Abstract
This study focuses on the perception of a “place” as “home” and on place attachment among children. The aim was to understand how these perceptions contribute to the development of environmental citizenship. The research was conducted in an isolated desert town, following an intervention program aimed at encouraging deeper attachment to a locale. The results led us to define categories of children’s perceptions that each represents a different connection to the environment. A comparison of children’s attachment to their locale before and after the intervention suggests a strengthening of “place attachment” and an increased sense of empowerment with regard to their ability to improve their surroundings.

Keywords: sense of place, place attachment, environmental citizenship, phenomenography, children’s drawing
Background

The Re-Conceptualization of Environmental Education
In recent years, there has been growing agreement that environmental education cannot be satisfied with the traditional model, based on three principles: “about the environment,” “in the environment,” and “for the environment” (Robottom 2007). Criticism of the popular environmental education approach asserts that it does not necessarily nurture responsible and active environmental citizens (Chawla 2009).

Lately, the literature on environmental education has tended to refer to “environmental citizenship” or “sustainable citizenship,” which combines environmental studies with values of awareness and civics literacy for the purpose of sustainable management (Hawthorne and Alabaster 1999; Rondinelli and Berry 2000; Mappin and Johanson 2005; Berkowitz et al. 2005; Barry 2006; Dobson and Bell 2006). A UNESCO working paper issued in 2005 proclaimed that the decade from 2005 to 2014 will be the “UN Decade of Education for Sustainable Development,” and declared that beyond knowledge and practices, environmental education should strive to turn its students into active and responsible citizens (UNESCO 2005, 17).

The new definition of the aims of environmental education helps to specify the unique qualities that should be fostered in order to encourage a rise in environmental citizenship. “Personal responsibility” is an important component of all educational programs that seek to support sustainable development, and nurturing this trait is usually carried out by exposing students to knowledge and by helping them to develop environmental awareness.

Place Attachment as Part of Environmental Education
This article seeks to address the sense of attachment that students feel towards their place of residence, and their perception of this place as a home; a factor that may affect the extent of their personal responsibility and willingness to actively participate in sustainable management of the environment.

The present research focuses on ways of conceptualizing the place of residence as home in children who reside in a small, isolated desert town adjacent to a relatively large and unique nature preserve in Israel. Residents of isolated localities may often feel that their place of residence does not provide the essential services needed for their welfare. For example, the significant distance from population centers reduces the number of job opportunities, as well as the possibilities for adequate education, health services, and entertainment. The gap between the residents' expectations for the place where they reside and reality may reduce their emotional attachment to the place, as well as their loyalty and their responsibility towards it and towards the local environment. Although this article focuses on residents of an isolated small town, the viewpoints expressed and the results obtained may also be applicable to residents of large and modern cites, or at least may help to focus the research aims and possible solutions.
A sense of attachment to a place is usually described in the literature through the use of the terms *sense of place* or *place attachment*. These are closely related terms that describe a sense of attachment to geographical places in such a way that makes these places significant for individuals or groups. The terms refer first and foremost to an emotional attachment, but also to a cognitive attachment (knowledge, thinking, and beliefs) and to a practical attachment (behavior and action) (Altman and Low 1992). The research literature in the field of anthropology, sociology and environmental psychology often addresses *sense of place* and *place attachment*, especially in the context of “a sense of home” and “residence” (Altman and Low 1992; Manzo 2003; 2005; Kyle and Chick 2007). Hay (1998; 2007) proposed the term *sense of place* for referring to a specific way of thinking, and thus it is regarded as broader than the term *place attachment*. Sense of place includes “subjective qualities (the sensing of a place to create personal meaning) and social context in a geographical region, as well as community and ancestral connections to a place” (Hay 1998, 3).

Many researchers emphasize long-term residence, ownership of a home, and expectations to stay in a place in the future as factors that reinforce attachment to a particular place. In addition, the importance of a deep acquaintance with the natural and built environment is emphasized for reinforcing an emotional attachment to a place (Altman and Low 1992; Basso 1994; Hay 1998; Mueller-Worster and Abrams 2005; Smaldone 2005). At the same time, good social relations, social involvement, and family ties may be no less important for forming a sense of place (Altman and Low 1992; Mesch and Manor 1998; Kyle and Chick 2007).

The social and the environmental dimensions of ties to a place have been found to affect environmental attitudes in different ways. Social attachment has been found to be an important predictor of concern for the local environment, in relation to protecting an environment that is of significance to the community’s culture or identity. Attitudes that manifest natural environment attachment were correlated with protecting the open landscape that surrounds a town or other settlement (Brehm, Eisenhauer and Krannich 2006). Attachment to a place increases individuals’ involvement with and concern about environmental issues (Vorkinn and Reise 2001), or it reinforces the residents' commitment to protect their environment and support sustainable development (Kyle et al. 2004; Smaldone et al. 2005).

Beyond the theoretical interest in this issue, it is reasonable to assume that a better understanding of the components comprising people’s attachment to their environment and how this attachment is formed may help to nurture individuals’ desire and commitment to actively attempt to improve the quality, services, and sense of security in their community (Mesch and Manor 1998).

**Heidegger’s Contribution to Sense of Place Theory**

Heidegger’s (1977) article, “Building Dwelling Thinking,” served as our inspiration for deepening the concept of a *sense of place as home* and for creating a framework for the research. Dwelling, according to Heidegger, is an essential
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human quality, and it is this quality that creates attachment to a particular place. By nature, a human being is a creature that dwells in one place (even if he or she does not always do so for long periods of time). As a dweller, one is constantly building structures in which to live, in addition to nurturing, developing, and maintaining the qualities of one's dwelling place. People do all this while becoming increasingly acquainted with the properties of their environment and with its various aspects (e.g., the climate, the land, societal consequences, and faith), and in maintaining their essence (Heidegger 1977, 337). Thus, the home is not limited to the building in which we live; it also includes sites that become places through that dwelling activity and way of thinking. Lack of “dwelling thinking,” according to Heidegger, may lead people to feel homeless, even if they own spacious and comfortable houses (Heidegger 1977, 339).

In recent years, the sense of attachment between human beings and their environment has begun to appear in environmental education discourse. A sense of attachment is considered a key component that affects one's desire to reside in a certain place, and a motivating factor to live as a citizen who is actively involved in the social life of the place and in protecting the quality of the environment (Orr 1992; Mueller-Worster and Abrams 2005; Szerszynski 2006; Brown and Raymond 2007; Flaws and Meredith 2007).

Place Attachment among Children
Positive attachment to a place is considered to be an important factor in children's healthy development, their self-confidence and their development of self-identity (Marcus 1992; Dallago et al. 2009). Most of the studies that discuss place attachment and sense of place in childhood focus on urban and non-natural areas while only a few refer to an attachment towards a natural environment (Derr 2002). These studies indicate some unique aspects of children's sense of place development. For example, Dallago and colleagues (2009) point to the fact that young children are less mobile than adults and in Western industrial societies they tend to spend most of their time at home or in their neighborhood. The availability of indoor entertainment such as television, computer games and the Internet amplify this tendency. According to Jones and Cunningham (1999), there are no significant differences between genders with regard to this range of place use. The familiar territory, or space, expands constantly during adolescence, when children begin to go beyond their local neighborhood to farther areas. By the end of elementary school, most children have a good idea of their geographical space in the context of the world (Jack 2010).

