, Responsible Decision Making **Values:** Justice, Freedom, Responsibility	*"There is a universal convention covering the rights of all children of the world. Just as feathers protect a bird from rain, this convention was written to protect children from bad conditions." (I Have the Right to Save My Planet)*	**Caring Thinking:** If nature is not protected while human rights are, can that society be considered just? Does children's right to protection cover the right to live in a clean environment?
Economy in Our Lives	**LO:** SB.6.5.1 **Discipline Skills:** Change and Continuity, Entrepreneurship **CS:** Analysis **Values:** Diligence, Honesty, Patriotism	*"I have the right to know that forests are cut down to grow palms in Borneo. Since this oil is used in biscuits and chocolates, it makes a lot of money..."* (*I Have the Right to Save My Planet*)	**Critical and Creative Thinking:** Is economic growth possible without consuming nature? Does a product being cheap and tasty legitimize the destruction of nature in its production? Can an enterprise aim to both make a profit and protect nature?
Process and Social-Emotional Skills	**SES Skills:** Communication, Collaboration, Adaptability, Flexibility, Responsible Decision Making	*"I have the right to hope that humans will learn to share the power of every grain of rice and the smile created by every slice of watermelon in the future. I also have the right to hope that no child on earth will ever go hungry." (I Have the Right to Save My Planet)*	**Collaborative Thinking:** Are we responsible today for the smile of a future child? Is sharing a necessity? Are hunger and environmental problems solved only by technology, or by a fair culture of sharing?

Table 4. Analytical matching of 7th grade TYMM components with P4C 4c skills and Serres' works

Learning Area	TYMM Learning Outcomes and Components	Philosophical Stimulus from Serres	P4C – 4C Skill and Inquiry Area
Our Home the Earth	**LO:** SB.7.2.1 (a, b, c) **CS:** Interpretation, Summarizing **Dispositions:** Curiosity, Creativity **Values:** Responsibility, Helpfulness, Friendship, Freedom, Love **Literacy:** Information Literacy (OB1)	*"Then polar bears would be everywhere! And we would all scream together: Grrr! Maybe then everyone would hear our voice."* (*I Have the Right to Save My Planet*)	**Caring Thinking:** What does it mean to be heard? Does being heard mean just making noise, or does it mean being taken seriously? Should humans speak on behalf of living things that cannot make their voices heard? Is it necessary to experience what someone lives to understand their pain? What does it mean to take responsibility for living things that cannot defend themselves?
Technology and Social Sciences	**LO:** SB.7.6.3 (a–e) **CS:** Generalization, Problem Solving **Discipline Skill:** Change and Continuity **Discipline Skill:** Scientific Inquiry **Values:** Sensitivity, Freedom **Literacy:** Information Literacy (OB1)	*"Or maybe a child invents a ZERO-CO plane that runs only on wind energy. A plane made of paper, where drawing pictures on it would be enough to travel…" (I Have the Right to Save My Planet)*	**Creative Thinking:** Is the beginning of an invention knowledge or imagination? Can technology exist without imagination? Does an idea have to be made for it to be considered real? **Critical Thinking:** What are the features that make something "good"? If something is useful to humans but harms nature, can we call it "good"? Is everything that is fast good? If a technology is useful to humans but harms nature, can we call this good?
Process and Social-Emotional Skills	**SES Skills:** Communication, Social Awareness, Responsible Decision Making	*"I have the right to hope that humans will learn to share the power of every grain of rice and the smile created by every slice of watermelon in the future. I also have the right to hope that no child on earth will ever go hungry." (I Have the Right to Save My Planet)*	**Collaborative Thinking:** Is it possible to do something for people who have not been born yet? Does the happiness of future people depend on our behaviors today? Can a human bear responsibility for someone they do not know? Is sharing a learned behavior or a value? Is it still right to share when we do not want to? Is sharing always good?

- It was found that the values of 'Helpfulness' and 'Responsibility' merged with Serres' theme of *"speaking on behalf of creatures that cannot make their voices heard."* Thus, the concept of helpfulness, traditionally seen only as solidarity between humans, transforms into a broad environmental responsibility and an ethics of care encompassing the entire ecosystem and other living beings.
- It is observed that the scientific inquiry and change/continuity skills in the program question the technology-nature relationship through Serres' imagery of a *"zero-carbon aircraft."* This match repositions technology not merely as a tool for progress but as an "area of ethical responsibility" where harm to nature is questioned.

