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Developing Environmental Citizenship in Social Studies Through Social Media-Supported Out-of-School Learning: An Action Research¹

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ABSTRACT

The main purpose of this study is to develop the environmental citizenship competencies of sixth-grade students in social studies courses through the use of out-of-school learning environments and social media tools. The study employed an action research design. The study group consisted of sixth-grade students enrolled in a middle school in Kocaeli, Türkiye. Data were collected through semi-structured interviews, focus group interviews, student journals, and researcher journals. The data were analyzed using content analysis. Based on the findings, it can be concluded that the use of social media tools and out-of-school learning environments in social studies courses supported students' active participation in learning processes and provided them with meaningful educational experiences connected to their daily lives. In particular, the integration of the school's social and physical environment into the course contributed to creating sustainable effects on students' environmental awareness. Overall, when the implemented activities are considered as a whole, the findings suggest that they contributed to the development of students' environmental citizenship competencies, particularly by fostering a shift from individual action to collective engagement.

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Sosyal Bilgiler Dersinde Sosyal Medya Destekli Okul Dışı Öğrenme Yoluyla Çevresel Vatandaşlık Yeterliklerinin Geliştirilmesi: Bir Eylem Araştırması

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ÖZET

Bu çalışmanın temel amacı, okul dışı öğrenme ortamları ve sosyal medya araçları kullanarak sosyal bilgiler derslerinde altıncı sınıf öğrencilerinin çevresel vatandaşlık yeterliklerini geliştirmektir. Çalışmada eylem araştırması yöntemi kullanılmıştır. Çalışma grubu, Kocaeli ilinde bir ortaokulda öğrenim gören altıncı sınıf öğrencilerinden oluşmaktadır. Araştırmanın veri toplama araçlarını yarı yapılandırılmış görüşme, odak grup görüşmesi, öğrenci ve araştırmacı günlükleri oluşturmaktadır. Çalışmada verilerin analizinde içerik analizi tekniği kullanılmıştır. Araştırmada elde edilen verilere dayanarak, sosyal bilgiler derslerinde sosyal medya araçlarını ve okul dışı öğrenme ortamlarını kullanmanın, öğrencilerin aktif öğrenme süreçlerine katılmalarını destekleyebildiği ve onlara günlük yaşamla ilgili anlamlı eğitim deneyimleri sunduğu söylenebilir. Özellikle, okulun sosyal ve fiziksel çevresinin derse entegrasyonu, öğrenciler arasında çevre bilinci açısından sürdürülebilir etkiler oluşturabildiği ifade edilebilir. Sonuç olarak, gerçekleştirilen etkinlikler bir bütün olarak incelendiğinde, özellikle bireysellikten kolektivizme geçiş bağlamında, öğrencilerin çevre bilinci yeterliklerinin geliştirilmesine katkıda bulunduğu söylenebilir.

Anahtar Kelimeler: Sosyal Bilgiler, çevresel vatandaşlık, eylem araştırması, okul dışı öğrenme ortamları.

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Introduction

Throughout history, human-environment interaction has been one of the fundamental elements that has persisted on Earth (McNeill, 2003). In this context, at times the impact of environmental factors on human life has been more dominant and decisive, while at other times environmental conditions and factors have undergone significant transformations as a result of certain actions taken or not taken by humans. Developments within the framework of industrialisation, particularly after the Industrial Revolution, changes in the military sphere, notably nuclear weapons, and the impact of 21st-century information and communication technologies have led to a significant increase in the extent of human impact on the environment. During this period, also known as the Anthropocene epoch (Lewis & Maslin, 2015; Steffen et al., 2007), human impacts on the environment have mostly been negative. As a result of the negative effects on sustainable environmental factors, various problems have begun to emerge across a wide range of areas, from water resources to vegetation cover, or existing problems have grown, become more visible, and begun to threaten the Earth and life on it in many ways. This situation can be described within the conceptual framework referred to in the relevant literature as the planetary boundaries approach, whereby certain thresholds that should not be crossed to sustain life on Earth are gradually being exceeded (Rockström et al., 2009). This situation has also led to the concept of environmental problems being discussed and studied much more extensively in the literature. In research aimed at solving environmental problems, while the subject is approached and examined from different angles, it is stated that the fundamental transformation must occur in human attitudes and behaviours (Clayton et al., 2015; Gifford, 2011; Steg & Vlek, 2009). In scenarios where human attitudes and behaviours, which have the greatest negative impact on environmental factors, do not change permanently, it is not possible to offer sustainable solutions to environmental problems. Discussions on transforming individuals' attitudes and behaviours towards environmental factors have led to the emergence of a new concept in the literature: environmental citizenship.

Environmental citizenship is interpreted, categorised and defined in various ways in the relevant literature (Sauvé, 2005). However, the concept generally refers to an individual consciously interacting with environmental components in both their personal and public life. The concept of sustainability is particularly important in terms of environmental citizenship; it addresses the qualities of active and participatory citizenship in a way that enables sustainability (Hadjichambis & Reis, 2020). From this perspective, it can be argued that environmental citizenship aligns more closely with republican conceptions of citizenship, which emphasises responsibilities more than rights in the rights/responsibilities equation expressed in classical citizenship theories (Dobson, 2007). Of course, environmental citizenship also includes and targets various rights. However, considering the qualities it aims to develop in individuals, it can be stated that the theme of responsibility carries more weight than the theme of rights.

While there are many tools that can be used in individual and community-based change and transformation efforts, education is one of the most effective elements in this regard. A similar situation can be observed for objectives aimed at developing environmental citizenship qualities in individuals. Although it can be argued that various environmental citizenship qualities can be developed among individuals and society through various social responsibility projects, conferences, meetings and similar actions, education is the most effective tool for ensuring that this change is lasting, effective and reaches broad segments of the population (ENEC, 2019; Huckle & Wals, 2015; UNESCO, 2020).

The Social Studies course, as an educational programme with the primary aim of citizenship education, is included in the curricula of many countries (Ali & Karim, 2022; Awopetu, 2001; Miles, 2021; Sim & Print, 2005; Sisay & Teferi, 2025; Wood et al., 2013). Within the scope of this course, students are taught the knowledge, skills, and values necessary to become active, democratic, and participatory citizens. Today, environmental citizenship competencies are at the forefront of the civic qualities that individuals are expected to acquire. Therefore, the context of environmental citizenship constitutes one of the most important components of active citizenship education, which is the objective of the Social Studies course.

Educational planning and activities aimed at developing environmental citizenship qualities in students within the scope of social studies lessons are closely related to the characteristics of the target qualities. A review of the relevant literature reveals that environmental citizenship qualities are examined across a broad spectrum and mostly in a layered manner. It does not seem feasible to impart all the sub-dimensions of such a broad and multi-component skill to students within the scope of social studies classes in terms of real educational scenarios. At the same time, whether environmental citizenship qualities translate into lasting behavioural change remains an important empirical question. For example, in their study examining the factors that guide individuals' behavioural patterns when interacting with their environment, Kollmuss and Agyeman (2002) state that there are many internal and external factors and that individuals are influenced by these factors to varying degrees when making decisions about environmental issues. At this point, it would be appropriate to select achievable goals from the environmental citizenship qualities within the social studies course that are appropriate to the readiness levels of the students. The social studies curricula in many countries similarly select and simplify these competencies, providing teachers with clearer, more concrete and achievable goals related to environmental citizenship.

