

Article

Meaningful Encounters with the Built Environment as the Basis for Urban Environmental Education

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Abstract: As the majority of people in the world now live in cities, it makes sense to question the state of urban environmental education and how it could be developed going forward. In this article, we suggest a way forward based on the essays written by Finnish university students. The students reflected on their relationship with an environment that is meaningful to them. In the essays selected for this case study ($n = 25$), the built environment of Helsinki—the capital of Finland—and its characteristics are in focus. In this qualitative research, inductive content analysis was used for processing the essays. Many students described the connections between urban nature and built environments, but the results also show that the built environment is especially significant because of its social and cultural aspects. Students described the importance of social bonding and how meeting different sorts of people supports their acceptance of diverse perspectives. Personal experiences and meanings attached to the city, as well as their lack, were mentioned; that is, without these personal bonds, meaningful relations to urban environments cannot be developed. Architecture, aesthetics, and soundscapes were also mentioned. In addition, it was expressed that feeling safe in the built environment is important. In urban environmental education, it is therefore important to pay attention to the social and cultural aspects, too, and not just to the ecological dimension. It is crucial that children and young people have access to the city in order to construct their personal relationships with the built environment.



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1. Introduction

Cities are everyday environments for most people in the world. More than half of the global population now lives in urban settings: in 2019, the urban population rate was about 56% [1]. In Finland, where our research is based, urbanization—compared with other Western countries—occurred late: only after the Second World War. Now, about 85% of Finnish people live in urban areas. Because this change has been so rapid, Finnish culture is still strongly attached to its rural background; this can be seen in the repeated ideas of Finnish people's close relationship with nature [2–5].

Environmental education is most often connected to nature education and ecological sustainability, even though the need for urban environmental education was already expressed in international UNESCO-organized conferences in the 1970s [6] (p. 53). At present, urban environmental education, to some extent, seems to underline nature access in cities—for instance, how children and young people can observe different species in parks and other urban green areas, and how environmental learning can take place at community gardening. In addition, the topics of energy and water consumption and waste management are familiar themes in urban environmental education [7] (pp. 115–116). Indeed, these are important aspects of urban environmental education at a time when cities and people living in them are facing complex problems such as climate change and issues of food security and poverty [8].

In this article, our aim is to take a closer look at the role of everyday urban environments in the context of environmental education. Our empirical research is based on essays written by Finnish university students who participated in the ‘Introduction to Environmental Education’ course. Our aim is to analyze meanings that the participants attached to urban environments. The following are the research questions:

1. What aspects of the built environment do university students find meaningful?
2. In which ways could these findings be taken into consideration when developing urban environmental education?

Based on our findings, we will present some ideas of how urban environmental education could be strengthened in the future. These ideas entail taking into consideration children’s and young people’s personal experiences and the social environment, as well as fostering their attachment to the urban settings.

2. Theoretical Background

2.1. *Aspects of Urban Environmental Education*

As we have already mentioned, environmental education is most often understood to consider education that is closely connected to natural settings in physical environments. Time spent in nature and the presence of role models (e.g., parents and grandparents) have been identified as significant factors in constructing environment-friendly behavior [9–11] and contact with nature has been observed to offer restorative experiences for many people [12]. In fact, emotional connection to the natural environment has been understood as one part of the way in which people construct their identities [13]. There are, however, also studies conducted in urban environments. Alex Russ and Marianne Krasny [14] (p. 2) have defined urban environmental education “as any practice that creates learning opportunities to foster individual and community well-being and environmental quality in cities”. Urban sustainability and resilience in various social-ecological contexts are highlighted in the studies reported in the collection of articles edited by Russ and Krasny [15]. By the concepts ‘environmental quality’ and ‘urban environmental education’, authors in the edited volume refer most often to the ecological aspects of the urban environment and educational practices attached to nature in cities. We, however, want to broaden these aspects so that the concept of the environment will be understood to cover not only the ecological but also the built, social, and cultural aspects of urban environments. Before this, however, we will make a brief overview of the existing research literature on urban environmental education by referring to the literature review carried out by Russ and Krasny [16]. They have analyzed research articles, chapters, and books that they found through Google Scholar and in ERIC by using the phrase ‘urban environmental education’. After reading more than 100 texts, they identified different underlying goals of urban environmental education and formed five trends based on their analysis to depict the main aspects of the research field [16] (p. 13). The trends were entitled as follows: (1) city as classroom; (2) problem solving; (3) environmental stewardship; (4) youth and community development; and (5) city as a social-ecological system.