Young children's need to be protected makes the feeling of personal security one of the main factors of place attachment development. Indeed, many dangers lurk in the modern urban environment, but parents' and other adults' tendency to overprotect children leads to a decrease in children’s self-confidence when they explore their surroundings in early and middle childhood (Jones and Cunningham 1999; Jack 2010). This influence is highest in prepubescent girls, age 11 to 12 (Jones and Cunningham 1999).
Children develop a sense of place in different ways compared to adults. Children value the physical environment for what you can do in it, more than for its aesthetic, social or historical qualities (Chawla 1992; Marcus 1992; Derr 2002; Morgan 2010). In their games, children enjoy a natural and complex environment that stimulates their senses and imagination and suggests a variety of interactions. Despite gender differences in game preferences, Jones and Cunningham (1999) found that playing in the natural environment is favored by both genders.

Social connections are considered to be an important factor in place attachment. Children's social connections are usually restricted to their family, friends and neighbors (Jack 2010). During the elementary school years, children begin to develop an awareness of others in their space and empathy for others' hardships (Chawla 2009). This rising consciousness can serve as a good platform for environmental activism. In fact, direct interactions with the surrounding environment, as well as social and environmental activism, are considered to be a very powerful contributor to place attachment (Tuan 1977; Marcus 1992; Derr 2002; Chawla 2009; Morgan 2010; Jack 2010); but children, much more than adults, are usually excluded from active participation in management of their environment (Chawla 2009).

In a previous study (Avriel-Avni et al. 2010), we characterized the various ways in which children in a peripheral town experience their environment in terms of home and assessed their feelings of attachment to it. The underlying research assumption was that the various ways of experiencing the "settlement as home" affect the children's behavior, and that a better understanding of these various perceptions forms the basis for developing programs that nurture attachment and the virtues of environmental citizenship. The notion of "dwelling thinking" led us to focus our attention on the degree of complexity with which the settlement is experienced; on children's acquaintance with their environment; on interactions with the human and physical environment (constructing, nurturing, and maintaining its quality); and on the extent to which children perceive the place as a permanent home.

**Study Location**

We conducted both the present study and the previous one in a small town (population 4,500) in the Israeli Negev desert. The town is situated 80 kilometers (50 miles) from the nearest city and is surrounded by a wide nature preserve. The town is located on the cliffs of a makhtesh, a unique geological landform similar to a crater in appearance, but formed in a different way and better described as an erosion cirque; it has steep walls of resistant rock surrounding a deep, almost closed valley. This location has observation points offering spectacular views. The town is located at an elevation of 900 meters (nearly 3,000 feet) above sea level, and is characterized by a dry desert climate—cold in winter and hot in summer, and a high level of sun radiation. All essential resources—water, energy (electricity and gas), food, as well as social and cultural services—must be brought to the town from a considerable distance. Because of the town's small size, its residents have inadequate health services and limited job opportunities. In addition, the educational and cultural possibilities are limited in the town. As a result of these limitations, there is a great deal of mobility among the residents, and many of them...
perceive their residence as only temporary. A highway connecting southern and northern Israel crosses the town, constituting the main artery for transferring essential resources as well as people to and from the town. The first residents, who founded the town 50 years ago, intended to make a living from mining minerals and perceived the makhtesh and the open landscape surrounding them as a source of raw material. However, in the ensuing years, the town has undergone many changes and a varied population has moved to this area: immigrants from North Africa and the former Soviet Union who found cheap lodging in the town, servicemen from IDF bases in the area, and religious people who sought the desert solitude. From the 1990s onward, a new wave of immigration began, infusing the town with a population of artists, alternative therapists, and people who work in desert and ecological tourism. These new residents began to perceive the place as a center for desert tourism and the landscape surrounding it as a natural tourist resource. It is notable, however, that the surrounding open landscape and nature preserve are administered by a government authority, and town residents' influence on this administration is extremely limited.

Preliminary interviews with teachers and children who live in Mitzpe Ramon (Avriel-Avni, not published) indicated that many of the children experience the detachment and distance from cultural and business centers as a significant negative experience that shapes their sense of attachment to the place. This detachment encourages residents to perceive the place as a temporary home, or even as a place that limits their possibilities for personal development. Moreover, it does not encourage environmental responsibility. An environmental education center that was established in the town in 2003 set the goal of reinforcing the children's attachment to the place. Within the framework of this center, children from the second to the sixth grades participate in educational programs (two hours a week throughout the year) that include field trips, observations, and working in desert gardens. These activities are aimed at having them become better acquainted with the environment and encouraging them to cultivate the land and participate in environmental community projects.

**Results from the Previous Study**
Throughout 2006, we studied the nature of the children's attachment to this place and their various ways of experiencing the town and the landscape surrounding it as a “home.” The population of this study consisted of 44 children ages 8 to 9 in two third- and fourth-grade classes from the small town of Mitzpe Ramon. These children participated in the environmental education center's activities for two to three years prior to the research. The teachers of these two classes agreed to participate in the center's activities and the research. The children were asked to draw advertisements that would attract new residents to the town. We analyzed the drawings and children's explanations of these drawings by combining a phenomenological approach (Golomb 2004; Malchiodi 1998) for better understanding the individual's experience, and a phenomenographical approach (Loughland et al. 2002) in order to determine the different ways of experiencing the place as home. We used four interpreters (including one of the researchers) and the transcripts from the children’s interviews in order to determine the students' themes about their town as being their home or dwelling place. The analysis
revealed four different ways in which the students of Mitzpe Ramon experienced their town as a home, which can be described through the following categories (Avriel-Avni et al. 2010):

1. The Sitting Tenant– This refers to long-term residents in a place, who, although they are not the owners, have the right to continue living there without fear of eviction as long as they maintain their property and pay their rent.

2. The Lodger– This refers to limited-term residents who, although they may respect their place of residence, do not experience a great sense of responsibility toward it.

3. The Tourist– This refers to those short-term residents who feel that they are only passing through. They may appear to appreciate the scenic qualities of the place, but they do not seem to have a sense of belonging.

4. The Prisoner in His Own Home– This describes those residents (whether long- or short-term) who feel as if they are trapped in the place where they reside, with no possibility of escaping or making future changes.

The perceptions of most of the children who participated in the research could be characterized as that of “The Lodger” or “The Sitting Tenant” (84 percent). Most of the drawings expressed appreciation of the landscape’s beauty, and this may testify to the success of the environmental education program. At the same time, a minority of the children perceived the place as a permanent home, and the general impression was that most of the children perceived the town from an external point of view. Importantly, a critical number of the drawings lacked elements that expressed a cognitive attachment to the place, such as denoting familiar landscape features (except for the makhtesh) or drawings of local animals and plants. Moreover, drawings of people interacting with the environment or with other people hardly appeared, nor did drawings associated with environmental nurturing.

The research findings of 2006 created a certain sense of frustration for the teachers at the environmental education center, and presented them with a challenge: to reinforce the students’ attachment to the place. To this end, in 2007 a new educational intervention program was constructed by a joint team of teachers and researchers, aimed at nurturing and reinforcing students’ perceptions of the town as their home in an effort to promote their loyalty to the place and their willingness to seek ways to improve it—or in other words, to enhance their perception of themselves as active environmental citizens. This paper describes the research findings that accompanied the program’s implementation. In our research, we were interested first, in describing the children’s various perceptions of the town as a home and second, in following the process that the students had undergone throughout the year in order to make comparisons with those children who had not participated in the special program.
Research Design of the Present Study

Research Approach: Phenomenography
We designed this study according to the research approach of phenomenography. The concept of phenomenography first appeared in the work of Marton (1981), in a study that attempted to understand the sources of differences in students' ability to cope with learning assignments. “Learning” means a change in the learner's point of view of a phenomenon or a new way of experiencing it. Experiencing a phenomenon is a way of delimiting an object from its context and relating it to the same or other contexts. It is a way of delimiting components of the phenomenon and relating them to each other and to the whole, which constitutes the “structure” of the concept (Svensson 1984). To change this conception means not simply adding knowledge about a phenomenon; it must include a structural change (Marton 1994). The change does not necessarily require denial of the previous point of view; it can simply be a deeper and richer experience of the phenomenon.