Educational activities designed and implemented by teachers play a critical role in achieving the objectives of developing environmental citizenship qualities to students as outlined in teaching programmes. When examining the theoretical framework of the concept of environmental citizenship, it can be stated that the qualities associated with this skill can mostly be acquired through educational activities that involve hands-on learning. In particular, the ability of students to relate educational activities to daily life is crucial for changing attitudes and behaviours, which play a critical role in environmental citizenship qualities. At this point, while different methods and techniques that can be used in social studies lessons may be considered, out-of-school learning environments come to the fore. Out-of-school learning environments, which can be used as an important tool for taking educational activities outside the four walls of the school and utilising different spaces to help students achieve lesson objectives, can also be a highly functional tool for environmental citizenship education (Ballantyne & Packer, 2009). In particular, students' experiences outside of school can help them gain important and meaningful insights, especially in terms of transitioning from theory to practice and from concept to application. As stated in the UNESCO Sustainable Development Goals Report (2017), schools should position themselves as areas of learning and experience related to sustainable development. Extracurricular learning environments have the potential to provide suitable educational conditions for this positioning. On the other hand, extracurricular learning environments can also provide students with the opportunity to interact more intensively with and connect to the natural environment. As Price et al. (2022) point out, gains in knowledge alone regarding environmental awareness may not be sufficient to bring about lasting changes in attitudes and behaviour. The most effective way to encourage this is to increase individuals' interaction with the natural environment and help them see themselves as part of the ecosystem. Another potential advantage of continuing environmental citizenship education in out-of-school

learning environments is psychological. Harvey et al. (2020) conducted research showing that students who participated in biodiversity-related activities in the school garden achieved a much better psychological state.

One of the most important dimensions of environmental citizenship is active participation. In this context, it is not sufficient for the individual/student to possess environmental citizenship qualities alone. In terms of creating public impact, they must also reach out to social stakeholders beyond themselves and promote environmentally responsible attitudes and practices among wider audiences. Just as community influence, not just individual influence, is decisive in the emergence of environmental problems, so too must community life change and transform in order to achieve the gains targeted through the development of environmental citizenship qualities. The use of media tools can contribute to a more effective and participatory transformation process by extending the change, transformation, and awareness development in the context of environmental citizenship education beyond the boundaries of the school and reaching individuals of different ages, genders, and social statuses. Given the widespread and frequent use of social media today (Gorman et al., 2025; Prasetya et al., 2024), the potential role of media tools in the context of environmental citizenship education can be better understood.

A review of the relevant literature reveals that a substantial body of research has focused on environmental citizenship (Bell, 2005; Fadaee, 2017; Fenney Salkeld, 2019; Fonseca & Castro, 2022; Vihersalo, 2017; Wong & Sharp, 2009) and environmental citizenship education (Chan, 2023; Green et al., 2016; Iversen & Jónsdóttir, 2019; Kowasch et al., 2022; Schild, 2016; Tarrant & Lyons, 2012). It can also be stated that there are studies related to environmental citizenship in the context of social studies education (Adara, 1996; Chan, 2025; Hardy, 1973; Hepburn, 1974; Imeson & Skamp, 1995; Ogunyemi & Ifegbesan, 2011). A significant portion of the existing studies in the literature describe the situation regarding environmental citizenship in the context of social studies education or present opinion-based data. However, practice-based pedagogical data on meaningfully and permanently developing environmental citizenship qualities in students at middle school level in social studies teaching is still limited. In this study, educational activities were planned and implemented with the aim of making the various sub-dimensions of environmental citizenship qualities more visible and developing them in students in a lasting manner through the use of out-of-school learning environments and media tools in social studies lessons. This was done with the aim of obtaining theoretical and practical outputs for environmental citizenship education. In this context, the study primarily sought to answer the following question: How can students' environmental citizenship competencies be developed in social studies courses through the use of social media-supported out-of-school learning environments?

Methodology

Research Design

This study employed a qualitative research method. Obtaining in-depth and multifaceted data relevant to the research questions is among the most fundamental characteristics and objectives of qualitative research (Creswell, 2013; Patton, 2002). There are different designs that can be used in this context (Creswell et al., 2007). In this study, an action research design was adopted. Action research is a qualitative research design frequently used in educational studies, which can also be referred to as teacher research in the literature (Yang & Han, 2025).

In action research based on this model, action steps are implemented to develop the existing qualities of the target group or to solve an existing problem (Kemmis & McTaggart, 2005; Somekh & Zeichner, 2009). The dimension that transforms action research into teacher research emerges at this point; the process of developing students' qualities can also be experienced as a process through which teachers critically examine and improve their own practice.

Study Group

The study group consisted of a class of sixth-grade students at a secondary school in Kocaeli province. The researcher was also the social studies and guidance teacher of the application class. Of the participating students, 10 were female and 11 were male. Pseudonyms were used instead of the students' real names to protect their identities. During the research process, great care was taken to ensure that certain potential drawbacks discussed in the relevant literature (Mercer, 2007) did not affect the process, and the implementation and data-analysis processes were conducted meticulously.

This research was carried out within the framework of the ethics committee approval numbered 289586 of the Marmara University Institute of Educational Sciences. Prior to the research, participating students and their parents were informed about the study, and voluntary consent forms were collected. These voluntary consent forms were collected in writing and signed by the students' parents.

Data Collection Tools

Semi-structured interview

Semi-structured interviews are among the primary data collection tools used in the research. A significant portion of the findings presented in the study were obtained from data collected through interviews. In preparing the interview questions, a conceptual framework was first established by conducting a literature review within the context of the research questions. Based on the conceptual framework, draft interview questions were prepared and submitted to experts for their opinion. The final form of the questions was determined according to the suggestions received. One key advantage of semi-structured interviews is that interviewers can ask follow-up questions when necessary (Qu & Dumay, 2011). During the interviews with students, additional questions were therefore asked when they remained relevant to the research questions.

Researcher and student diaries

Diaries are one of the important data collection tools used in the research. Both researchers and students used these diaries to document the activities carried out during the process and the contributions these activities made to their development. The researcher communicated to the students, via a guideline, which points they should focus on when keeping their diaries. Thus, the necessary data was obtained without deviating from the research context.

Data Analysis

Within the scope of the study, the semi-structured interviews and focus group interviews were analyzed using conventional content analysis. First, all interviews were transcribed verbatim and read repeatedly to gain a holistic understanding of the data in relation to the research questions. The transcripts were then segmented into meaningful units, which were coded.

Similar codes were subsequently grouped into categories and presented in the findings section. Researcher and student journals were analyzed using descriptive analysis. The journal entries were examined in relation to the research questions, and where appropriate, direct quotations were incorporated into the findings to support the interpretations. To enhance the trustworthiness of the analysis, the coding conducted by the first researcher was independently reviewed by the second researcher. Any discrepancies were discussed until consensus was reached, and the final codes and categories were established accordingly.

Research Process

This research aimed to develop environmental citizenship skills among sixth-grade middle school students within the scope of social studies lessons. Action research was chosen from among qualitative research designs. As required by the design, the participants' needs regarding the skill to be developed were first identified. In line with the objective, participants were first divided into groups of five. Focus group discussions were conducted with the participants assigned to these groups. An analysis based on a case study was also conducted to reinforce the needs analysis. Action plans were prepared based on the data obtained from the participants.

One of the problems encountered in the final stage of the data collection process was that participants found it difficult to express themselves. Semi-structured interviews were conducted at the end of the activities to evaluate the process. However, many of the students participating in the interviews found it difficult to express themselves in response to the questions and preferred to give short answers. The researcher attempted to advance the data collection process with follow-up questions. Details regarding the action steps implemented in the study are shown in Table 1.