- It was determined that the Social Awareness and Responsible Decision-Making skills were integrated with Serres' emphasis on the rights of future generations. This situation structures sustainability not as an issue of today, but as a quest for justice based on intergenerational rights. Consequently, the student gains a consciousness that questions the impact of today's decisions on the lives of future generations.

These data prove that theoretical outcomes in the 7th-grade program, when combined with P4C's philosophical stimuli, go beyond being mere lesson topics and transform into an ethical responsibility consciousness that shapes the students' worldview.

Limitations of the Research

This research is limited to document analysis. The examination is restricted to a single curriculum (TYMM Social Studies 4–7) and two works by Alain Serres (*When We Ate the Planet*, *I Have the Right to Save My Planet*); no evaluation was made based on classroom implementation, observation, interviews, or student outcomes. Therefore, the findings present an analytical framework based on curriculum–stimulus–skill-value-disposition matching, rather than producing direct results regarding the in-class effects of the P4C-based approach.

Discussion

The findings obtained in the research demonstrate the imbalance in the distribution of Sustainability Literacy (OB8) within the Türkiye Yüzyılı Maarif Modeli (TYMM - Türkiye Century Education Model) Social Studies curriculum and how this situation can be compensated for through pedagogical opportunities. By its nature, the Social Studies course aims to raise individuals as sensitive and responsible citizens toward global problems. However, current analyses in the literature display the structural limitations of the program in achieving this goal. Gürler & Gürgen (2025) identified that the "environmental literacy" skill was completely removed from the 2024 Social Studies Curriculum. Similarly, Seçgin (2024) found that the outcomes, skills, and values regarding the environmental dimension of the Sustainable Development Goals are quantitatively and qualitatively quite insufficient in this program.

In support of these structural criticisms in the literature, Kocakır & Alabaş (2025) emphasize that environmental education in Social Studies teaching programs mostly remains at the "cognitive" level, while "affective" and "psychomotor" goals that would shape the student's attitudes and behaviors are highly inadequate. The authors suggest that for the solution of environmental problems, the "environmental ethics" dimension should be centralized in the program, and environmental topics should be integrated into all units with an interdisciplinary design instead of being squeezed into specific learning areas. In light of these empirical data, our study offers an ecopedagogical framework centered on philosophical inquiry, distinct from traditional approaches where sustainability is often handled within the axis of normative goals and cognitive transfer. One of the most noteworthy inferences reached in the research is how these structural and affective gaps in the teaching program can be transformed into functional opportunity spaces through P4C pedagogy and philosophical stimuli constructed from the works of Alain Serres.

Findings obtained at the 4th-grade level prove how sustainability literacy can create an ethical integrity in children's worlds and how it can build the "affective domain" that Kocakır & Alabaş (2025) drew attention to as a deficiency. Serres' expression, 'money cannot be eaten, gold cannot be breathed,' transforms the economy from being just a trade area into a consciousness that focuses on the intrinsic value of resources rather than their instrumental value. Specifically, it is observed that the value of 'Patriotism,' which is traditionally limited to borders, symbols, and cultural elements, is reconstructed through philosophical inquiry processes. In this process, the love of the motherland evolves into an inclusive understanding of 'ecological patriotism' that includes protecting the soil, water, climate, and biodiversity of the homeland, rather than just a cultural belonging. Furthermore, defining the motherland not just as a relic inherited from the past but as a 'common treasure' (ecological heritage) which is the right of future generations, carries the student's responsibility tendency to the dimension of intergenerational justice. These findings directly meet the recommendation of Kocakır & Alabaş (2025) regarding interdisciplinary dissemination and establishing connections with every unit, by revealing that sustainability literacy should not be limited to the "Economy in Our Life" and "Our Common Heritage" learning areas and it must be explicitly added to the program outcomes in the "Our Home World" learning area.