Phenomenography examines how people experience, understand, and ascribe meaning to a specific situation or phenomenon (Marton and Booth 1997). Experiencing a phenomenon means observing it against the background of its context, categorizing it, giving meaning to its properties as opposites of other possible properties, and observing its complexity and the interactions between its components. When a person experiences a phenomenon, he or she actually highlights certain aspects of this phenomenon, while ignoring other aspects or treating them as an obvious background. The person undergoing the experience focuses on these aspects and is simultaneously aware of them. The differences in the ways in which various people experience the same reality may be critical when they are coping with learning challenges (Marton 1981).

Phenomenography and phenomenology both derive from the notion of the phenomenon, but they have important differences. The main question of phenomenology is: what is the phenomenon? This attempt to understand the qualities of a phenomenon can be considered as a first-order perspective. The goal of phenomenography, on the other hand, is to qualitatively describe different ways of experiencing various phenomena. This is a second-order perspective oriented towards people’s ways of seeing the world around them (Marton 1981). Unlike phenomenological research, which strives to describe a phenomenon in the way in which it is perceived by people, the unit of the phenomenographic research is a way of experiencing something, and the aim of the research is to expose and describe the variations in the way in which a certain phenomenon is experienced. The various ways of experiencing the phenomenon and the nature of the relations between them signify "the outcome space" (Marton and Booth 1997, 125).

Study Population
Two groups of fifth grade classes (ages 10-11) were involved in this study, group A and group B. An intervention program was implemented in group A that had participated in the research the previous year. This group included 24 students—15 girls and nine boys. In the course of the program, emphasis was placed on the students' involvement in the town. More specifically, the program emphasized
students’ ability to locate and formulate aspects of the town that were in need of improvement, and the children’s ability to actively participate in improving their town.

The program included two modules of one semester each. The two modules were implemented by the environmental education teacher who worked together with the homeroom teacher. The first module involved rehabilitation of ancient agricultural terraces in a dry river bed on the outskirts of the town, acquainting the students with the open landscape and involving them in nurturing and maintaining it. With the homeroom teachers’ encouragement, the children learned to relate to the place as a home, and gave names to sites in the valley. For instance, a tree in whose shade they would rest was given the name “the lonely resting tree.”

The second module, based on the multi-national project “Green Map,” enabled the students to form a perception of an “environmentally friendly” town, friendly both in terms of its physical and its human environment. The students mapped the town’s services and businesses and evaluated the extent of their “environmental friendliness.” Following this mapping, they made a list of proposals for improving chosen municipal services and businesses, and submitted it to the business managers and to the head of the municipal council. In addition, the students chose a class assignment for improving the town: renewing a playground by creating a unique decoration that reflected the connection between the town and its surrounding landscape, e.g., mosaic images of common wild desert animals.

Most of the students from the intervention group in the present study took part in the previous research in 2006, so we could compare their attitudes and conceptions in both studies on a personal basis.

Group B served as a comparison group. For technical reasons, this group, which is comparable in terms of academic achievements to group A, could not participate in this special program. Instead, they participated in the regular activities of the environmental education center, i.e., field trips and activities in the garden designed for instructional purposes. The comparison group included 17 students, nine girls and eight boys.

**Data Collection**

Any changes in students’ experiencing the town as a home and in the nature of the students’ attachment to the place was evaluated through four tools:

1. Class observations– We conducted informal observations during the data collection. Children’s statements and declarations, as well as their private conversations with the researchers, were written down.

2. Advertisements in the form of drawings to attract new residents to the town– The drawing assignment was chosen by assuming that experiencing the town as home contains both emotional and cognitive elements that young children would find difficult to express in words. In addition, children may experience a negative attachment to the place and thus refrain from expressing such emotions in words to
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the researchers. The “advertisement drawing” tool was utilized towards the end of the second module, and in fact it repeated an assignment that the children had received in the previous research. Each child received a sheet of A3 paper and a box of crayons, and had two hours in which to complete their assignment. The drawing assignments were designed to promote a feeling of freedom to express their ideas. Before the assignment, the teacher discussed the aim of the drawings with the students. This was followed by a discussion about the need to advertise the town. To avoid inhibiting possible critical expression, we deliberately injected into the conversation that preceded the assignment that “some people think it would be better if more residents came to live in the town.” This ambivalent wording was designed to legitimize negative feelings about their town, which were indeed expressed in some of the pictures drawn. The drawings were presented in a special exhibition in school for other students, teachers, parents, and visitors to see.

3. Semi-structured personal interview (15-20 minutes) – We interviewed each child about their attachment to the place when they submitted their drawing (see Appendix A for details). The interview included questions about the meanings that the children attributed to their drawings. This part of the interview can be considered what Marton and Booth (1997, 130) called “probing the interviewee's awareness of producing the task,” which causes them to have a meta-awareness of the way in which they coped with the task. For instance, in this stage some children explained that they had chosen to draw sports facilities and the group activity center because "these are the things that they like doing in the town."

In the course of the interviews, we found that the drawings triggered a productive conversation about the children's feelings towards the place, even when the drawings themselves were relatively poor. In addition to questions about the drawings, the interview included questions about the children's feelings towards their physical and social environment, inside the town and around it. In providing the children with the opportunity to explicate their drawings, we proceeded according to Willats (2005), who advised not to interpret children's art from the same perspective that we use for adult art. According to Willats, children’s art is often the outcome of the child’s struggle with unfamiliar techniques, rather than what they intended to express. Moreover, children’s means of expressing their own feelings in drawings are for the most part limited to their choice of subject matter and their representations of facial expressions (Willats 2005). However, for the purpose of avoiding adult standards and presumptions about the content and meaning, we also used Malchiodi's (1998) approach, which stressed the importance of conversing with the child in order to attain a better understanding of the drawing. This dialogue can be considered a new creation and should be treated as such, since new ideas that arise in the course of the conversation are the outcome of subject-subject contact and could differ under different conditions and with other researchers (Malchiodi 1998).

4. Individual attitude questionnaire– In order to obtain additional information about the children's attitudes towards their environment, we asked them to complete an individual attitude questionnaire (Table 3) consisting of 19 statements pertaining to
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their perception of the town as home and to their perception of the residents as active components in the social-ecological system. Following the literature, we included three categories of statements: (1) local-ecological attachment (knowledge and emotional attachment), (2) local-social attachment, and (3) involvement. The statements of the three categories were worded and derived from "sense of place" theory. The students were requested to rank their position on a 5-level Likert-type scale where 1= completely agree and 5= don't agree at all.

The information that was received through the four information sources (the observations, the drawings, the interviews, and the questionnaire), allowed us to compare the children's conceptions that arose from each tool and increased the validity of the conclusions.

Analysis of Findings

The phenomenographic approach describes various perceptions of a phenomenon, based on all the findings. These perceptions are formulated in a process that moves from the individual level to the general level. At times, it was difficult to determine to which category a certain drawing belonged since combinations of perceptions are possible. For example, children can feel attached to friends yet at the same time experience boredom and a lack of entertainment possibilities. When in doubt, we consulted with the environmental education teachers.