Table 1. Steps in Implementing Action Research

Action Step	Activity Name	Activities
Action Step 1	Problems in My Environment	- Students are divided into groups of 4-5. - Each group is asked to create a social media account (Instagram or Twitter) representing their group and whose content is related to the topic of "environment." - After the groups are formed, under the guidance of the teacher, exploratory tours are organized to the streams, parks, and green areas in the vicinity of the school during class hours or during planned free time.
		The areas to be explored are determined as the school building, the schoolyard, two nearby stream beds, a park, and a green area adjacent to a residential area. - The stream bed, park, and green areas around the school are visited. - During the exploratory tours, students are asked to note down any environmental problems they observe and to photograph them using their smart devices.
		-Students create posters using Canva software, utilizing visuals from the activities within the first action plan. - The posters focused on two main themes: Environmental protection, and recycling and energy conservation. -In the second stage, posters and slogans are produced based on observations of sustainable living at school. -The posters are brought to class, and the groups discuss them for one lesson hour.

Action Step 2	Conscious Schooling	-During the second lesson hour, students attach their posters to various trash cans, electrical outlets, and around the water fountains in the school. -In the remaining time, each group conducts an awareness campaign about environmental issues and sustainable living for other students in the school, based on their experiences related to their poster. -After the presentations during breaks, the groups give presentations to their classmates at designated times throughout the process.
		After raising awareness among their schoolmates through their work, students turn to the shopkeepers and businesses in their neighborhood. Posters and brochures are prepared using photographs they have obtained digitally. Each group visits at least 3 pre-selected shops. They convey the problems they have identified and the existing issues in their area.
Action Step 3	Conscious Shopkeeper	Ideas are exchanged with the shopkeepers regarding both awareness-raising efforts and solutions to these problems. Solutions are evaluated based on the data obtained. The groups evaluated the suggestions and developed feasible ideas for implementation.

Findings

Findings of the Needs Analysis Regarding Participants' Environmental Citizenship Competencies

Semi-structured interviews were conducted as part of the research to determine the current status and needs of participating students regarding their environmental citizenship competencies. Based on these interviews, four key dimensions emerged in the context of environmental citizenship: Environmental Pollution, Formal Education, Energy Conservation, and Recycling.

Environmental Pollution

The primary objective of the initial stage of the interviews was to determine whether the participants' environments were clean and, if not, to focus on the possible causes of pollution. Indeed, following the interviews, all participants stated that their environments were not sufficiently clean. For example, some participants described the situation as follows:

Cemile said, *'Our surroundings aren't clean enough. Because people throw rubbish everywhere. Even if there's a bin nearby, they'll still throw cigarette butts on the ground. I've seen it myself.'*

In general, when the participants' responses are examined, it can be stated that they are aware that their environment is polluted. The participants' awareness of the situation may cause them to question the reasons for this problem within themselves. In fact, when the root causes of this pollution are questioned, two situations generally emerge. Firstly, the fact that industrial activities are developed in the city where the participants live indicates that there are facilities for this purpose in their immediate surroundings. Participants' observations also indicate that

this situation contributes to the pollution in their surroundings. For example, the participant named Mehmet states, *'Environmental pollution occurs because factories discharge their waste into the water,'* pointing to the validity of the first situation. There are also participants who express similar views to Mehmet. These participants state, *"For example, with industrialisation, domestic waste and factory waste increased, and since there was no proper waste disposal site, the environment became polluted. Now, everyone's rubbish that wasn't thrown away melted and had a negative impact on nature, and then the factories created air pollution with their smoke..."* In fact, they have stated that the industrial institutions, which are the main commercial activity in their region, are responsible for the pollution of the environment.

The second reason for environmental pollution, according to the participants, is the people themselves. The students believe that the main causes of environmental pollution are people not being sufficiently sensitive to their surroundings, littering, and those responsible not fulfilling their duties.

As can be seen from the participants' statements, the students pointed to human factors as the fundamental cause of the pollution in their environment. The participants are actually aware of environmental pollution and understand its causes. They described the harmful consequences of people's environmentally irresponsible behaviour. Some participants even stated that people are not sufficiently aware and therefore easily pollute their environment without realising the consequences. However, despite being aware of all these situations, participants have also observed that pollution in their environment continues.

It has been determined through participants' responses that they are aware of the pollution in their surroundings and understand why this pollution occurs. Participants were then asked whether they took action against the existing situation, and various responses were received. Even though many participants took action, what they did was not sufficient. This is because the following question did not receive an adequate response: *'Our environment is polluted, and we are aware of this. Why is our environment still polluted despite our efforts to raise awareness?'* This question indicates that the warnings or efforts made by the participants so far have been insufficient. Participants used the following statements regarding this situation:

Firat: *'I warned most people, told them not to litter, gave them information about the future, about drought, but most people didn't care.'*

Fatma said, *'I warned one man, saying, Could you please put your rubbish in the bin? He replied, Look at your age, are you a dustman? Why are you warning me about throwing rubbish away?'*

The participants' responses are taken into account, it is evident that people still disregard this situation despite the necessary warnings being issued. This indicates that people are not sufficiently aware of the situation. Although the participants tried to fulfil their responsibilities, the desired impact was not achieved. The fact that people do not heed the warnings issued and that individuals lack the necessary awareness can be cited as examples of this situation. The main conclusion drawn from this is that participants need to be involved in the process more effectively and implement effective solutions.

When the data from the needs analysis conducted on environmental pollution is examined, three different main needs emerge:

- Participants are aware of existing environmental pollution and its causes but have not taken effective action on this issue.
 - Participants have warned individuals about environmental pollution, but mere warnings have not led to a change in the behaviour of individuals in their environment.
 - Participants need to engage in effective awareness-raising activities beyond mere warnings.
- When other individuals are indifferent and unconcerned about existing problems in the environment, participants must focus on the causes of the problem and actively engage in the process to seek solutions.

Formal Education

The fundamental question to be examined under this heading is as follows: Various types of education related to environmental awareness are provided in schools, starting from the primary education level. However, are these educational programmes sufficient? Do participants find the education they receive adequate? Do these educational programmes yield results? Participants responded to questions on this topic as follows:

Orhan: *'I don't think the education is sufficient because many people don't comply. It would be better if, for example, there were penalties for littering, like there are abroad.'*

Firat: *'I don't think it's entirely sufficient, but the general information was good.'*

Melis said, *"Well, there's nothing done at school, but they do warn us."*

As can be understood from the participants' statements, the environmental education they receive at school is generally inadequate and is described as being at a level that can be forgotten over time. In other words, it can be said that the participants are in a position where information is conveyed to them during the process, and since these trainings are not repeated over time, their retention is minimal.

One of the key findings in this section is as follows: The education provided in schools can respond to participants' immediate needs. However, there may be shortcomings in terms of making a sustainable contribution to their lives. This leads participants and educators to seek different approaches. In terms of environmental awareness, conducting training programmes in which participants play an active role, rather than programmes consisting solely of discourse, will enable more effective environmental citizenship education in the context of sustainable development.

Energy Conservation

The theme of energy conservation has been one of the fundamental dimensions presented in the context of participants' environmental citizenship competencies. Under this theme, data has been presented on the level of awareness children have regarding current energy consumption.

It was observed that participants could not define energy saving in general terms, but they were significantly aware of its meaning. This can be seen in some of the participant statements shared below as examples.

Dilek: *'For example, recycling things made with solar energy. Wind energy. We can use our energy consistently by using them.'*

Orhan: *'Energy saving is like saving energy for no reason, so we won't leave any lights on at home, we'll turn off unnecessary things...'*

Hakan said, *'I know this. What I mean by "I know" is this: we shouldn't use too much energy. For example, when I go somewhere, like from my room to the living room, I shouldn't leave the light on in my room. I should save energy.'*

As can be seen, the participants interpreted the concept of energy saving according to their own understanding and expressed interpretations that would lead them to the correct answer rather than mere knowledge. Their own expressions such as not wasting electricity, not using electricity unnecessarily, using energy efficiently, being harmless, and being clean can be given as examples of this situation. The fact that participants did not know the concept in a definitional sense but were able to arrive at the correct interpretation did not indicate a conceptual deficiency. This is because participants ultimately know what the requirements of the concept are and can give examples by interpreting it according to their own understanding. Therefore, there was no need for concept teaching in the context of energy saving.