At the 5th-grade level, it was determined that OB8 is not included in the "Our Common Heritage" area. However, this structural gap can be closed by the teacher integrating Serres' warning to "show respect to the oceans" and the question 'Is spatial growth always progress?' into the process with P4C's caring thinking skills. Discussing the value of Frugality through the question 'If the world had a budget, what would our priorities be?' confronts the child with the ethical responsibility of economic activities over biodiversity and transforms the concept of "environmental ethics" demanded in the literature (Kocakır & Alabaş, 2025) into a concrete classroom practice.

Although Sustainability Literacy (OB8) is not directly included as a component in the 6th-grade program, it has been identified that areas such as "Economy in Our Life" and "Our Living Democracy" carry process components that can be associated with this skill. Passing the values of Entrepreneurship (SBAB6) and Honesty (D6) through an 'ecological truth filter' based on Serres' Borneo forests example pulls economic activities onto an ethical plane. Serres' warning about the 'right to share and hope' reveals that an ethics-based culture of sharing is as mandatory as technological interventions in the solution of global problems. At this point, the views of Hannam & Echeverria (2009) regarding how participation in communities of philosophical inquiry (CoI) develops the ability to notice ethical dilemmas are embodied in the environmental rights discussion in the 6th-grade "Our Living Democracy" area.

Although the lack of direct structuring of OB8 at the 7th-grade level creates a gap in high-level analysis skills, addressing Scientific Inquiry (FBAB13) and Change/Continuity (SBAB4) skills through Serres' imagery of the 'zero-carbon airplane' fills this gap. The student's evaluation of technological progress in the context of the common interest of not only humanity but also nature, positions technology as a sustainability-oriented "moral problem-solving process." This situation directly overlaps with the ecopedagogical approach emphasized by Misiaszek (2022) and the idea that education should question the socio-political crises at the root of environmental destruction.

The findings of the research based on the synthesis of illustrated children's books and P4C exhibit full parallelism with the literature. Lyle (2018) states that for sustainability to be achieved in education, the curriculum must transition from a technical mass of information to an ethical and philosophical transformation. Especially the "virtuous human" profile aimed by the TYMM makes it possible for the values of Patriotism (D19.3) and Responsibility (D16) identified in the findings to transcend local boundaries and reach a consciousness of "ecological citizenship." While Erginer et al. (2024) state that children's books will gain a deep sensitivity toward environmental problems with P4C pedagogy, Demirsoy (2024) found that philosophical dialogues are effective in developing a sensitive approach as a result of a five-week application conducted with preschool children. When the spiral conceptual expansions proposed for the 4th-7th grade levels in our study are combined with this early period sensitivity increase identified by Demirsoy (2024), it confirms that sustainability consciousness can be built uninterruptedly from preschool to the end of secondary school. In experimental studies in the literature, Yurtbakan & Batmaz (2024) and Güler & Şengül (2023) demonstrate that conducting socio-scientific issues with P4C increases students' philosophical curiosity and decision-making skills, showing that sustainable consumption can be structured as an "issue of remaining human in the Anthropocene age" rather than a rule.

In this context, the developed critical thinking skill is in harmony with the 'conscious consumer' profile drawn attention to by Dallı & Hamarat (2023). The authors argue that the Social Studies course should protect students against misleading environmental marketing strategies such as 'greenwashing.' Questioning whether a technology is truly 'nature-friendly' in P4C sessions will turn children into active ecological citizens who can decipher these traps. Indeed, Papathanasiou (2023) emphasizes that P4C reconstructs the relationship with nature on an ethical plane, and Muhtaroğlu (2025) emphasizes the need for an interdisciplinary perspective that makes the human–nature interaction a subject of philosophical inquiry instead of one-way approaches.

Regarding the critical role of educational processes in building a sustainable future, Değirmenci and Bayramoğlu (2025) emphasize the necessity of more dominant representation of themes such as environmental consciousness and water literacy in curricula to manage ecological risks, by drawing attention to the increasing demand for water resources due to global population pressure. The vision of 'preparing the adults of the future now' pointed out by Değirmenci and Bayramoğlu requires going beyond the limited outcomes offered by the current curriculum.