The categories of children’s perceptions of their place as home were defined using the following steps:

1. Extracting themes from drawings– Following Golomb (2004), who stated that every picture has a “theme,” and the phenomenographic method of Loughland and colleagues (2002) that used three parallel referees to determine the main theme, the first step in our interpretation was for three independent reviewers to classify the children’s drawings. The reviewers observed each of the drawings, described their components and the interactions that appeared in them, and then recorded the various themes that, in their opinion, arose from each drawing. Finally, by combining the reviewers’ impressions we categorized the themes for each child separately. The children’s explanations of their drawings assisted at this stage and the reviewers used them to determine the final outcome in cases of uncertainty or disagreement.

2. Content analysis- Conducting content analysis (Wetherell et al. 2001) of the children's personal interviews enabled us to extract verbal personal themes. The content analysis was conducted by one of the researchers, and the themes that arose were the subject of consultation with the reviewers until everyone reached full agreement. These themes were added to the characterization of each child. (See Appendix B for examples of statements from the interviews.)

3. Categorization- Category formulation was carried out by cross-checking the themes from the drawings with those that were extracted from the interviews, and comparing them with the categories that were formulated the previous year. In
some cases, the new findings required refining and enhancing the definition of the existing categories. In other cases we needed to define new categories.

4. Comparison- Classifying the children into the various categories enabled us to compare the two classes and to compare the students' perceptions from the previous year. This comparison was performed based on three tools: the drawings, interviews, and attitude questionnaire. In this process, greater weight was given to themes from the interviews and to scores from the attitude questionnaire because of the researchers' impression that some of the children found it difficult to express themselves through drawing, perhaps because their drawing ability had been subjected to criticism in the past. An additional limitation in relying on the drawings was the researchers' impression that some of the drawings were influenced by a model of a drawing of the town that the art teacher had imparted to her students.

**Results**

The atmosphere in the class that participated in the special program was characterized by a positive attitude towards the place. It appears that criticism about the place, even if it existed, did not usually occur during the class discourse, at least not in front of the teachers, and thus was not expressed overtly. Such criticism, however, did arise in the personal interviews, but only in a subtle way. For instance, one girl remarked that she did not understand what motivated her parents to come and live in the town. Some of the children addressed the lack of urban services (such as a mall), by saying things such as: “I don't want them to build stores and malls because it's more fun when we are not occupied with all that stuff. The shops cause people to be preoccupied with themselves and then they don't pay attention to other things” or “We don't need a mall because if we have to buy something, we can quickly go to the nearby city.” Apparently the question about shopping and entertainment places (as a mall is perceived among the teenagers in the town) troubled many of the children in both classes (the intervention and control group).

Interestingly, in the class that did not participate in the program, a completely different atmosphere prevailed. Children remarked out loud that in their opinion, “Mitzpe Ramon is a hole” and that “People shouldn't be persuaded to come and live here,” causing general laughter. It seemed that in this group it was popular, especially among the boys, to disparage the place.

**Categorization through Content Analysis**

Content analysis of the children’s drawings and interviews (Table 1) revealed numerous statements related to the perception of the place as home. In Table 1 (see also Appendix 2A, 2B), these statements appear to be divided into aspects that reinforce attachment to the place and aspects that weaken such attachment.
Table 1. Statements related to the perception of the place as home

A. Aspects that contribute to reinforcing attachment to the place

<table>
<thead>
<tr>
<th>Social</th>
<th>Attachment to friends and the family</th>
</tr>
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<tbody>
<tr>
<td></td>
<td>Appreciation of the community</td>
</tr>
<tr>
<td></td>
<td>Appreciation of the quiet nature of the town</td>
</tr>
<tr>
<td>Urban environment</td>
<td>Long-term acquaintance</td>
</tr>
<tr>
<td></td>
<td>A sense of security living in the town</td>
</tr>
<tr>
<td>Open landscape</td>
<td>Appreciation of the landscape as a source of beauty and inspiration</td>
</tr>
<tr>
<td></td>
<td>Appreciation of the landscape as a tourist attraction</td>
</tr>
<tr>
<td></td>
<td>Acquaintance with the environment</td>
</tr>
<tr>
<td></td>
<td>A sense of security in the open landscape</td>
</tr>
</tbody>
</table>

B. Aspects that weaken the attachment to the place

<table>
<thead>
<tr>
<th>Social factors</th>
<th>Lack of appreciation of the population</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Lack of urban elements leads to boredom.</td>
</tr>
<tr>
<td>Urban environment</td>
<td>The quiet is perceived as an irritating factor.</td>
</tr>
<tr>
<td></td>
<td>Lack of urban services and the distance are perceived as irritating factors.</td>
</tr>
<tr>
<td></td>
<td>The few educational possibilities are perceived as a factor that hinders personal development.</td>
</tr>
<tr>
<td>Open landscape</td>
<td>The open landscape is perceived as boring and lacking distinction – &quot;nothing special.&quot;</td>
</tr>
<tr>
<td></td>
<td>The climate is perceived as hostile.</td>
</tr>
<tr>
<td></td>
<td>Feelings of insecurity in the open landscape</td>
</tr>
</tbody>
</table>

The various statements from the interviews and the themes from the drawings were added to the information about students' perceptions of the settlement as home. In our classification of the various perceptions, we referred to the categories that were defined the previous year. At the same time, the new information led us to split the definition of the "Sitting Tenant" into three different categories— "Environmental-Social Resident"; Environmental Resident” and “Social resident”— and thus to a refined definition of the other categories.

The "Environmental-Social Resident"

The "Environmental-Social Resident" is someone who perceives the town and its environs as one combined unit. The town itself is perceived as a protective and safe place. The qualities of the landscape surrounding it are perceived as a source of artistic inspiration, tourism, and tranquility for the residents. For example, the mountains are perceived as open spaces that are a safe and pleasant place to walk. The “Environmental-Social Resident” perceives the climate as comfortable and appreciates the air quality. He or she is also aware of the biological and landscape diversity of the area and appreciates it. The other residents are considered “good people” who help each other and have a unique environmental consciousness. Interestingly, the lack of services (such as a mall) is perceived as a preferable alternative to a more urban place. The “Environmental-Social Resident” perceives
him- or herself as a capable person who must be involved in improving the town and protecting the environment. The drawings in this category were characterized by a positive appreciation of both the landscape and the built-up areas (Figure 1), which also characterized the statements in the interviews. In the attitude questionnaire, students in this category gave a high mark both to attitudes that expressed an appreciation of the landscape and to those that supported social involvement.

Figure 1. “The Environmental-Social Resident”—A collection of elements dealing with dwelling, as well as diverse landscape views

The “Environmental Resident”
The “Environmental Resident” is characterized by great appreciation of the landscape as a source of artistic inspiration and as a place where it is pleasant to live. As one of the girls phrased it, “Children who live here and are not familiar with the landscape can’t enjoy it, and they miss out.” Nature is also perceived as a source of tourism that should be preserved and protected against over-development. The “Environmental Resident” gives a high value to attitudes that support activities promoting the environment. At the same time, the society in the town is not appreciated, and it is perceived as a “tolerable evil.” For instance, children in this category expressed themselves through the statement: “I feel comfortable living here because there are not many people here.” The drawings in this category were mainly drawings of an open landscape with few urban elements (Figure 2). The perception of the “place as home” was manifested mainly in the interviews and in the attitude questionnaire.
Figure 2. “The Environmental Resident”—The emphasis in this drawing is on the landscape view and its influence on the citizens. Note the two players and the caption about the calm atmosphere inspired by nature. The town itself is not shown.