An analysis was also conducted based on the experiences and suggestions of participants who were considered to have sufficient basic semantic competence regarding energy saving. The findings obtained in this context can be explained as follows:

Cemile: *'Sometimes they leave the water running in the kitchen, so I turn it off. At home, for example, when my parents are working, they always leave the toilet light on, and when I see it, I turn it off...'*

Melis: *'If we turn on the taps and they're running for no reason, we can turn them off.'*

Fatma: *'At home, I try to turn off every light I see.'*

Hakan said, *'What I mean is, schools don't care like homes do. They don't care whether the lights are on or off, so electricity savings go to waste here. I think schools should do the same things we do at home.'*

We can understand from the participants' responses that they generally fulfilled their duties. One participant even went a step further and clearly stated what needed to be done, providing examples. In other words, the participants were able to act with a sense of responsibility. Thus, they contributed to energy saving through their own efforts. However, a significant shortcoming was that they had to constantly intervene in cases of energy waste around them. In other words, reactive interventions can provide immediate solutions. However, it can be said that they are quite inadequate when it comes to preventive interventions. In other words, turning off lights when they are on and closing taps when they are running are things that help save energy. However, the fact that the action has continued until that moment paves the way for energy waste. For this reason, participants need to take precautions as environmental citizens to prevent this situation. Participants are failing to engage in these behaviours.

Recycling

Under the theme of recycling, similar findings were reached with the data under the heading of energy saving. In other words, even though participants found it difficult to define the concepts, they explained these concepts semantically with their own interpretations and examples. For example, the participant with the code name Orhan stated, *"For instance, when we throw batteries into nature, they cause a lot of damage, but when we put them in the recycling bin, I saw that they use them to refill the batteries. For example, if a glass jar breaks, we put it in the glass recycling bin, and they can be processed and used to manufacture new glass products."* Here, he essentially made his own interpretation based on the examples of glass and batteries rather than the definition of recycling. There are other participants who take a similar approach to Orhan. Examples include:

Emine said, *'I think the recycling bins in schools are useful because, for example, we put our masks in the recycling bin, we put paper in the recycling bin, and after a while, they come back to us.'*

Fatma: *'I think recycling is very useful because if we throw rubbish into the same bins, for example, if we throw a piece of paper and a different object into the same bin, it cannot be recycled, but if we can throw them into recycling bins, for example, the paper we have used and no longer need can be reused by being recycled, and trees will not be cut down.'*

Hakan said, *'...recycling benefits us in that, for example, when we throw away this waste phone, it can be used as material for another phone or other inventions through recycling...'*

As can be understood from the participants' statements, they explained the concept not in the same way as it is written in the dictionary, but through their own words and examples. This demonstrates that they have a good grasp of the concept and can explain it in different ways if necessary.

The study also found evidence regarding the adequacy of the recycling education received by the participants and the practices implemented in schools. In this context, some examples from the participants' statements are provided below.

Dilek: *'The recycling facilities at our school are not sufficient because there is only one recycling bin in the school. They could increase the number of bins and put up posters on the walls about recycling.'*

Selin: *'I don't think it's sufficient at all. For example, we could do something about it. We need to increase the number of recycling bins significantly.'*

Generally, the lack of sufficient recycling bins to meet the needs of participants at school is the most significant problem we face. In addition, the limited education provided in schools, where educational activities are not seen as a process but only as lessons aimed at imparting knowledge, can be cited as another important shortcoming. The most fundamental characteristic of the participants is that they are aware of the necessity of having recycling elements in their environment.

Finally, based on the responses received from participants, it was determined that they had adopted positive recycling practices themselves. That is, they had already fulfilled their responsibility to collect and transport materials that needed to be recycled. However, they had also spread this behaviour to the people around them. For example:

Cemile said, *'I did something for my dad, not my friend. My dad had finished a bunch of test books and was going to throw them in the regular rubbish bin. I said to him, "Dad, it would be better if you put them in the paper recycling bin.'*

Dilek said, *"I warn my friends. They cut up the paper and throw the scraps into the recycling bins around the school, and I warn them at home too."*

Firat said, *'For example, a friend of mine wasn't turning off the tap, so I told him to turn it off.'*

As can be understood from the participants' statements, they have shown sensitivity to recycling themselves and have also made the necessary warnings and encouragements to those around them. The participants have significantly fulfilled the requirements of being environmentally conscious citizens in terms of recycling. It has been determined that they separate items in their environment that can be recycled and send them for recycling. In addition to all this, it has been seen that they contribute to their country and nature by encouraging and raising awareness among people around them.

When the needs analysis table regarding the concept of recycling is examined, the following needs and competencies are identified.

When expressing the concept of recycling, participants referred to the method they used to explain energy saving. In other words, while they could not provide a dictionary definition of the concept, they were able to explain it comfortably by giving examples using their own words. No deficiencies were identified in the meaning expressed by the concept of 'recycling'.

Various recycling promotion activities carried out at school and waste bins for recycling are lacking. Participants are aware of the current situation.

Participants are aware of the need to separate items for recycling and place them in the appropriate bins. They also alert people around them. When all the findings are taken together, it can be said that the information learned is being applied.

The Effect of Activities in Out-of-School Learning Environments Supported by Social Media Tools on Students' Environmental Citizenship Competencies

This section of the study presents findings on the effects of social studies activities conducted in out-of-school learning environments aimed at developing participants' environmental citizenship competencies. In this context, participants' views, self-awareness readings, and changes and transformations in their daily lives were used as the primary data set.

Change and Transformation in Daily Life

The most significant reflection areas of the activities carried out in the research are the daily lives of the students. A significant portion of the participants stated that they experienced changes in different dimensions in their daily lives after the study; reflections of environmental citizenship in their daily life practices became more visible and effective. Participant Fatma expressed the transformation she experienced in this regard with the following words: *'I wasn't so sensitive to the environment before; I didn't think much about the rubbish around me, but thanks to these things, I now evaluate every piece of rubbish around me and throw it in the bin.'* Emine, who made similar statements to Fatma, said,

"Actually, I wasn't very sensitive to the environment before. Then, in recent times, I have started to become more sensitive."

Some participants stated that the change in themselves as a result of the activities was focused on alerting other people. For example:

Nuri said, *"For example, I used to see people throwing things on the ground and I couldn't say anything. Then I started to warn them."*

Mehmet said, *'Because I am more aware, I have become a bit more involved in recycling.'*

Before the activities, the participants stated that they were inadequate in terms of recycling, environmental pollution and energy saving. After the activities, they have moved forward positively in these three areas.

Sinan said, *"Before I got involved in this work, I would see rubbish around me. Sometimes I would pick it up if it suited me, sometimes I wouldn't, I would just walk past it. But now I think about the animals and nature, and I try to pick up all the rubbish."*

Cemile said, *"It changed. By doing this, both my self-confidence changed and the way I warned others changed."*

It can be said that participants intervened in events around them after the activities. Some participants stated that the activities directly brought about changes in themselves. For example: Naz said, *"For example, I used to leave my phone on a lot, and then the electricity would run out, so I was spending more, or I would go to bed leaving the light on, or sometimes I would even throw rubbish on the floor, to be honest. Now that I've learned these things, I'm making up for them."*

Ahmet said, *"I used to throw rubbish on the floor sometimes. I don't do that anymore. I put it in the bin. If the bin is far away, I hold it in my hand and throw it away when I get there."*

Awareness Development

Another dimension of the gains expressed by participants as a result of the activities carried out within the scope of the programme is awareness development. In this context, participating students stated that their environmental awareness had developed as a result of the activities carried out throughout the process and gave various concrete examples of this change. As a reflection of their own awareness development, they also succeeded in conveying various messages on this subject to their immediate social environment, thereby contributing to awareness development in a relatively wider circle. Sharing his thoughts on his experiences and gains during the process, Nuri said: *"So polluting the world is actually a very bad thing, raising people's awareness is a very good thing, it's a very good feeling, I understood that."* Sinan also expressed similar thoughts: *"The most critical achievement was that when I looked at our school before this project, everyone was unaware, but we visited the classes and explained it, and then they became aware. This made me happy, for example, that my friends were doing well. For me, this was the most critical part of the project."*

As can be understood from the participants' statements, the most fundamental gains have been characterised as awareness or raising awareness. The activities conducted have been based on developing the competence to be an environmentally conscious citizen. It has been observed that both the participants' awareness and their ability to raise awareness among those around

them are part of this skill acquisition. It is also understood from the participants' statements that they were actively involved in this process.