The first trend mentioned by Russ and Krasny [15,16] includes studies in which the city works as a classroom for environmental education. Russ and Krasny [16] (p. 13) define the goal of this trend is “to foster environmental literacy or knowledge of the local environment. Programs that reflect this trend use outdoor and indoor settings in cities to facilitate learning about nature, ecology, biology, environment, and related sciences.” ‘City as classroom’ has close links to place-based education [17–19], in which students’ local environments have been taken as a starting point for teaching and learning. In reporting their research, Leou and Kalaitzidaki [20] (p. 222) noted how cities can provide access to history, ecology, culture, and work as learning environments in which students can study their own communities from interdisciplinary perspectives. Examples listed by Russ and Krasny [21] (p. 290) include educational approaches of nature studies, citizen science [22], environmental monitoring, inquiry-based programs, community mappings, neighborhood inventories, exhibitions, storytelling methods, and nature interpretations.

Even when interdisciplinarity is mentioned, the ecological environment is emphasized in these examples, and even when outdoor education is highlighted, it is mainly connected with learning about nature, ecology, and biology, as quoted above [16] (p. 13).

The second trend named by Russ and Krasny [16] covers educational approaches connected to the problem-solving tasks. Reasons behind this trend can be traced to issues of environmental concern: air pollution, lack of green space, and observed environmental injustice can increase people's willingness to act for the environment. Examples of this trend can be identified from the fast-growing field of climate change education [23,24] where children and young people are often seen taking initiatives for climate-friendly behavior and calling for change in climate policies. When these demands are turned into action, they come close to the third and fourth themes indicated by Russ and Krasny [16], which are environmental stewardship and individual and community development [25–27]. These refer to concrete actions such as tree planting, landscaping of schoolyards, and cleaning up litter in the local environment, but also to more general efforts to act responsibly at the community level programs. The fifth theme of the educational trends identified by Russ and Krasny [16] covers the idea of cities as social-ecological systems where natural and human-made elements are intertwined and dependent on each other.

Despite the large variety of approaches identified in the trends by Russ and Krasny [16], we argue that one important approach is missing, the one that places everyday urban surroundings as the starting point for education. Here, 'everyday' means "those ordinary, taken-for-granted, habitual thoughts, activities, and settings that are close and familiar" [28] (p. 1043). By urban surroundings, we wish to highlight all aspects of environmental education, not just the ecological one, but also daily environments where personal bonds are constructed in everyday actions. These environments consist of ecological, built, and social elements, which all shape people's relationships with their environments.

2.2. *The Built Environment in Finnish Formal Curricula*

The aim of this case study is to develop urban environmental education with the ideas and meanings that Finnish university students attach to the built environment and present in their essays. In order to strengthen the view of the Finnish context of our case study, we will present the contexts in which the built environment is mentioned in Finnish formal curricula. These documents do not mention 'urban environments', which is why we have explored specifically how the documents guide the use of 'built environments' in education; that is, what aspects do the formal curricula attach to the built environments? As the aim of our research is to develop urban environmental education, the formal curricula also serve as a starting point from which to develop (Finnish) urban environmental education.

In order to find out what the Finnish national core curricula state about the built environment, we went through five documents (curriculum for basic education includes both primary and lower secondary curricula) searching for the contexts in which the built environment is mentioned (Table 1). According to the curricula, a wide range of subject matters can be learnt in the built environment. This is because the built environment is seen as a 'learning environment' in which different forms of action and learning can take place. In other words, any sort of 'learning content' can also be implemented in the built environment. The National Core Curriculum for General Upper Secondary Schools 2015 [29] sets out in more detail how the built environment should be used. For instance, it is stated that "built spaces and nature are utilised in learning in a way that makes room for creative thinking and research-based study". In addition, the student should "be able to analyse and appraise changes occurring in natural, built, and social environments and have confidence to act in favour of positive solutions".