The “Social Resident”
The “place as home” is perceived by the “Social Resident” as within the limits of the town’s built-up area. The “Social Resident” is aware of the diversity of individuals here and appreciates the pleasant and protective society in the town. There is a feeling of a “good life” among friends and within the family. The town is perceived as a source of tranquility and of personal safety (“there are no bombs”; “there is little crime;” “everyone knows everyone else”). The “Social Residents” feel that they know the town well and that it feels safe to walk around within its limits. The open landscape, on the other hand, is perceived as threatening and as holding within it unknown dangers. However, the “Social Residents” may recognize the spiritual or tourist potential of the open landscape, but it is not part of their perception of home. The drawings in this category focused on public buildings and residential homes, and contained almost no landscape elements (Figure 3). In the attitude questionnaire, the children in this category assigned a high value to involvement in the town life and responsibility for improving it. At the same time, they tended to agree with statements that expressed fear and lack of appreciation of the landscape.
Figure 3. “The Social Resident”—The focus in this drawing is on dwelling. Note the house, which is detached from any context. According to our interpretation, various individuals indicate that it is fun to live in Mitzpe Ramon and how wonderful it is that they "moved to live here.”

The Lodger
The lodger lives in the town as though it is a temporary stop in life. Lodgers may appreciate the qualities of the environment, the town, and the role of society in the place, but they attribute great weight to the disadvantage of residing in the town and they do not perceive themselves as people who are responsible for it or who can act to change the place for the better. Great weight is given to the lack of urban services and places of entertainment, and thus the children in this category do not see themselves as living in the town for the long term. The quietness that characterizes the place is perceived as a factor that may sometimes irritate them, but it is also a factor that may attract “other” people to the place. They remark, for example, that: “anybody who wants quiet in his life should come to Mitzpe Ramon” or “almost all the tourists who come here come because of the makhtesh, and perhaps they’ll want to stay.” Their drawings are characterized by very few landscape elements, the lack of people and almost no sign of life. The only buildings that appear in their drawings are public buildings or a water tower. Residential buildings are completely absent from the drawings in this category (Figure 4).
Figure 4. “The Lodger”—The town is symbolized by the water tower and the title “Mitzpe-Ramon” hangs above the deserted view.

The Tourist
“The Tourist” perceives the place as a spot with an impressive landscape that has many desert-type tourist attractions. The open landscape is appreciated, but at the same time it is also perceived as threatening one’s personal safety. The people in the place may be perceived as “nice” but usually not as “friends.” In the attitude questionnaire, the statement regarding attachment to the town received an especially low mark from these children. The drawings in this category are characterized by a detailed depiction of the scenery and touristy elements; they completely lack elements associated with residing (Figure 5). “The Tourist” does not feel responsible for improving the place.

Figure 5. “The Tourist”—The drawing is rich in tourist attractions located around the cliff. The town is not shown.
Developing a Perception of a Place as Home

The Prisoner in His Own Home
The perception of the place that characterizes this category is that of a small town, lacking basic services, far from any urban center. The place is perceived as preventing or delaying one's personal development. The quiet in the town is perceived as an annoying factor and the climate is perceived as hostile (e.g., “burning sun”). The open landscape for the “Prisoner in His Own Home” is not perceived as possessing unique qualities (“it's just a place”), and the surrounding nature is not perceived as part of the home. Instead, the open landscape is usually perceived as a threatening place and as reinforcing the student’s sense of loneliness and detachment. “The Prisoner in His Own Home” does not usually appreciate the town's social circle (“The people here are only ‘kind of nice’” or “The people here gossip a lot”) or have any desire or ability to improve the place. Some of the children in this category expressed insecurity even within the town limits. In the attitude questionnaire, students gave a high value to statements that support leaving town, and a low value to attachment to the place. The drawings from this category focused on the built-up areas of town and did not include elements of landscape or people. Usually the town was merely outlined, and the general impression was of emptiness. This negative attitude is also manifested in headlines and symbols (Figure 6).

Figure 6. “The Prisoner in His Own Home”—The football field and the swimming pool dominate this drawing. “These are the things I like to do,” the child says. However, he wrote right in the middle of the pool: “Mitzpe-Ramon is a big hole.”

Individual Student Changes between Years One and Two
Since we had data about the intervention group students' conceptions from the previous study, we were able to make a comparison and track changes throughout the two years. (The comparison group did not participate in the previous research and therefore we could not make such a comparison for this group.) Significant
differences can be seen in the drawings, interviews, and attitudes, compared with 
the previous year (Table 2). The drawings in the current study were characterized 
by more symbols and less realistic drawings than the previous year. In the previous 
study, few people appeared in the drawings, and most of them stood motionless in 
the landscape. However, in the current study's drawings, more people appear and 
many of them seem to be living there (inside the houses). The built-up part of town 
covers more space in relation to the open landscape. In addition, the drawings 
reveal much more interaction with the environment, both quantitative and 
qualitative, such as hikes, sports, music, shelters against the weather, residents, 
the Bedouins, and youth activity. In the interviews, a more detailed acquaintance 
with the landscape was apparent (1 and 4 in Table 2), as well as a more critical and 
 rational point of view (1, 2, and 3 in Table 2). Some of the children expressed more 
confidence regarding the landscape (for instance, 6 in Table 2), and more social 
involvement (5 in Table 2).

Table 2. Comparison of specific children’s interviews from 2006 and 2007

<table>
<thead>
<tr>
<th>Student 1:</th>
<th>2006</th>
<th>2007</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><strong>Definite social perception:</strong> I try to show that Mitzpe Ramon is a good</td>
<td><strong>Environmental-social perception:</strong> Some of the things I drew in symbols: the place with the bench and the tree symbolize the tranquility and quiet here, and I like that. The two girls talking symbolize the fact that everyone knows each other. The deer symbolizes a lot of deer that roam free, and it's nice because you don't see that in other places, and it also symbolizes that we treat the animals and the environment differently than people do in other places. I don't want more shops and malls; it's better that we don't deal with all that stuff. Shops lead people to be occupied with themselves and then they don't pay attention to other things. I love Mitzpe Ramon very much and I don't want to move away.</td>
</tr>
<tr>
<td></td>
<td>and pleasant place to live in, and that the air is good and the view is pretty. This place is very attractive to me and I want to know a lot about it; there are a lot of interesting historical facts about it. Every time I walk down the street, I think: When was it built? I am familiar with Mitzpe and I can't get lost in it. It's good that it's a small place and it's not necessary to expand it. It should stay this way.</td>
<td></td>
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<table>
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<tr>
<th>Student 2:</th>
<th>2006</th>
<th>2007</th>
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<tbody>
<tr>
<td></td>
<td><strong>Definite social perception:</strong> Mitzpe Ramon is a quiet town and everyone knows everyone else and you don't become confused. The children can play.</td>
<td><strong>Environmental-social perception:</strong> The idea for the drawing is from a trip that my uncle took me on, to the Makhtesh, and we saw beautiful things. It was the first time I ever saw these things. There was a lake surrounded by colored sand that you can fill a bottle with. To me it's a place where you can live, not just to visit during holidays.</td>
</tr>
</tbody>
</table>

Another example of the same transition. Here it shows the development of an awareness of the environment.
Student 3: In the second year the child has a better acquaintance with the environment.