The transformation of the opportunities offered by TYMM into concrete gains depends directly on the quality of implementation. Özdemirkol (2025) argues that the pedagogical autonomy of teachers, school-community cooperation, and the flexibility of the program according to local needs are decisive in increasing the model's impact. The curriculum gaps identified in our study at the 6th and 7th-grade levels (Gürler & Gürgen, 2025; Seçgin, 2024) overlap with the 'monitoring and evaluation' emphasis of TYMM (2024). According to Özdemirkol (2025), the theoretical boundaries of teaching programs can only be stretched through the creative applications of the teacher, and structural gaps in the curriculum can be transformed into meaningful life spaces for the student. The intervention process constructed in our research with Serres' works and P4C pedagogy is the most concrete example of this "curriculum enrichment" and "teacher's touch" emphasized by Özdemirkol (2025).

In conclusion, it is only possible for the school to go beyond being a place where information is just transferred through these philosophical learning environments where the student thinks deeply about their own value judgments. When TYMM is made functional with participatory policy processes and correct pedagogical strategies, it will function as a fundamental lever in Turkey's achievement of its sustainable development goals.

Conclusion and Recommendations

Conclusion

The document analysis findings obtained from this research indicate that structuring sustainability education within the Social Studies program as a mere cognitive mass of information or a limited learning area will be insufficient in achieving the desired ecological transformation. The fundamental conclusion reached by the research is that the dialogic inquiry environment offered by P4C (Philosophy for Children) pedagogy possesses the potential to transform environmental consciousness from static data into a virtue that permeates the individual's character and a robust ethical stance. In this context, the philosophical inquiry process relocates the student from the position of a passive observer watching nature from the outside and repositions them as a "thinking subject" who can establish a critical connection with ecological issues, take responsibility, and internalize the process.

Research findings revealed that the theme of sustainability, which finds a place at the curriculum level in the 4th and 5th grades, does not continue as a direct component in the upper levels (6th and 7th grades). It has been concluded that the structural risk this situation poses to the integrity of the program can be overcome through P4C pedagogy and philosophical stimuli; and that this "pedagogical opportunity space" can provide an ecological identity to the "holistic human" model aimed at by the curriculum. When the works of Alain Serres and the goals of the TYMM are evaluated with a holistic perspective, it is observed that high-level concepts such as environmental justice, intergenerational responsibility, and coexistence become a natural part of classroom philosophical dialogues.

Recommendations

In light of the document analysis results and the identified pedagogical requirements, the following recommendations are offered:

- When environmental issues are addressed in Social Studies courses, the traditional framework based solely on information transfer should be abandoned. Instead, lesson designs that are enriched with P4C activities, use qualified children's literature as "philosophical stimuli," and are centered on an axis of ethical inquiry should be integrated into the curriculum.
- It is of strategic importance that the sustainability learning outcomes, which are concentrated in the 4th and 5th grades, do not undergo a hiatus at the upper levels (6th and 7th grades). Vertical spiral progression should be maintained by articulating interdisciplinary units such as P4C-based "Critical Ecology" or "Sustainability Ethics" into the Social Studies program at these grade levels.
- Didactic methods should be discarded in providing environmental values. Inquiry guides and activity sets that

center on P4C's "Community of Inquiry" model and elevate the student from a passive recipient to a "thinking subject" should be included in textbooks.

- The emphasis on sustainability in the 6th and 7th-grade Social Studies teaching programs should be made visible with more explicit and measurable learning outcomes within the contexts of "ecological citizenship," "global citizenship," and "scientific ethics."
- Action research, mixed-method, or qualitative studies should be planned to examine the reflections of the theoretical and curriculum-oriented framework presented in this research on classroom practices, and to measure the changes in students' sustainability perceptions and ethical reasoning skills.

Author Contributions

All authors contributed equally to all stages of the manuscript. All authors have read and approved the final version of the study.

Ethical Declaration

The authors declare that this study does not require ethics committee approval and that the guidelines set forth by the Committee on Publication Ethics (COPE) were adhered to throughout the entire research process.

Conflict Of Interest

The authors declare that they have no conflicts of interest with any institution or individual regarding this study.