Participants stated that the activities directly encouraged them to contribute to the environment. Some students described their contribution less directly but conveyed similar ideas. For example, the participant with the code name Naz stated, *"While distributing the brochures, we first explained what kind of impact they would have, and then, well, these were good, they became more aware, and I think that if we continue like this, we can reduce environmental pollution even more."* With this statement, she expressed that as a result of the work done, pollution in the environment had decreased and that he had thus contributed to his environment. Another participant, code-named Hasan, expressed similar sentiments to his friends, stating, *"We are doing this so that they can see it and not ignore the rubbish they see."* He expressed that, thanks to these activities, he could contribute to his environment.

Technology Integration

The activities carried out during the research process were primarily structured around two dimensions: technology use (Canva and social media tools) and out-of-school learning environments. The first two headings of the findings section mainly cover the reflections of out-of-school learning environment-based activities on students. The reflections of technology-supported applications, which is the second main dimension, are addressed under this heading. Throughout the process, participants developed various products such as technology-supported posters and brochures and used social media tools to reach a wider audience with these products. Participants' opinions regarding this experience and its reflections on students were generally positive. Naz, one of the participating students, expressed her experience on this subject with the following words: *"Now, I think people can become more aware with the photos we share, or they can say, 'Oh, they are doing very nice things, we can do things like this too,' and similar opinions may arise in other schools."* Another student, Fatma, similarly explained: *"I think sharing is a very good thing because people spend a lot of time on social media. When they come across this, they can become more environmentally conscious."* Some participants also pointed out that social media posts can be used as a tool for more effective and widespread acquisition of environmental citizenship skills. Two of these participants' statements are given as examples below: Mehmet: *"For example, those who can't see what we're doing can see it there; it might appear in front of them. By sharing photos, we can also influence others."* Nuri: *"People see this and become more conscious; they don't throw trash around, they think about what might happen when they throw trash on the ground."*

An analysis of the participants' statements reveals that sharing their work on social media accounts had a positive impact on them. It shows that they can reach and raise awareness among people through media. Furthermore, it can be stated that they can reach a wider audience, not just their immediate circle, through media. The element of influence is also

crucial in social media sharing. Because participants demonstrated exemplary behavior by sharing their work, the dissemination of this behavior through media will contribute to influencing and raising awareness among those who see the posts. These two fundamental findings highlight that media tools serve as a helpful tool for participants to express their opinions on issues that concern them. Thus, in addition to environmental citizenship competencies, the requirements of being an active citizen have also been fulfilled.

Overall, the findings from the interviews revealed that participants were aware that using social media would contribute to the research and provide an opportunity to reach a wider audience. However, some participants stated that using a single media tool was insufficient or that different media tools should be used. For example:

Fatma said, *"I don't think it's enough; not everyone has a phone or Instagram. Other things can be done. We can put up more brochures and distribute them everywhere."*

Selin said, *"Actually, we could make more posters. I was thinking, for example, we could put posters on trees and stick them in more crowded places."*

For example, three participants stated that more physical actions should be taken in addition to social media accounts. This would allow them to reach more people who do not have social media accounts. This situation also revealed the necessity of conducting the study not only through social media accounts but also through face-to-face interaction. In other words, it can be stated that participants should share their work both on social media platforms and, if necessary, through face-to-face interaction.

These participants stated that by using different media tools, the research could reach more people through various channels. Thus, audiences across different media platforms could be reached, and the studies would be disseminated to a wider audience. During the research, the participants' ability to use technological tools was utilized in the activities. A program easily accessible via the internet or application was selected. Using the chosen program, participants created the necessary documents, posters, and brochures. This provided a comfortable working environment for the participants. Students were asked how the program had supported their learning and product development. Participants did not experience any difficulties using the program. They were successful in the learning and application phases. Some students explained this situation with the following statements:

Dilek, *"No, I think it's quite easy. Because you can easily learn what to do."*

Naz, *"Actually, it was very easy. I mean, you just think about it and write it down, or you put a photo, photos you took yourself, it was very easy."*

Despite being between 11-12 years old, the participants appear to be using the newly learned program very comfortably. They seem to have had no difficulty, especially in creating brochures and posters necessary for the research. The fact that the participants have developed the skills to use such programs from a young age shows that digital programs can be used effectively in teaching activities, and that their use will be efficient and simple. Participants stated that the program they used provided them with various skills. For example:

Fatma, *"Thanks to this program, we prepare our brochures faster and better."*

Emine said, *"The program has contributed to me in many ways, for example, I've become more skilled at designing brochures."*

Necip said, "Well, it's not just for that, maybe it's for doing other things too. We've learned the application, and we can do what we want in two or three minutes."

Hasan said, *"for example, you can add more things to the layout of posters and use any program... I shouldn't say program, but you can add effects."*

Sinan said, *"It made my job much easier. As I said, adding pictures was more difficult, but I didn't do anything professional, but it still contributed to the picture."*

As can be understood from the participants' statements, the program can be said to have two main contributions to the participants. Firstly, they were able to create the products they were going to prepare quickly and easily. They were able to prepare products in a short time that they would have spent a long time making at home with their own efforts, thanks to the program. The participants' familiarity with using the program contributed to their ability to quickly create brochures and posters. The second benefit is that the children learned to use a new program while fulfilling the requirements of being an "environmentally conscious citizen." In similar projects they will undertake in the future, they will be able to easily use the program and contribute to their work.

Result and Discussion

This research aimed to reveal the effects of using social media-supported out-of-school learning environments in social studies lessons on the development of students' environmental citizenship competencies. As part of the research, data was first collected to determine the current situation and needs of the participating students regarding their environmental citizenship competencies. Based on the findings, it was observed that although students could not provide technical definitions of environmental citizenship and some of its sub-contexts, they could express some statements that explained the concept in terms of semantic content. Considering the developmental characteristics and ages of the students, it is not expected that they will possess very advanced technical knowledge, but their competencies in the basic knowledge dimension can be improved. A similar finding was reported by Çermik and Akçay (2020), who examined middle school students' knowledge of environmental citizenship. Based on their findings, the authors suggested that relevant environmental citizenship content should be incorporated into social studies materials to support the development of students' environmental citizenship competencies. Similarly, another study conducted in Malaysia to determine the environmental citizenship competencies of primary and secondary school students (Meerah et al., 2010) found that the students' competencies were at a low-to-medium level, and suggested areas for improvement in formal education courses. At the time this study was conducted, the 2018 Social Studies Curriculum was in effect in Türkiye. Therefore, the findings and conclusions of the present study should be interpreted in relation to the objectives, content, and pedagogical framework of the 2018 curriculum wherever they are associated with the social studies curriculum. However, recent studies examining the revised Social Studies Curriculum (Akkuş et al., 2026; Kerçin, 2025) have also suggested that the 2024 curriculum includes aspects that require further development with regard to environmental citizenship competencies.