Table 1. The contexts in which the built environment is mentioned in Finnish school curricula [29–33].

Education Level and Curriculum	Contexts in Which the Built Environment is Mentioned
Early childhood education and care (2018)	Learning environment, observation skills, to conduct experiments, to act, to make field trips
Preschool (2014)	Learning environment, observation skills
Primary school (2014)	Learning environment, observation skills, to conduct experiments, (learning) content, to act, to move, to make field trips, to explore, to know and understand the built environment, the basis of design processes
Lower secondary school (2014)	Learning environment, observation skills, to conduct experiments, (learning) content, to analyze, to apply knowledge, to preserve
Upper secondary school (2015)	Observation skills, to conduct experiments, to think creatively, to evaluate and analyze changes, to examine cultural diversity and sustainable development, the basis of visual production, to understand the significance of visual arts
Upper secondary school (2019)	Learning environment, observation skills, to conduct experiments, (learning) content, to examine the values and meanings of the built environment, to explore and interpret the built environment

All in all, the built environment receives the most mentions in the school subjects of environmental studies (primary school) and geography (lower and upper secondary school). In addition to these subjects, the built environment is mostly mentioned in crafts, visual arts, and health education.

3. Materials and Methods

3.1. Finnish University Students' Essays

The empirical dataset consists of essays written by Finnish university students who took part in a course entitled 'Introduction to Environmental Education'. The course is led by one of the authors at the University of Helsinki. The students participating in the course represented many faculties at the University of Helsinki: depending on the year, there were participants from the faculties of Agriculture and Forestry, Arts, Biological and Environmental Sciences, Educational Sciences, Science, Social Sciences, and Theology. The essays were collected over a period of 7 years, that is, in 2013, 2015, and 2017–2021. In the essays, the students were to reflect on their relationship with the environment. They were to choose a place meaningful to them and justify why the place and its immediate surroundings were important to them.

For this article, essays covering the built environment of Helsinki, the capital of Finland, were selected respectively. That is, the essay had to be about the built environment of Helsinki and its characteristics to be part of the dataset. Consequently, 25 essays filled the criteria and were selected for this article from a total number of 182. Over the years, students' homes and summer cottages, as well as natural environments, such as Finnish lakes and forests, have been emphasized in the essays. However, if the essay dealt with the countryside, nature, or another city in Finland, it was omitted from the dataset. In addition, essays dealing only with the aspect of students' homes or only natural elements in Helsinki were omitted from the dataset. This is because these essays did not depict the characteristics of the built environment of Helsinki as a public space. It was noticeable that in many of the essays the background of the students moving to Helsinki to study at the university colored the students' attitudes toward the capital. In this article, we are especially interested in the ways that the students perceive Helsinki.

Originally, the students were also instructed to take photographs of the environments that were especially meaningful to them. Thus, each essay has at least one photograph, too. However, the photos are not studied in this article. In other words, in this article the dataset consists only of the written text parts of the essays. However, we will give two examples of the photographs to illuminate some of the meanings that the students conveyed

using photography, but the focus is on the written text. The role of the two photographs (Figures 1 and 2) presented here is, therefore, only exemplary.



Figure 1. With the photograph, Student 25 wants to emphasize the ecological lifestyle of people living in the Viikki region.



Figure 2. Student 22 draws attention to abandoned shopping carts, their number, and location. In the photograph, one shopping cart can be found on the right side and two more in the middle of the picture.