Declaration Of Generative AI Use

During the English language editing phase of this study, the Gemini Pro artificial intelligence tool was utilized to a limited extent solely for translation purposes. The accuracy of the translated text was carefully reviewed by the authors, and necessary corrections were made. The authors remain fully responsible for the content of the article.

References

Arı, S. ve Boyraz, C. (2023). K-12 beceri eğitiminde üst düzey düşünme becerileri: Sosyal bilgiler dersi örneği. Millî Eğitim, 52 (Özel Sayı), 601-626. https://doi.org/10.37669/milliegitim.1309163

Berkmen, B. (2022). (Neg)Antroposen ve Yaşamın Noetik Vasfı: Bernard Stiegler'in Antroposen Eleştirisi. *REFLEKTİF Sosyal Bilimler Dergisi*, *3*(3), 409–426. https://doi.org/10.47613/reflektif.2022.80

Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology, 3*(2), 77–101. https://doi.org/10.1191/1478088706qp063oa

Borisová, S., & Pintes, G. (2022). Themes of nature in children's philosophical literary stories as one of the possibilities of forming a relationship with nature. *Proceedings of ICERI2022 Conference* (pp. 5541–5546). IATED Academy. https://doi.org/10.21125/iceri.2022.1384

Bozkurt, M. (2021). Resimli çocuk kitaplarında çevre sorunları: Çevreci öyküler serisi. *Journal of World of Turks / Zeitschrift für die Welt der Türken*, *13*(3), 101–124. https://doi.org/10.46291/ZfWT/130307

Büyüköztürk, Ş., Kılıç Çakmak, E., Akgün, Ö. E., Karadeniz, Ş. ve Demirel, F. (2020). *Eğitimde bilimsel araştırma yöntemleri* (28. baskı). Ankara: Pegem Akademi.

Dallı, C., & Hamarat, E. (2023). Social studies education, ecological citizenship, and greenwashing [Sosyal bilgiler eğitimi, ekolojik vatandaşlık ve yeşil aklama]. *Journal of Turkish & Islamic World Social Studies*, 10 (36), 112-128.

Değirmenci, Y., & Bayramoğlu, T. (2025). Investigation of the relationship between sustainable consumption behaviors and water literacy levels of pre-service teachers [Öğretmen adaylarının sürdürülebilir tüketim davranışları ile su okuryazarlık düzeyleri arasındaki ilişkinin incelenmesi]. *Buca Faculty of Education Journal*, (64), 1506-1530.

Demirsoy, N. (2024). *Questioning the environmental sensitivity of preschool children through children's books: A study of philosophy with children* [Çocuk kitapları aracılığıyla okul öncesi dönem çocuklarının çevre duyarlılığının sorgulanması: Bir çocuklarla felsefe çalışması] [Master's thesis, Nevşehir Hacı Bektaş Veli University]. Council of Higher Education National Thesis Center.

El Ansari, W., & Stibbe, A. (2009). Public health and the environment: What skills for sustainability literacy – and why? *Sustainability*, *1*(3), 425–440. https://doi.org/10.3390/su1030425

Ercan, A., & Palaz, T. (2025). Investigation of the relationship between ecological citizenship levels and ecological footprints of social studies teachers [Sosyal bilgiler öğretmenlerinin ekolojik vatandaşlık düzeyleri ile ekolojik ayak izleri arasındaki ilişkinin incelenmesi]. *Gazi University Journal of Gazi Educational Faculty*, 45(2), 665-687.

Erginer, E., Demirsoy, N., & Erginer, A. (2024). Philosophy for children (P4C) through children's books: An example of a study on environmental philosophy education. *Journal of Education, Theory and Practical Research*, *10*(1), 18–34. https://doi.org/10.38089/ekuad.2024.161

Erdem, H. H. (2015). Türkiye'de çocuklar için felsefe kitapları. B. Çotuksöken & H. Tepe (Ed.), *Çocuklar için felsefe eğitimi* (2. baskı, ss. 49–61) içinde. Ankara: Türkiye Felsefe Kurumu.

Gregory, M. R., Laverty, M. J., & Oyler, J. (2025). From the margins to the center: The transformative promise of philosophy for children. *Educational Theory*. (Accepted/In press) .https://doi.org/10.1111/edth.70068

Güler, O.,& Şengül, A. A. (2023), Argumentation-Based Learning and P4C Approach: A Seventh-Grade Study on Socio-Scientific Issues. *Kaygı*, 22 (3), 457-481.