<table>
<thead>
<tr>
<th>2006</th>
<th>2007</th>
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</thead>
<tbody>
<tr>
<td><strong>A tendency towards environmental perception in both years:</strong></td>
<td><strong>I drew the view of the (Makhtesh) Ramon from the observation terrace—the cliff. There are a few rivers and mountains missing. For instance, in Be’er Sheva you have to get out of town in order to see the view. Here you only have to cross the road. It’s good because that way people know the environment in which they live and where all their friends are. I’m attached to this place because I like nature and I love walking around and for me the desert is an amazing place; it’s natural. It’s something that is man-made.</strong></td>
</tr>
<tr>
<td>Mitzpe Ramon for me is like an open house where you can walk around and do everything. And there are a lot of animals that you can play with and the view is very pretty – green and a little bit isolated. It’s great to be here and everyone has a lot of friends and knows everyone else and there are playgrounds you can play in.</td>
<td></td>
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</tbody>
</table>

Student 4: There are initial signs of social appreciation.

<table>
<thead>
<tr>
<th>2006</th>
<th>2007</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Basically, the environmental perception remained steady:</strong></td>
<td><strong>I drew two people playing a flute in the middle of the desert. The flutists are in the mountains that have the best atmosphere and they feel really good, and the sounds reach the town. I feel attached to the place because of the clean air and the wind that blows. I also feel attached to the town and to the people. I drew birds down in the Makhtesh because the air there is better and there’s wind.</strong></td>
</tr>
<tr>
<td>I drew a woman who comes to visit in Mitzpe Ramon and she’s saying: Wow, I should live here. There are beautiful things here. I think she really likes this place. Her two family members stayed in the car because they’re afraid of the deer, but in any case she’s taking photographs. I think that she will manage to persuade them anyway because I’m also afraid and yet I live here.</td>
<td></td>
</tr>
</tbody>
</table>

Student 5

<table>
<thead>
<tr>
<th>2006</th>
<th>2007</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>”The prisoner in his own home” who does not appreciate the society and the environment:</strong></td>
<td><strong>Towards social perception: with the first signs of an awareness and appreciation of the environment</strong></td>
</tr>
<tr>
<td>I drew the road out of town, to Be’er Sheva, and the sign that stands there. I painted it all in blue because in science they explained that the sky is everywhere, and you don’t need earth because there’s a road here.</td>
<td>I drew the water tower and painted it glowing like it is at night. I didn’t make it nighttime (I didn’t color it black) because of the (internal) road. I drew pavement because there’s pavement with an irrigation ditch next to every road. In Mitzpe Ramon there are many beautiful things and there’s the desert (which I didn’t have enough space to draw). I drew the youth-movement club because that’s the place with the most fun activity.</td>
</tr>
</tbody>
</table>

In the interviews, the weight students gave to coping with the absence of a mall and the need for entertainment places for youth increased between the first and second years. The most significant change in terms of students’ attachment to the place occurred regarding the children who felt that they could exert a positive impact on daily life in the town, manifested in their desire to improve the situation.
However, this change was revealed indirectly, for example, in the use of more active verbs in the interviews, in words that referred to the issue directly, and in giving greater weight to questionnaire statements that referred to the residents' responsibility and to their ability to act to improve the environment (see Table 3).

Table 3. Place attitudes of pupils from the intervention (N=24) and comparison groups (N=17)

<table>
<thead>
<tr>
<th>Sphere</th>
<th>Attitude</th>
<th>Intervention group</th>
<th>Comparison group</th>
<th>T</th>
</tr>
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<tbody>
<tr>
<td></td>
<td></td>
<td>Mean</td>
<td>SD</td>
<td>Mean</td>
</tr>
<tr>
<td>Local-ecological attachment</td>
<td>I feel safe walking around in the mountains surrounding my town.</td>
<td>1.96</td>
<td>1.02</td>
<td>3.11</td>
</tr>
<tr>
<td></td>
<td>Walking around in the mountains surrounding the town is dangerous.</td>
<td>3.04</td>
<td>1.24</td>
<td>3.0</td>
</tr>
<tr>
<td></td>
<td>I love the view near my town.</td>
<td>1.46</td>
<td>0.78</td>
<td>2.39</td>
</tr>
<tr>
<td></td>
<td>The view near my town is boring.</td>
<td>4.48</td>
<td>1.08</td>
<td>3.33</td>
</tr>
<tr>
<td></td>
<td>I am familiar with most of the plants and animals in my area.</td>
<td>2.32</td>
<td>1.34</td>
<td>2.0</td>
</tr>
<tr>
<td>Local-social attachment</td>
<td>I feel attached to my town.</td>
<td>1.32</td>
<td>0.56</td>
<td>2.5</td>
</tr>
<tr>
<td></td>
<td>Life in my town is very good.</td>
<td>1.32</td>
<td>0.63</td>
<td>2.5</td>
</tr>
<tr>
<td></td>
<td>There are a lot of good things in my town.</td>
<td>1.5</td>
<td>0.83</td>
<td>2.72</td>
</tr>
<tr>
<td></td>
<td>Life in my town is very difficult.</td>
<td>4.24</td>
<td>1.16</td>
<td>3.83</td>
</tr>
<tr>
<td></td>
<td>I want to stay in my town when I grow up.</td>
<td>2.16</td>
<td>1.37</td>
<td>3.56</td>
</tr>
<tr>
<td></td>
<td>The minute I can, I'll move somewhere else.</td>
<td>3.6</td>
<td>1.58</td>
<td>2.44</td>
</tr>
<tr>
<td>Involvement</td>
<td>Only the municipality is responsible for improving the quality of life in the town.</td>
<td>3.84</td>
<td>1.28</td>
<td>3.33</td>
</tr>
<tr>
<td></td>
<td>The town people should improve their town by themselves.</td>
<td>2.4</td>
<td>1.32</td>
<td>2.83</td>
</tr>
<tr>
<td></td>
<td>Only the municipality should decide how to develop the town.</td>
<td>4.32</td>
<td>1.11</td>
<td>4.28</td>
</tr>
<tr>
<td></td>
<td>Only the grownups should decide how to develop the town.</td>
<td>4.4</td>
<td>1.15</td>
<td>4.0</td>
</tr>
<tr>
<td></td>
<td>Everyone can contribute to improving the place in which they live.</td>
<td>1.28</td>
<td>0.74</td>
<td>1.94</td>
</tr>
</tbody>
</table>
Developing a Perception of a Place as Home

I want to be involved in decisions about how to develop the town.

<table>
<thead>
<tr>
<th></th>
<th>2.21</th>
<th>1.28</th>
<th>2.31</th>
<th>1.89</th>
<th>-0.21</th>
</tr>
</thead>
</table>

I want to contribute and do things to make the town a better place in which to live.

<table>
<thead>
<tr>
<th></th>
<th>1.68</th>
<th>0.99</th>
<th>2.67</th>
<th>1.78</th>
<th>-2.32*</th>
</tr>
</thead>
</table>

I can't change anything in the town.

<table>
<thead>
<tr>
<th></th>
<th>4</th>
<th>1.22</th>
<th>3.61</th>
<th>1.54</th>
<th>0.92</th>
</tr>
</thead>
</table>

Note: The statements of the three categories in the individual attitude questionnaire were worded and derived from the Sense of Place theory.