3.2. Inductive Content Analysis

The next section introduces the results of the inductive content analysis that was used in this qualitative research. Inductive content analysis can be divided into three phases: preparation, organizing, and reporting [34]. The preparation phase started with selecting the unit of analysis. As reported above, the dataset consists of essays ($n = 25$) covering the built environment of Helsinki. From each essay, the parts depicting Helsinki were chosen as the units of analysis, respectively. The next step was to organize the qualitative data. This process included open coding, creating categories, and abstraction. First, we identified a few main themes (generic categories) for each essay (Table 2). Each category was named by using content-characteristic words. Second, we abstracted the generic categories into four main themes: (1) urban nature, (2) architecture, aesthetics, and soundscape, (3) social

environment, and (4) place attachment. However, this does not mean that, for instance, urban nature could not be briefly mentioned in excerpts classified in other themes. The purpose of creating themes was to provide a means of describing the meanings students attach to urban environments and “to increase understanding and to generate knowledge” about the phenomenon [34] (p. 111). The excerpts included here were translated from Finnish to English, and standard punctuation was added for readability [4].

Table 2. Empirical dataset and generic categories of the essays.

Year	Total Number of Essays	Number of Essays Covering the Built Environment in Helsinki	Pseudonyms	Generic Categories of the Essays
2013	19	3	Student 1	Urban nature
			Student 2	Urban nature, social environment
			Student 3	Environmental art
2015	20	3	Student 4	Architecture, buildings
			Student 5	Soundscapes, social environment, place attachment
			Student 6	Built environment and urban nature equally important
2017	39	7	Student 7	Urban nature, observation of the environment
			Student 8	Buildings
			Student 9	Aesthetics, place attachment
			Student 10	Lack of place attachment
			Student 11	Urban nature as a place for hanging out
			Student 12	Place attachment
2018	31	3	Student 13	Participation
			Student 14	Soundscape
			Student 15 Student 16	Suburban built environment, social acceptance Historical traces in the urban nature
2019	23	4	Student 17	Urban nature, feeling of security
			Student 18	Soundscape, peace, and temporality
			Student 19	Social environment, acceptance of difference
			Student 20	Architecture, creativity, feeling of free space, roughness
2020	21	4	Student 21	Urban nature, social environment
			Student 22	Aesthetics
			Student 23	Architecture, aesthetics
			Student 24	Urban agriculture
2021	29	1	Student 25	Ecological lifestyle

4. Results

In this section, the results from the students’ essays are reported in four subsections. We will start with themes regarding urban nature (Section 4.1) and then proceed from general themes regarding architecture, aesthetics, and the soundscape (Section 4.2) toward more personal meanings. That is, in Section 4.3. we will look at the importance of the social environment. Finally, the significance of place attachment to urban environments—and the lack of it—is presented in Section 4.4.

4.1. Urban Nature

When it comes to environmental education, the natural environments are quite often at the center of activity. In urban settings, this could mean, for instance, that children and young people are to observe and name species in a park or garden. As presented in Table 1, observation skills are also mentioned in the Finnish curricula in the context of the built environment. Therefore, urban nature can be the object of scientific observation as Student 7 illustrates in a very detailed manner:

“When it becomes quiet, the animals set off. During the day you can mainly see rats, crows, and seagulls, as well as squirrels, living in the churchyard, but in the mornings nature comes close. Rabbits and brown hares bounce along deserted streets and attentive foxes run across the yards. Hedgehogs, owls, bats, and many other animals are also a familiar sight at night. During the day these are not seen anywhere, and few people know about their nocturnal existence, but I am a night person and I tend to observe what is happening around me.”

Student 7 also pays attention to the question of how animals can adapt to the urban environment, even though it differs from that of wild nature. When it comes to human beings, parks can offer a safe environment in which to hang out and relax. Student 17 considers Alppipuisto (Alpine Park) near the amusement park of Linnanmäki—at the intersection of Alppila and Kallio neighborhoods—as such an environment. The quote also shows that the urban environment must feel safe.

“Alppipuisto is like a secret oasis in the middle of paved Helsinki. It is sheltered and people clearly take good care of it. It feels safe even when you are in the middle of an otherwise restless neighborhood [Kallio].”

Student 18 reports the need to occasionally get out of the heart of the city to come closer to nature. Student 18 goes running in Mustikkamaa [Blueberry Land]. It is a small island with a natural environment east of the center of Helsinki where people usually go to spend their free time. Student 18 considers the urban environment as endearing and meaningful, but on the other hand, absolute peace of the natural environment is needed.