The participants' level of readiness regarding the semantic content of the concepts may differ in other needs analysis categories. The findings of the study show that students need educational gains enriched with contextual experiences related to their daily lives, rather than just information, to develop their environmental citizenship qualities. Boeve-de Pauw and Van Petegem (2018) reached a similar conclusion in their research examining the effects of the eco-school project on environmental citizenship; they emphasized that environmental education should include not only theoretical knowledge but also practical applications and real-life examples. In addition, one of the most important needs identified by the participants is the need for social impact. While many students can individually reflect environmental citizenship practices in their daily lives, they have difficulty in influencing and developing this attitude and behavior in the people around them. Similarly, van Harskamp et al. (2024) found that while students demonstrate some practices related to environmental citizenship in their daily lives, it is stated that they have difficulty transforming these behaviors into a collective form. Wai Ying et al. (2024), based on the findings of their research on developing environmental awareness among middle school students, emphasize that students should be more prominent figures in influencing and transforming society in terms of environmental citizenship qualities. Therefore, it can be stated that the data in the relevant literature and the dimensions that emerged in the needs analysis, which is the first step of the research, show similarities; there is a need for educational activities that go beyond developing students' individual attitudes and behaviors regarding environmental citizenship. The second dimension of this research consists of the reflections of the action steps designed and implemented based on this identified need.

The second dimension of the research encompasses the action steps taken to improve participants' environmental citizenship skills. Based on the findings from these action steps, it can be stated that out-of-school learning environments supported by social media tools have a positive impact on the development of students' environmental citizenship skills. In particular, it was concluded that integrating out-of-school learning environments into environmental citizenship education significantly helps students transfer the targeted competencies to their everyday lives. Educational experiences that go beyond knowledge and offer opportunities for experience can lead to meaningful effects on students' daily lives.

Another important conclusion that can be expressed based on the findings of the research is that out-of-school learning environments and social media tools can be used as important tools for developing the active participation dimension of environmental citizenship. Within the scope of the research, students interacted with different individuals and groups in both physical and virtual environments; they took some small steps towards moving from individual responsibility toward collective participation. In this context, students conducted environmental awareness studies with students from different classes within the school as peer learning, while also carrying out various studies with the social and economic stakeholders of the school. Students' interaction with their social environment and the resulting increase in their social participation experiences can lead to significant outcomes in terms of civic awareness. Pfister et al. (2024) revealed a very strong relationship between students' levels of social participation and civic awareness in their study.

These physically conducted activities, while leading to improvements in the competencies of participating students, can also create a certain level of awareness in the people they interact with. This phenomenon, described by Hadjichambis and Paraskeva-Hadjichambi (2020) as "agents of change," should aim to transform students' individual acquisition of environmental

citizenship qualities into a tool for social change. Just as environmental problems and issues related to sustainable development are not only individual but also societal in origin, the solution and prevention of these negative consequences can only be achieved through individual and societal awareness (Jensen & Schnack, 1997). From this perspective, the finding of a transition from individualism to socialization obtained in the research is considered quite important in terms of sustainable environmental awareness. In this context, sharing products prepared for environmental awareness through social media accounts has been an application that provides added value in terms of social impact. Although the relevant literature mentions some potential negative effects of social media use on children and young people (Fassi et al., 2025; Montag et al., 2024), when used in the right context, it can become an important tool, especially in terms of the functionality of its social influence mechanism. At this point, students' digital citizenship competencies come to the forefront; it is once again emphasized that students should be equipped with the necessary skills for correct and safe internet use.

The integration of technology and social media into the action steps was another important feature reflected in the findings. Throughout the process, students carried out various activities such as preparing posters and brochures using various computer programs. The findings indicate that technology integration did not lead to significant problems. The dynamics and realities of the 21st century reveal that today's effective and qualified citizen cannot be shaped by a single skill alone. The development of environmental citizenship qualities should not be understood as a standalone field; it should not be forgotten that the interaction between skills is a crucial component for the holistic picture. In this context, the research considered the process of developing environmental citizenship qualities together with digital citizenship qualities, and it was shown that this integration could be more beneficial for quality citizenship education. While some students had a hesitant and questioning perspective towards these programs before the application, their self-confidence increased with the support of the researcher throughout the process, and they were able to produce products of the desired quality. At this point, the importance of teachers adopting a supportive, encouraging, and motivating stance towards students throughout the process of skill development activities becomes evident once again. In this context, one of the crucial pillars to consider is, of course, teacher competencies. Since educational outcomes cannot be evaluated independently of teacher qualifications, teacher quality will be one of the most dominant factors in educational activities designed and implemented for skill development, especially in environmental citizenship.

In many educational processes, especially environmental citizenship education, teachers often prioritize covering the curriculum rather than implementing enriched or differentiated educational practices (Gericke et al., 2020). However, the results of this research show that the environmental citizenship process can be much more lasting and effective with differentiated educational practices. Therefore, teachers should strive to overcome the challenges in their daily professional practices and endeavor to equip their students with the necessary qualities to achieve a sustainable world goal (Mulà & Tilbury, 2025). Otherwise, the world's descent into an unsuitable state for life due to human-induced interventions could accelerate, in the context of the debates surrounding the concept of planetary limits, where the question of whether a new threshold has been crossed is investigated every day (Richardson et al., 2023).

Based on the findings and conclusions of the study, the following recommendations are proposed to support the development of students' environmental citizenship competencies within the context of social studies education:

* Activities designed to develop environmental citizenship competencies should, whenever possible, be integrated into the school's social and physical environment.

* Social media and artificial intelligence (AI) tools should be incorporated into environmental citizenship activities under the teacher's guidance. Their use should be carefully planned, pedagogically justified, and implemented within clearly defined boundaries to ensure safe, purposeful, and educationally meaningful learning experiences.

Limitations

This research aimed to improve students' environmental citizenship competencies in 6th grade social studies lessons through the use of social media-supported out-of-school learning environments. Although the study produced significant findings, it also has several limitations. The first limitation of the research is the lack of data regarding long-term observation and permanence. While instantaneous data were obtained regarding positive development and transformation in students concerning environmental citizenship competencies, sufficient data could not be obtained regarding whether this change and transformation was long-term and permanent. In addition, another limitation of the research is that the applications were carried out with a small sample and in a socio-economic context. It may be possible to add enriched data to the literature in more comprehensive and layered research to be conducted in the future.

References

- Adara, O. A. (1996). Strategies of environmental education in social studies in Nigeria by the year 2000. *Environmental Education Research*, 2(2), 237–246. <https://doi.org/10.1080/1350462960020209>
- Akkuş, A., Meydan, A., & Kemer kaya, G. (2026). Sürdürülebilir çevre eğitimi perspektifinden 2024 sosyal bilgiler dersi öğretim programının değerlendirilmesi. *Eğitim Bilimleri Tematik Araştırmalar Dergisi*, 2(4), 102-118.
- Ali, T., & Karim, S. (2022). Teaching and learning in social studies classrooms in Pakistan. In K. J. Kennedy (Ed.), *Social studies education in South and South East Asian contexts* (pp. 131–144). Routledge.
- Awopetu, L. O. (2001). Social studies education in Nigeria: Its evolution and development. *The Nigerian Academic Forum*, 1(2), 128–131.
- Ballantyne, R., & Packer, J. (2009). Introducing a fifth pedagogy: Experience-based strategies for environmental education. *Environmental Education Research*, 15(2), 243–262. <https://doi.org/10.1080/13504620802587981>