1 – Completely agree; 5 – Don't agree at all  *p<0.05; **p<0.01

Comparison between Intervention and Control Groups

Perception of the Place as Home

Significant differences were found between the two classes’ drawings (Figure 7). More specifically, the drawings from the intervention class contained many people inside or beside houses, i.e., in dwelling situations, as well as animals and interactions with the environment. On the other hand, only two of the drawings from the other class included human beings, one in each drawing, and neither of them was in a dwelling situation. Considerable distinction was found in the divergence of the categories between the two groups. More than 30 percent of the students in the intervention group were categorized as “Environmental-Social Residents,” as opposed to none of the students from the control group. Further, the “Environmental Resident” category was significantly larger in the intervention group than the control group. On the other hand, almost 40 percent of the students from the control group were ranked as “Prisoner in His Own Home” but none of the students from the intervention group was categorized this way. In addition, the “Social Resident” category was larger in the control group.

Figure 7. Perceptions of the place as home. Intervention group: N=24; comparison (control) group: N=17
Place Attitudes
A significant difference was found between the two groups regarding the students' attitudes towards the natural environment, towards the society in which they live, and in relation to themselves as being capable and willing to participate actively in improving the town (see Table 3).

According to the findings from the attitude questionnaire, students from both groups felt they were familiar with the landscape around the town and appreciated it. However, the intervention group expressed slightly more confidence regarding walking alone in the open landscape. The most significant differences between the two groups were found in relation to the “local-social attachment” category (Table 3). Students from the intervention group expressed more appreciation of and satisfaction with their town and a greater willingness to continue living there. These points are even more valuable since our findings from interviews in the previous study (Avriel-Avni et al., forthcoming) indicated that young adolescents start to become cynical and doubt that their little desert town can ever satisfy all their needs and enable them to achieve their goals.

It is encouraging that students from both groups expressed positive attitudes towards the involvement of adults and children in improving life in their town. Such attitudes are aligned with the approach of environmental citizenship. However, the statement in the individual attitude questionnaire: “I want to contribute and do things to make the town a better place to live in” showed a significant difference between the two groups regarding their willingness to act. However, it is important to emphasize that the students from the intervention group, although willing to act, still expressed doubt about their ability as young children to undertake such a responsibility and to make decisions at the level of managing the town—which is a realistic reservation.

Discussion
In this paper we have presented a method of characterizing the perception of a dwelling place or place of residence as home. This “settlement as home,” in the full sense of the words, refers to a place for which we feel responsible and engaged, in terms of building, nurturing, and preservation, through deep acquaintance with the place’s natural and human components and through an understanding of ourselves as part of a continuity of generations (Heidegger 1977). Such a perception regards people and their environment as a mutual system, and recognizes people’s dependence on environmental resources as well as their responsibility for wise management of ecosystems so that they can continue to exist in the long term (Berkowitz et al. 2005).

“Education for sustainable development” places its hope on nurturing global environmental responsibility through local responsibility (Vorkinn and Reise 2001; UNESCO 2005; Szerszynski 2006). In this context, it should be borne in mind that a modern city distances its residents from the ecosystems that provide their resources (Rees 2003). This situation may become more extreme in peripheral settlements, which are far away from their supply sources. The absence of suitable means for engaging the public in managing the environment (both developed and
undeveloped open spaces), which characterizes modern cities and representational democracies, may also prevent residents from taking responsibility for their environment (Harrison and Burgess 2003). In the case of communities that are close to nature preserves, this includes a lack of responsibility towards maintaining the open spaces and refraining from including the wilds in what residents perceive as home.

The various categories of perceiving Mitzpe Ramon as home revealed by this study are characterized by various viewpoints regarding the town and the open areas surrounding it, each of which gives different weight to elements of the human and natural environment. “The Social Resident” views the town as it is, ignoring the wild landscape surrounding it. This viewpoint may be the result of modern children’s tendency to spend most of their time at home (Jones and Cunningham 1999; Dallago et al. 2009; Jack 2010) and the fear of the outer environment (Jack 2010) that was reflected in many cases in our research. At the same time, ignoring the wilderness precludes obtaining those benefits that accompany an appreciation of the landscape. From the viewpoint of protecting the environment, such a perception does not encourage responsibility for protecting natural resources (Brehm et al. 2006). “The Environmental Resident,” on the other hand, gazes outwards and derives less pleasure from his connection to the community and from the benefits of sharing inherent in social ties. This trend is further reinforced in “The Tourist” who does not appreciate the sense of personal security that the remoteness from the political conflict provides and the direct connection to the landscape and to the community. “The Lodger” and “The Prisoner in His Own Home” mainly experience the great distance between the town and centers of culture, education, and entertainment. These feelings are amplified in children, considering their low mobility (Dallago et al. 2009). These feelings could also have a great influence on their place attachment and therefore on their healthy development (Marcus 1992).

The lack of a sense of attachment supports a sense of demographic instability, which may further reinforce the children's dissatisfaction with the town (Hay 1998). The wild landscape, which attracts tourists from all over the world, is perceived by the children in the “Prisoner in His Own Home” category as “just a backdrop,” as one of the children put it, like a two-dimensional set on a stage; it does not have any depth nor carry any significance for them.

The open landscape surrounding the town may be the preferred playground (Jones and Cunningham 1999) and a source of a sense of space and liberation, once the children are sufficiently familiar with it to feel safe when they leave the boundaries of the built-up area (Dallago et al. 2009). A sense of insecurity in roaming around the open landscape, which characterizes “The Social Resident,” “The Lodger” and “The Prisoner in His Own Home” perceptions, may lead the children to perceive the open spaces as "walls closing in on the town" and may reinforce their feeling of the town as a prison. This is also the case regarding the community and its social services. The children in these categories mainly assign more value to its deficiencies.
However, we do not contend that the need for places of entertainment and a variety of possibilities for personal development, felt by adolescents in peripheral settlements, should be belittled. These needs are indeed a matter that community leaders should take into consideration and for which they should seek local and regional solutions. The harsh feelings that many children harbor towards their place as home can have a deleterious effect on the healthy development of their self identity (Marcus 1992; Dallago et al. 2009). This subject merits further research. At the same time, environmental education can help the children appreciate the qualities of the environment. Doing so could reinforce their attachment to the place and improve their chances of healthy development.

Daily or periodical contact with a place is an essential condition for maintaining a sense of place, otherwise the relations take on a nostalgic nature (Hay 1998). Field trips within the natural and the human environment may foster a sense of security that would encourage the children to freely move around the town and its surroundings, contributing to their appreciation of the open landscape (Orr 1992). The existence of “The Tourist” perception in the comparison group demonstrates this effect, especially when compared to socioeconomically parallel groups that do not participate in field trips (Avriel-Avni et al. 2010). Nonetheless, this landscape appreciation was not accompanied by attachment to the place. The two modules that were implemented in Mitzpe Ramon emphasized the importance of environmental involvement and activities (Tuan 1977; Marcus 1992; Derr 2002; Chawla 2009; Morgan 2010; Jack 2010) for nurturing the system-oriented viewpoint of the “Social-Environmental Resident,” the perception we interpret as a real dweller.

Evaluation of the influence of the two educational modules on the sense of place was made only at the end of the year so we can only guess the exclusive contribution of each. At the same time, the use of the three research tools (drawings, personal interviews, and an attitude questionnaire), along with informal observations, made it possible to obtain a reliable picture of the children's perceptions. Possibly the most significant change that took place in the intervention class was a change in discourse to a more positive view of the town. As a result, children who perhaps still feel some cynicism towards the town may have refrained from fully expressing their attitudes. In the comparison group, the popular discourse was to express cynical attitudes towards the town, and perhaps children who felt otherwise were discouraged from openly expressing their opinions in class.