“While the city is my daily environment and enables my work, hobbies, and leisure activities, I want to keep it at arm’s length, a little far away.”

Student 18 has never considered being an urban person even though they have lived in different cities all their life. Student 18 has always felt that the urban environment is only temporary, and that city life is nothing but a beautiful illusion.

Next, we will move from urban nature to explore the built environment, that is, the aesthetics and architecture of buildings, as well as the soundscape of urban life.

4.2. Architecture, Aesthetics, and Soundscape

Student 4 paints a picture of the built environment by naming quite a few well-known buildings in Helsinki. In the excerpt, the history of the city, access to cultural activities, and the constant flow of people are also present:

“I am watching passing boats, rumbling trains and trams, and the park opposite the beach. From this location, Helsinki can be seen in many ways: there is a serene peaceful city park, the historical Pitkäsilta [Long Bridge] with its bullet holes [from the Continuation War during the Second World War], the academic Botanical Garden, the sea, the city’s landmarks from Finlandia Hall to Uspenski Cathedral, the National Theatre, the Museum and Opera, the Parliament House, and public transport carrying people both on and underground.”

Student 20 is a member of a fire group whose training was first held at a youth center and now at a cultural center, both located in Suvilahti. Suvilahti is an old industrial area where currently many cultural events and music festivals are organized. In the essay, Student 20 expresses what the rustic industrial area and its architecture means to them:

“From the very beginning, I had fallen in love with the aging, alternative, and creative atmosphere of the place. I have always been interested in old and abandoned buildings. Therefore, it is not that surprising that I find the old industrial area fascinating with its sense of space and romance.”

The National Core Curriculum for General Upper Secondary Schools 2015 [29] states that built environments should be “utilised in the learning in a way that makes room for creative thinking”. In the above quotation, Student 20 emphasizes exactly the creative

atmosphere of Suvilahiti. Therefore, the personal experiences that children and young people gain in their free time should also be taken into consideration in urban environmental education. These experiences and personal attachment to urban environments can, for instance, be the starting point for an environmental project.

When it comes to the sustainability of cities, Student 25 lists garden plots, public transport, and natural environments, among others, as fundamental elements. According to Student 14, the above-mentioned elements can be found in the Viikki region. Student 25 has lived there for 10 years in their childhood. In Figure 1, the primary school and the upper secondary school of Viikki can be seen on the right side and the building where Student 25 lived as a child on the left side of the road. One of the main reasons that Student 25 chooses Viikki as the topic of the essay is precisely the aspect of an ecological lifestyle.

In addition to the aesthetics and architecture of buildings, the soundscape of Helsinki was mentioned in a few essays. Student 14 finds the access to the natural environment important, yet also that it should be possible to get to the city center within 20 minutes. Student 14 does not, however, explain why it is important to get to the center within 20 minutes; that is, the activities in the city center are not depicted in the essay. Instead, Student 14 ponders the meaning of the soundscape as follows:

“The soundscape is also an important part of the place’s charm: the clatter of the trams can be heard in the background as children play, and the screaming of the seagulls reveals that the sea is closer than one might think.”

Student 5 paints a picture of the soundscape with the clatter of the trams, as well.

“I chose this environment because every time I walk there or pass it on public transport, I feel good. The place is vivid as the trams clatter and the children’s voices can be heard as they play in the schoolyard.”

In the next subsections, the significance of the social environment and personal attachment to urban settings are explored. What is common to both themes is that they were not mentioned as often as architecture or the soundscape in the essays.

4.3. Social Environment

The importance of the social environment and human behavior in general is highlighted in a few essays. Let us start with Student 21 who evaluates the meanings attached to Mustikkamaa [Blueberry Land] from multiple angles. According to Student 21, the reasons for choosing Mustikkamaa have to do with social situations, leisure, emotions, and visual culture.

“That environment is also important to me as a social environment. Since many of my friends live in the same area, Mustikkamaa is also a place where I spend time with my friends.”