- Bell, D. R. (2005). Liberal environmental citizenship. *Environmental Politics*, 14(2), 179–194. <https://doi.org/10.1080/09644010500054863>
- Boeve-de Pauw, J., & Van Petegem, P. (2018). Eco-school evaluation beyond labels: The impact of environmental policy, didactics and nature at school on student outcomes. *Environmental Education Research*, 24(9), 1250–1267. <https://doi.org/10.1080/13504622.2017.1307327>
- Chan, Y. W. (2023). Developing youth toward pluralistic environmental citizenship: A Taiwanese place-based curriculum case study. *Environmental Education Research*, 29(1), 121–147. <https://doi.org/10.1080/13504622.2022.2093334>
- Chan, Y. W. (2025). Social studies advocacy for environmental and sustainability education: A scholarly review and discussion within the US schooling contexts. *Environmental Education Research*, 31(4), 840–855. <https://doi.org/10.1080/13504622.2024.2405892>
- Clayton, S., Devine-Wright, P., Stern, P. C., Whitmarsh, L., Carrico, A., Steg, L., Swim, J. K., Bonnes, M., & Bonaiuto, M. (2015). Psychological research and global climate change. *Nature Climate Change*, 5(7), 640–646. <https://doi.org/10.1038/nclimate2622>
- Creswell, J. W. (2013). *Qualitative inquiry and research design: Choosing among five approaches* (3rd ed.). Sage.
- Creswell, J. W., Hanson, W. E., Plano Clark, V. L., & Morales, A. (2007). Qualitative research designs: Selection and implementation. *The Counseling Psychologist*, 35(2), 236–264. <https://doi.org/10.1177/0011000006287390>
- Çermik, S., & Akçay, H. (2020). Çevresel vatandaşlık bilgi testinin geliştirilmesi ve ortaokul öğrencilerinin bilgi düzeylerinin belirlenmesi. *Turkish Studies*, 15(3), 1235–1256. <https://doi.org/10.29228/TurkishStudies.42112>
- Dobson, A. (2007). Environmental citizenship: Towards sustainable development. *Sustainable Development*, 15(5), 276–285. <https://doi.org/10.1002/sd.344>
- ENEC Consortium. (2019). *Education for environmental citizenship in focus. European Network for Environmental Citizenship (ENEC)*.
- Fadaee, S. (2017). Environmentally friendly food initiatives in Iran: Between environmental citizenship and pluralizing the public sphere. *Citizenship Studies*, 21(3), 344–358. <https://doi.org/10.1080/13621025.2016.1277979>
- Fassi, L., Ferguson, A. M., Przybylski, A. K., Ford, T. J., & Orben, A. (2025). Social media use in adolescents with and without mental health conditions. *Nature Human Behaviour*, 9(6), 1283–1299. <https://doi.org/10.1038/s41562-025-02134-4>
- Fenney Salkeld, D. (2019). Environmental citizenship and disability equality: The need for an inclusive approach. *Environmental Politics*, 28(7), 1259–1280. <https://doi.org/10.1080/09644016.2017.1413726>
- Fonseca, A., & Castro, P. (2022). Thunberg’s way in the climate debate: Making sense of climate action and actors, constructing environmental citizenship. *Environmental Communication*, 16(4), 535–549. <https://doi.org/10.1080/17524032.2022.2054842>
- Gericke, N., Huang, L., Knippels, M.-C. P. J., Christodoulou, A., Van Dam, F., & Gasparovic, S. (2020). Environmental citizenship in secondary formal education: The importance of curriculum and subject teachers. In A. C. Hadjichambis, P. Reis, D. Paraskeva-Hadjichambi, J. Činčera, J. Boeve-de Pauw, N. Gericke, & M.-C. Knippels

- (Eds.), *Conceptualizing environmental citizenship for 21st century education* (pp. 193–212). Springer. https://doi.org/10.1007/978-3-030-20249-1_13
- Gifford, R. (2011). The dragons of inaction: Psychological barriers that limit climate change mitigation. *American Psychologist*, 66(4), 290–302. <https://doi.org/10.1037/a0023566>
- Gorman, J. R., Kim, H., Sakuma, K.-L. K., Koneru, G., Aslam, M., Arredondo Abreu, C., & Primack, B. A. (2025). Time and frequency of social media use and loneliness among U.S. adults. *International Journal of Environmental Research and Public Health*, 22(10), 1510. <https://doi.org/10.3390/ijerph22101510>
- Green, C., Medina-Jerez, W., & Bryant, C. (2016). Cultivating environmental citizenship in teacher education. *Teaching Education*, 27(2), 117–135.
- Hadjichambis, A. C., & Paraskeva-Hadjichambi, D. (2020). Education for environmental citizenship: The pedagogical approach. In A. C. Hadjichambis et al. (Eds.), *Conceptualizing environmental citizenship for 21st century education* (pp. 237–261). Springer. https://doi.org/10.1007/978-3-030-20249-1_15
- Hadjichambis, A. C., & Reis, P. (2020). Introduction to the conceptualisation of environmental citizenship for twenty-first-century education. In A. C. Hadjichambis et al. (Eds.), *Conceptualizing environmental citizenship for 21st century education* (pp. 1–14). Springer. https://doi.org/10.1007/978-3-030-20249-1_1
- Hardy, C. A. (1973). Training social studies teachers in environmental education. *The Journal of Environmental Education*, 4(4), 15–17. <https://doi.org/10.1080/00958964.1973.10801761>
- Harvey, D. J., Montgomery, L. N., Harvey, H., Hall, F., Gange, A. C., & Watling, D. (2020). Psychological benefits of a biodiversity-focussed outdoor learning program for primary school children. *Journal of Environmental Psychology*, 67, 101381. <https://doi.org/10.1016/j.jenvp.2019.101381>
- Hepburn, M. A. (1974). Providing an analytical framework for environmental social studies. *The Journal of Environmental Education*, 5(4), 25–28. <https://doi.org/10.1080/00958964.1974.10801833>
- Huckle, J., & Wals, A. E. J. (2015). The UN decade of education for sustainable development: Business as usual in the end. *Environmental Education Research*, 21(3), 491–505. <https://doi.org/10.1080/13504622.2015.1011084>
- Imeson, J., & Skamp, K. R. (1995). A novel use of literature to integrate environmental education with social studies. *The Social Studies*, 86(5), 215–220. <https://doi.org/10.1080/00377996.1995.9958397>
- Iversen, E., & Jónsdóttir, G. (2019). ‘We did see the lapwing’ – practising environmental citizenship in upper-secondary science education. *Environmental Education Research*, 25(3), 411–421. <https://doi.org/10.1080/13504622.2018.1455075>
- Jensen, B. B., & Schnack, K. (1997). The action competence approach in environmental education. *Environmental Education Research*, 3(2), 163–178. <https://doi.org/10.1080/1350462970030205>
- Kemmis, S., & McTaggart, R. (2005). Participatory action research: Communicative action and the public sphere. In N. K. Denzin & Y. S. Lincoln (Eds.), *The Sage handbook of qualitative research* (3rd ed., pp. 559–603). Sage Publications.