Gürler, A., & Gürgen, G. (2025). Geography education in social studies course: Comparison of 2018 and 2024 curricula [Sosyal bilgiler dersinde coğrafya eğitimi: 2018 ve 2024 öğretim programlarının karşılaştırılması]. *Ankara University Journal of Faculty of Educational Sciences*, 58(1), 189-247. https://doi.org/10.30964/auebfd.1519989

Hannam, P., & Echeverria, E. (2009). *Philosophy with teenagers: Nurturing a moral imagination for the 21st century*. Continuum International Publishing Group.

Haynes, J., & Murris, K. (2012). Picturebooks, pedagogy and philosophy. Routledge.

Kizel, A. (2016). Philosophy with Children as an educational platform for self-determined learning. *Cogent Education*, *3*(1), Article 1244026. https://doi.org/10.1080/2331186X.2016.1244026

Kocakır, E., & Alabaş, R. (2025). The place of environmental education in social studies curricula and textbooks in Türkiye [Türkiye'de sosyal bilgiler öğretim programları ve ders kitaplarında çevre eğitimin yeri]. *International Journal of Geography and Geography Education (IGGE)*, 56, 119- 150. https://doi.org/10.32003/igge.1676855

Koyama, D., & Watanabe, T. (2023). Why a dispositional view of ecological literacy is needed. *Teaching in Higher Education*, *28*(5), 1108–1117. https://doi.org/10.1080/13562517.2023.2198637

Lipman, M. (1991). Thinking in education. Cambridge University Press.

Lipman, M. (2003). Thinking in education (2nd ed.). Cambridge University Press.

Lyle, S. (2018). Education for Sustainable Development and Global Citizenship through Philosophical Enquiry: Principles and Practices. *Analytic Teaching and Philosophical Praxis*, *39*(1), 1–11.

Miles, M. B., & Huberman, A. M. (1994). Qualitative data analysis: An expanded sourcebook (2nd ed.). Sage.

Miller, E. (2011). The Giving Tree and environmental philosophy: Listening to deep ecology, feminism, and trees. In P. R. Costello (Ed.), *Philosophy in children's literature* (pp. 251-262). Lexington Books.

Milli Eğitim Bakanlığı [MEB]. (2024a). Türkiye Yüzyılı Maarif Modeli Ortak Metni. Ankara: MEB Yayınları.

Milli Eğitim Bakanlığı [MEB]. (2024b). Sosyal Bilgiler Dersi Öğretim Programı (İlkokul ve Ortaokul 4, 5, 6 ve 7. Sınıflar). Ankara: MEB Yayınları.

Misiaszek, G. W. (2022). What cultures are being reproduced for higher education success?: A comparative education analysis for socio-environmental justice. *International Journal of Educational Research*, *116*, 102078. https://doi.org/10.1016/j.ijer.2022.102078

Muhtaroğlu, B. (2025). *Çocuklar için felsefe yöntemiyle ekolojik düşünme olanağı üzerine bir inceleme*, Yayımlanmamış Yüksek Lisans Tezi, İstanbul Üniversitesi Sosyal Bilimler Üniversitesi. İstanbul.

Muntean, A. & Gînju, E. N. (2017).Ecological Literacy in the Context of Institutionalized Education. Psych-Pedagocical Attributes. In O. Clipa (ed.), Studies and Current Trends in Science of Education (pp. 268-277). Suceava, Romania: LUMEN Proceedings. https://doi.org/10.18662/lumproc.icsed2017.29

O'Leary, Z. (2017). *The essential guide to doing your research project.* SAGE Publications.