In addition, Student 21 says that Mustikkamaa is aesthetically and culturally significant. How the social environment helps to broaden the geographical worldview and thus to appreciate diversity is discussed in the essay by Student 19.

“I have broadened my mind in many directions. In an environment meaningful to me, I am with people who are not like me: we do not think the same way, we do not believe in the same things, we do not study the same discipline, we do not support the same political parties. Yet, I always return to this environment because here I am happy. I get to disagree. I rejoice a lot. I am in the heart of the city, but still with my own people. I am safe and loved.”

Human behavior is also evident in the next essay. Student 22 describes a place whose strangeness, excitement, and rugged aesthetics consists of abandoned shopping carts (Figure 2). Sometimes there are no shopping carts in the square; sometimes there are as many as 20. The shopping carts can be locked in a neat row just like outside the stores or they can be left on the lawn. One aspect of urban environmental education can, indeed, be

about reflecting on what sorts of elements one considers beautiful and intriguing in the built environment, as Student 22 elaborates.

“In a sense, such a symbiosis of the built environment and unusual human behavior is beautiful in its own way.”

4.4. Place Attachment

In this article, personal place attachment refers to the ways in which the students perceive their personal connections to the city [35] (p. 115). In some of the essays, the importance of personal attachment to urban settings was reflected in a reversed manner; that is, some of the students highlighted how they do not consider Helsinki as their home. For instance, Student 10 emphasizes the lack of personal attachment to Helsinki.

“Helsinki has not yet enchanted me and that is why it does not feel like home. Here, only a few places are special for me—most of the places have no history or stories for me.”

Especially in the context of early childhood education, weekly field trips to nearby forests are seen as a very important part of environmental education. When the visits to natural environments are arranged regularly, children learn how to act in the forest and to know that it is a safe environment for them [36]. Slowly, the forest as a geographical space grows into a meaningful place for the children. An example of this sort of growth from geographical space to geographical place [37] can be seen in the essay written by Student 12.

“My original image of Helsinki as an ugly, busy, and grey landscape has gradually softened over the 4 years I have studied here. The distances feel shorter now and the city is no longer as intrusive as it was when I started studying.”

Although the built environment and its nature can differ from that of the countryside, they can still share the same rhythm as Student 13 describes. In addition, Student 13 emphasizes the feeling of participation that people share in the city center of the Kamppi region.

“Even though the birds sing differently here, and it is not even dark at night, I feel the rhythm of the city has replaced the rhythm of nature that previously surrounded me. The immediate surroundings evoke feelings of inclusion and meaningfulness in me.”

Student 5 emphasizes the importance of the built environment over the natural environment, which happened quite rarely in the essays. Student 5 has always lived in the city and is satisfied with the fact that there are only small parks and individual trees nearby. Instead, the social environment is important for Student 5.

“I chose the urban environment as the meaningful place for me because that is where I feel at home. It is yards that bring social and communal content to my life, not nature and plants per se.”

It is good to keep in mind that personal attachment might, indeed, be the strongest toward one's own home; however, essays dealing only with the aspect of home were omitted from the dataset. Focus on personal spaces and meanings attached to homes would be a welcome addition to future studies. They, together with studies of everyday surroundings, could offer new insights into urban environmental education.

5. Discussion

In this article, we have been interested in the meanings that Finnish university students attach to the built environment of Helsinki, the capital of Finland. The aim of the article has been to consider how these meanings could be taken into consideration in urban environmental education. The role of urban environmental education is increasingly important because most people live in cities on a global level. That is also the reason why environmental education in the built environment is to be further developed. The dataset consisted of the essays written by the Finnish university students ($n = 25$). In addition to

the written essays, we have given two exemplary photographs (Figures 1 and 2) from the essays to illuminate some of the meanings that the students conveyed using photography. However, we did not include the photographs to the dataset for this article.