- Kerçin, D. (2025). Sosyal bilgiler dersi öğretim programlarında çevre eğitimi: 2005, 2018 ve 2024 programlarının karşılaştırmalı analizi. *Marmara Üniversitesi Atatürk Eğitim Fakültesi Eğitim Bilimleri Dergisi*, 61(61), 278-295. <https://doi.org/10.15285/maruaebed.1558031>
- Kollmuss, A., & Agyeman, J. (2002). Mind the gap: Why do people act environmentally and what are the barriers to pro-environmental behavior? *Environmental Education Research*, 8(3), 239–260. <https://doi.org/10.1080/13504620220145401>
- Kowasch, M., Oettel, J., Bauer, N., & Lapin, K. (2022). Forest education as contribution to education for environmental citizenship and non-anthropocentric perspectives. *Environmental Education Research*, 28(9), 1331–1347. <https://doi.org/10.1080/13504622.2022.2060940>
- Lewis, S. L., & Maslin, M. A. (2015). Defining the Anthropocene. *Nature*, 519, 171–180.
- McNeill, J. R. (2003). Observations on the nature and culture of environmental history. *History and Theory*, 42(4), 5–43. <https://doi.org/10.1046/j.1468-2303.2003.00255.x>
- Meerah, T. S. M., Halim, L., & Nadeson, T. (2010). Environmental citizenship: What level of knowledge, attitude, skill and participation the students own? *Procedia–Social and Behavioral Sciences*, 2(2), 5715–5719. <https://doi.org/10.1016/j.sbspro.2010.03.933>
- Mercer, J. (2007). The challenges of insider research in educational institutions: Wielding a double-edged sword and resolving delicate dilemmas. *Oxford Review of Education*, 33(1), 1–17. <https://doi.org/10.1080/03054980601094651>
- Miles, J. (2021). Curriculum reform in a culture of redress: how social and political pressures are shaping social studies curriculum in Canada. *Journal of Curriculum Studies*, 53(1), 47–64. <https://doi.org/10.1080/00220272.2020.1822920>
- Montag, C., Demetrovics, Z., Elhai, J. D., Grant, D., Koning, I., Rumpf, H.-J., Spada, M., Throuvala, M., & van den Eijnden, R. J. J. M. (2024). Problematic social media use in childhood and adolescence. *Addictive Behaviors*, 153, 107980. <https://doi.org/10.1016/j.addbeh.2024.107980>
- Mulà, I., & Tilbury, D. (2025). Teacher education for sustainable development: Catalysing change across the professional landscapes in Europe. *Environmental Education Research*, 31(7), 1481–1508. <https://doi.org/10.1080/13504622.2025.2475143>
- Ogunyemi, B., & Ifegbesan, A. (2011). Environmental literacy among preservice social studies teachers: A review of the Nigerian experience. *Applied Environmental Education & Communication*, 10(1), 7–19. <https://doi.org/10.1080/1533015X.2011.549795>
- Patton, M. Q. (2002). *Qualitative research and evaluation methods* (3rd ed.). Sage Publications.
- Pfister, T. A., Rimm-Kaufman, S. E., Merritt, E. G., & Konold, T. R. (2024). Empowering community-changers: Developing civic efficacy in elementary classrooms. *Applied Developmental Science*, 28(1), 33–45. <https://doi.org/10.1080/10888691.2022.2134132>
- Prasetya, T. Y., Hery, H., & Haryani, C. (2024). A quantitative study on social media usage patterns and their effects among internet users. *International Journal of Informatics and Information Systems*, 7(3), 147–157. <https://doi.org/10.47738/ijiis.v7i3.218>

- Price, E., Maguire, S., Firth, C., Lumber, R., Richardson, M., & Young, R. (2022). Factors associated with nature connectedness in school-aged children. *Current Research in Ecological and Social Psychology*, 3, 100037. <https://doi.org/10.1016/j.cresp.2022.100037>
- Qu, S. Q., & Dumay, J. (2011). The qualitative research interview. *Qualitative Research in Accounting & Management*, 8(3), 238–264.
- Richardson, K., Steffen, W., Lucht, W., Bendtsen, J., Cornell, S. E., Donges, J. F., Drüke, M., Fetzer, I., Bala, G., von Bloh, W., Feulner, G., Fiedler, S., Gerten, D., Gleeson, T., Hofmann, M., Huiskamp, W., Kummu, M., Mohan, C., Nogués-Bravo, D., ... Rockström, J. (2023). Earth beyond six of nine planetary boundaries. *Science Advances*, 9(37), eadh2458. <https://doi.org/10.1126/sciadv.adh2458>
- Rockström, J., Steffen, W., Noone, K., Persson, Å., Chapin, F. S., Lambin, E. F., Lenton, T. M., Scheffer, M., Folke, C., Schellnhuber, H. J., Nykvist, B., de Wit, C. A., Hughes, T., van der Leeuw, S., Rodhe, H., Sörlin, S., Snyder, P. K., Costanza, R., Svedin, U., Falkenmark, M., Karlberg, L., Corell, R. W., Fabry, V. J., Hansen, J., Walker, B., Liverman, D., Richardson, K., Crutzen, P., & Foley, J. A. (2009). A safe operating space for humanity. *Nature*, 461(7263), 472–475.
- Sauvé, L. (2005). Currents in environmental education: Mapping a complex and evolving pedagogical field. *Canadian Journal of Environmental Education*, 10, 11–37.
- Schild, R. (2016). Environmental citizenship: What can political theory contribute to environmental education practice? *The Journal of Environmental Education*, 47(1), 19–34. <https://doi.org/10.1080/00958964.2015.1092417>
- Sim, J. B.-Y., & Print, M. (2005). Citizenship education and social studies in Singapore: A national agenda. *International Journal of Citizenship and Teacher Education*, 1(1), 58–73.
- Sisay, G., & Teferi, B. (2025). Challenges in teaching and learning Social Studies in middle level schools and its implications for quality education in Addis Ababa: The case of Yeka Sub-city. *Social Sciences & Humanities Open*, 11, 101587. <https://doi.org/10.1016/j.ssaho.2025.101587>
- Somekh, B., & Zeichner, K. (2009). Action research for educational reform: Remodelling action research theories and practices in local contexts. *Educational Action Research*, 17(1), 5–21. <https://doi.org/10.1080/09650790802667402>
- Steffen, W., Crutzen, P. J., & McNeill, J. R. (2007). The Anthropocene: Are humans now overwhelming the great forces of nature? *AMBIO*, 36(8), 614–621.
- Steg, L., & Vlek, C. (2009). Encouraging pro-environmental behaviour: An integrative review and research agenda. *Journal of Environmental Psychology*, 29(3), 309–317. <https://doi.org/10.1016/j.jenvp.2008.10.004>
- Tarrant, M., & Lyons, K. (2012). The effect of short-term educational travel programs on environmental citizenship. *Environmental Education Research*, 18(3), 403–416. <https://doi.org/10.1080/13504622.2011.625113>
- UNESCO. (2017). *Education for sustainable development goals: Learning objectives*. UNESCO Publishing.
- UNESCO. (2020). *Education for sustainable development: A roadmap*. UNESCO.

- van Harskamp, M., Knippels, M.-C. P. J., & van Joolingen, W. R. (2024). Environmental citizenship: Dutch students' sustainability competences and avenues for science education. *The Journal of Environmental Education*, 55(4), 267–288.
- Vihersalo, M. (2017). Climate citizenship in the European union: Environmental citizenship as an analytical concept. *Environmental Politics*, 26 (2), 343–360.
- Wai Ying, T., Alias, N., & DeWitt, D. (2024). Sustainable environmental education using virtual reality: A module for improving environmental citizenship competences in secondary schools. *Eurasia Journal of Mathematics, Science and Technology Education*, 20(10), em2511. <https://doi.org/10.29333/ejmste/15177>
- Wong, S., & Sharp, L. (2009). Making power explicit in sustainable water innovation: Re-linking subjectivity, institution and structure through environmental citizenship. *Environmental Politics*, 18(1), 37–57. <https://doi.org/10.1080/09644010802624785>
- Wood, B. E., Taylor, R. M., & Atkins, R. A. (2013). Fostering active citizenship through the New Zealand social studies curriculum: Teachers' perceptions and practices of social action. *New Zealand Journal of Educational Studies*, 48(2), 84–98.
- Yang, S., & Han, J. (2025). Becoming teacher-researchers through action research: The experiences of Chinese language teacher candidates in a cross-cultural context. *System*, 131, 103632. <https://doi.org/10.1016/j.system.2025.103632>