Özdemirkol, M. (2025). Opportunities offered by the Türkiye Century Education Model in terms of sustainable environmental education [Sürdürülebilir çevre eğitimi açısından Türkiye yüzyılı maarif modelinin sunduğu fırsatlar]. *Dicle Academy Journal*, 5(2), 267–280. https://doi.org/10.61964/dade.1752966

Papathanasiou, M. (2023). Transformative environmental philosophy in a learning organization for children, teachers, and parents. *Interdisciplinary Research in Counseling, Ethics and Philosophy*, (8), 26–42. https://doi.org/10.59209/ircep.v3i8.53

Patton, M. Q. (2018). *Nitel araştırma ve değerlendirme yöntemleri* (M. Bütün & S. B. Demir, Çev.) (2. baskı). Pegem Akademi.

Saner, S., & Manzo, J. (2022). Respect, resourcefulness, and empathy: Philosophy for children case studies in environmental ethics. *Teaching Ethics*, *22*(1), 117–127. https://doi.org/10.5840/tej2022822114

Satır, ME (2025). Ekolojik Yıkımın Ayak İzleri: Karanlık Sular filminde Antroposen'in Temsili. *Moment Dergi*, 12(1), 80-99. https://doi.org/10.17572/mj2025.1.80-99

Seçgin, F. (2024). Value-based education for sustainable development goals: Where is the social studies course in the process? [Sürdürülebilir kalkınma amaçları için değerlere dayalı eğitim: Sosyal bilgiler dersi sürecin neresinde?]. *Turkish Journal of Scientific Research*, 9(2), 212-228.

Serres, A. (2023). *Gezegenimi kurtarmaya hakkım var* (K. Erdur, Çev.; 2. baskı). Yapı Kredi Yayınları.

Serres, A. (2024). *Gezegenimizi yiyip bitirdiğimizde* (H. Bilgen, Çev.; 2. baskı). Yapı Kredi Yayınları.

Sharp, A. M. (2017). Philosophy for children and the development of ethical inquiry. M. Gregory & M. Laverty (Eds.), In community of inquiry with Ann Margaret Sharp: Childhood, philosophy and education içinde (1. ed, 108–118). Routledge. https://doi.org/10.4324/9781315625393

Stanley, S. (2012). *Why think?: Philosophical play from 3-11*. Continuum International Publishing Group.

Steffen, W., Grinevald, J., Crutzen, P., & McNeill, J. (2011). The Anthropocene: conceptual and historical perspectives. *Philosophical Transactions of the Royal Society A: Mathematical, physical and engineering sciences*, *369*(1938), 842-867. https://doi.org/10.1098/rsta.2010.0327

Suna, M. (2023). *The effect of activities aimed at raising sustainability awareness in 6th grade social studies course on students' awareness of sustainable living* [6. sınıf sosyal bilgiler dersinde sürdürülebilirlik bilinci kazandırmaya yönelik etkinliklerin öğrencilerin sürdürülebilir yaşama yönelik farkındalıklarına etkisi] [Master's thesis, Anadolu University]. Council of Higher Education National Thesis Center.

Sutcliffe, R. (2022). Philosophical teaching-and-learning and the valuing of virtues. *Analytic Teaching and Philosophical Praxis*, *42*(1), 1–15.

Tıkışoğlu, S. (2023). *The effect of activities prepared with design-based learning approach within the scope of environmental education on pre-service teachers' environmental literacy, sustainable development views and epistemic beliefs* [Çevre eğitimi kapsamında tasarım tabanlı öğrenme yaklaşımıyla hazırlanan etkinliklerin öğretmen adaylarının çevre okuryazarlığına, sürdürülebilir kalkınma görüşlerine ve epistemik inançlarına etkisi] [Master's thesis, Kastamonu University]. Council of Higher Education National Thesis Center.

Wartenberg, T. E., Miller, S. K., & Turgeon, W. C. (2023). Thomas E. Wartenberg's Thinking Through Stories: Children, Philosophy, and Picture Books. *Precollege Philosophy and Public Practice*, *5*, 31-43. https://doi.org/10.5840/p4202352

Yıldırım, A. ve Şimşek, H. (2016). *Sosyal Bilimlerde Nitel Araştırma Yöntemleri*. (9. Baskı). Seçkin Yayıncılık.

Yurtbakan, E. ve Batmaz, O. (2024). Primary school 4th grade students' attitudes toward socioscientific issues and question asking: Philosophy for children. *Science Education International, 35*(3), 219–228. https://doi.org/10.33828/sei.v35.i3.5