Following the footsteps of environmental education, urban environmental education can also take place, for instance, in parks, zoos, aquariums, nature centers, gardens, arboreta, and other places providing nature access in cities. These places offer the possibility for children and young people to practice their observation skills that are mentioned in the Finnish formal curricula [29–33]. In addition, these are opportunities to practice plant species recognition skills [38]. In the essays, plant and animal species were mentioned as the objects of scientific observation. The students highlighted the importance of natural environments and animals also in Helsinki. Some of the students described how they are watching and observing animals and their behavior in urban settings, that is, how animals have adapted to the rhythm of the city.

For the students themselves, parks and urban nature were mentioned as places of calm where they can go to relax. Students also described how they feel safe in parks. It became clear that the natural environments act as counterweights to urban life, according to the students. While one might live in the city, one can still have the urge to get away from the busy city life occasionally—for instance, to go running to the seashore or to a nearby forest. Earlier research has shown that natural features, such as gardens with colorful flowers and a sense of fresh air, are among the attributes that people value in cities [39].

However, urban environmental education is not only about nature education in the built environment. In urban settings, the results of human activities, such as architecture, aesthetics, and soundscape, offer opportunities to practice observation skills. The urban environment provides a framework for creativity and for observing changes in the environment, which are also mentioned in the Finnish formal curricula [29–33]. The detailed feel of each place is of importance when it comes to personal attachment to the city [40,41]. Some of the students mentioned the rugged yet creative atmosphere of old industrial places. In addition, excitement and even strangeness of a particular scene were mentioned as reasons for liking urban environments. Some of the students wrote how they find the architecture of buildings beautiful. As we stated in Section 4.3., one aspect of urban environmental education can, indeed, be about reflecting on what sorts of elements one considers beautiful and intriguing in the built environment. The cultural activities that the city has to offer were mentioned by the students, as well. All in all, the wide range of engagements with the affordances of the built environment [40] plays an important role when it comes to personal attachment.

In this article, we have especially been interested in the personal meanings that Finnish university students attach to their urban settings. As Tani [37] (p. 1508) has pointed out, when people “have opportunities to explore their daily environments by themselves and with other people, the environment becomes meaningful—a sense of place is created. Personal reflections are thus needed in the process of enhancing environmental sensitivity and appreciation of different environments”. It is therefore important that children and young people have opportunities to gain personal experiences in urban settings so that they may become attached to their places of residence. To enable children to develop relations with their urban environments, it must be ensured that urban environmental education offers a wide range of opportunities for gaining meaningful yet safe experiences from an early age. For example, study visits to museums, libraries, and theaters can provide opportunities for children and young people to get to know different adults and thus support social sustainability. On the positive experiences gained during study visits, personal attachment to the city has potential to grow. As we stated in Section 4.2., the personal experiences that children and young people gain in their free time should also be taken into consideration in urban environmental education. These experiences and personal attachments to urban environments can, for instance, be the starting points for an environmental project.

Based on the dataset, social environment and feelings of security are important. The social environment diversifies human relationships, helps to broaden one's geographical worldview, and supports appreciation of diversity, which in turn supports social sustainability. This is an important and essential aspect, as environmental education can be seen to emphasise the ecological dimension. Social connections among urban residents promote personal place attachment and can create a sense of security in the built environment. People feel more secure with their neighbors when they have a sense of community [42]. In addition, non-formal environmental learning can happen, for instance, in community meetings about energy and water issues [7] (pp. 115–116).

In some of the essays, the importance of personal attachment to urban settings was reflected in a reversed manner; that is, some of the students highlighted how they do not yet consider Helsinki as their home. The more time spent in the city and meaningful experiences gained, the more important the built environment becomes. The same has been found in studies concerning the natural environment [43,44]. In the context of this article, when one has meaningful encounters with the urban environment, it slowly turns from a city in which one studies to a city that one can consider as home; then, a change from a geographical space to a meaningful geographical place [38] has happened.

In the Introduction, we referred to the environmental challenges that cities are facing [8]. According to Song and Soopramanien [35] (p. 112), urban citizens “who are attached to their place of residence are more likely to engage in pro-environmental behaviour”. In addition, they think that place attachment policies should focus on promoting social connections among urban residents. Therefore, social connections and personal place attachments play important roles in urban environmental management, too. In Figure 3, we suggest that social environment and place attachment are seen as crucial elements in urban environmental education.

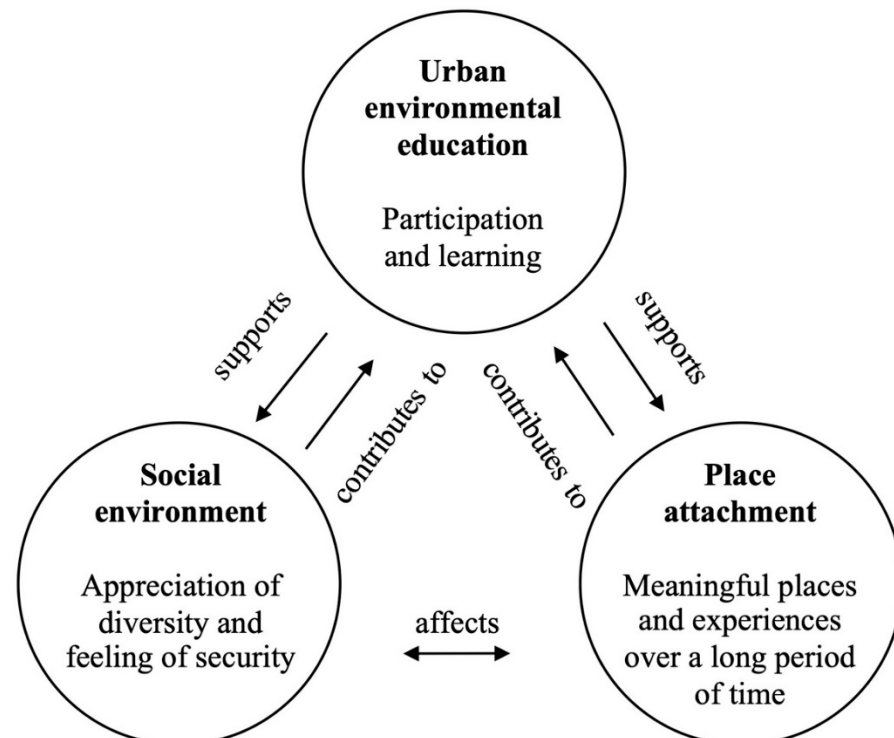


Figure 3. Urban environmental education that takes into consideration social environment and place attachment, adapted and modified from [45] (p. 167).

Finally, in the contemporary research literature of environmental education, there is a growing tendency to question the dichotomous thinking between humans and nature [3,46]. Researchers of posthumanist approaches have turned their interests toward

the mutual emergence of people and the environment; then the meanings are constructed and reconstructed in these rhizomatic relations. While posthumanist thinking occupies an important place in environmental education research, we still need studies in which personal and unique environmental experiences are explored.

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Institutional Review Board Statement: The study was conducted in accordance with the Declaration of Helsinki. In Finland, research with human participants must comply with the guidelines of the Finnish National Board on Research Integrity TENK (https://tenk.fi/sites/default/files/2021-01/Ethical_review_in_human_sciences_2020.pdf, accessed on 10 January 2022). The University of Helsinki has undertaken to comply with TENK's guidelines. The guidelines do not cover medical research as defined by law (Medical Research Act 488/1999) or other research designs where ethical review is a separate obligation laid down by law. Ethical review is to be carried out prior to gathering data, if the research contains one or more of the following factors: 1. Participation in the research deviates from the principle of informed consent. Participation is not, for example, voluntary, or the subject is not given sufficient or correct information about the research. 2. The research involves intervening in the physical integrity of research participants. 3. The focus of the research is on minors under the age of fifteen, without separate consent from a parent or carer, or without informing a parent or carer in a way that would enable them to prevent the child's participation in the research. 4. Research that exposes participants to exceptionally strong stimuli. 5. Research that involves a risk of causing mental harm that exceeds the limits of normal daily life to the research participants or their family members or others closest to them. 6. Conducting the research could involve a threat to the safety of participants or researchers or their family members or others closest to them. If none of the above factors is met, ethical review is not required.

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