Based on the deviation in perception between the intervention and the control groups, it is reasonable to claim that among the students from the intervention group, a feeling of attachment towards the town and its surroundings developed. This claim is reflected in the fact that more than 55 percent of the members of this group were categorized as having place attachment (“Environment-Social,” “Environmental” and Social” residents), but none of them were categorized as “Prisoner in His Own Home.” However, this was the main category in the control group, representing almost 40 percent of the students.
When the children took part in rehabilitating the archeological site (dating 1600 years ago), they were encouraged to perceive the town as a *continuity of generations*. The work children did in the wild created situations where they directly encountered animals (especially poisonous creatures that live under rocks in the desert), and therefore they adopted risk-prevention strategies that increased the children's sense of security. When children gave names to natural elements in their environment, it strengthened their bond with the land (Basso 1994). The “Green Map” module, in which the children mapped the ecosystem services in the town and conceived goals for improving the town's environmental friendliness, encouraged them to change their point of view from passive to active citizenship. Both modules, in their activist aspects, increased the value of the place in children's view as “a place where you can do things”—i.e., not just a pretty view (Chawla 1992; Marcus 1992; Derr 2002; Morgan 2010). Their willingness to be active and involved in improving the town, as deduced from the questionnaires and the interviews, reflects their progress as environmental citizens.

Education for maintaining sustainable development is a challenge. Its values are directed towards achieving cooperation and solidarity, long-term thinking, adapting consumption to individual needs, etc. These values are often contrary to the values of modern Western society. The reality in peripheral settlements presents additional challenges. The dearth of cultural events and options for leisure activities makes it difficult for talented adolescents who seek such experiences. Consequently, they may feel frustration towards their place of residence and thus develop a weak sense of *place*. Furthermore, parents who regard the town as a temporary home or others who feel anxiety about the open landscape probably subconsciously pass on to their children signals that are contradictory to those that environmental educators wish to nurture. All these phenomena increase the challenges that educators from Mitzpe Ramon and similar places around the world face in their efforts to improve the situation. However, a change for the better was indicated in this research, which raises hope that meeting this challenge is feasible.

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**Dr. Michal Zion** holds a doctorate in molecular biology; she is a member of the M.A. Committee and a coordinator of the Science Education Program and the Biology Teaching Program at the School of Education, Bar-Ilan University.

**Dr. Ornit Spektor-Levy** is the head of the National Teachers' Center for Scientific Literacy in Pre-School. She explores ways to enhance students' abilities and how they can become science literate. She studies technology integration, gender issues, and the development of environmental citizenship.
References


Appendix 1. Semi-Structured Interview Protocol

The interviews took place in a small room adjacent to the classroom—right after the children finished their drawings. The homeroom teacher assisted by sending one child at a time to be interviewed.

During the interviews, the children's drawings were in front of them. In the first part of the interview, the child was encouraged to give an interpretation of the drawing by answering the question: “Please tell me what you drew here?” When necessary, we added questions of clarification such as: “What do you mean by that?” or: “What is this?”

In some cases the children initiated a short conversation about some detail or idea in the drawing and the interviewer followed this closely.

The second part included questions that were derived from the theory of Place Attachment:

- How do you feel about living in this town?
- How do you feel about wandering in the hills around the town?
- Do you feel safe when you travel out of town?
- Do you feel you know the area around the town well?
- What do you think about taking part in town activities to improve your town?
### Appendix 2. Examples of Statements from the Interviews

#### A. Themes of positive perception of the place

<table>
<thead>
<tr>
<th>Positive attachment to the place/ Perception of the place as home</th>
<th>Examples of statements from the interviews</th>
</tr>
</thead>
</table>
| Attachment to friends and the family                            | • I’m attached to the place because I have a lot of friends here.  
|                                                                 | • I like Mitzpe Ramon because I have a lot of friends and relatives here. |
| Appreciation of the community                                   | • The people here are good and they help each other.  
|                                                                 | • There are a lot of good people here, and there are not a lot of criminals.  
|                                                                 | • I feel connected both to the town and to the people. |
| Appreciation of the residents as possessing environmental awareness | • We relate to the animals and to the environment, not like in other places.  
|                                                                 | • Every time it rains, we’re excited because it’s something special. |
| A sense of social and environmental involvement                 | • There’s quiet, it’s a little bit disturbing, but we organize parties and that’s really nice.  
|                                                                 | • I think that children can do a lot to improve the town.  
|                                                                 | • I feel that I must protect the place. |
| Long-term acquaintance                                          | • I feel connected to the place because I was born here and I’ve gotten used to it.  
|                                                                 | • I feel connected to the place because I was born and raised here and I know the mountains like I know the palm of my hand. |
| Appreciation of the landscape as a source of beauty and inspiration | • The desert is an amazing thing, it's nature, it's not something that humans made.  
|                                                                 | • Mitzpe Ramon, the Makhtesh, and the Bedouins – that will make people come here.  
|                                                                 | • There's a lot of sky. The sky reaches the mountains. I touch the sky.  
|                                                                 | • There's a pleasant atmosphere in the mountains surrounding the town.  
|                                                                 | • The mountains are colorful and that symbolizes the sunrise, colors of happiness, of the desert, of fire. It's as if the sun rises on all this happiness.  
|                                                                 | • I'm attached to this place because I love nature and I like to hike. |
| Appreciation of the landscape as an opportunity for tourism/ a tourist attraction | • People should come live here, because then they'll have this (tourist attractions and holidays) all their life. |
| Appreciation of the quiet nature of the town                    | • I love the quiet and calm and the wonderful atmosphere in Mitzpe Ramon.  
|                                                                 | • Anyone who wants quiet in his life should come to Mitzpe. |
| Human and environment                                           | • Ibexes run around freely and it's fun, because you can't see that in other places. |
### Acquaintance with the environment
- It's not true that there are no plants. There are a lot of special flowers in the desert.

### A sense of security within the town
- Mitzpe Ramon is a small town, everything is close, and there aren't a lot of things that can hurt you. I know a lot of people here and there is no reason to worry.
- At least here no bombs will fall on you. There are no wars here.

### A sense of security in the open landscape
- It is safe to walk around in the mountains and in the Makhtesh, except for the fact that there's a tiger here and it frightens me a little.
- It is safe to walk around in the mountains around here and I can go anywhere by myself.

### Appreciation of the urban environmental quality
- The sky is clean and there are no polluting factories. There's no poisonous air from factories.
- The air here is healthy and there's a pleasant breeze. The sun is warm and that feels good.

### B. Themes with a negative perception of the place

#### Negative attachment to the place and negation of the place as home

<table>
<thead>
<tr>
<th>Lack of appreciation of the population</th>
<th>Examples of statements</th>
</tr>
</thead>
<tbody>
<tr>
<td>I don’t like the people in Mitzpe Ramon so much, because they gossip a lot.</td>
<td></td>
</tr>
<tr>
<td>The people here are &quot;kind of nice.&quot;</td>
<td></td>
</tr>
<tr>
<td>I forgot to draw people.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>The quiet is perceived as an irritating factor.</th>
<th>Examples of statements</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sometimes we want to go to noisy places.</td>
<td></td>
</tr>
<tr>
<td>My mother likes the peace and quiet, but I miss the noise, like in Tel-Aviv.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Lack of urban elements leads to boredom.</th>
<th>Examples of statements</th>
</tr>
</thead>
<tbody>
<tr>
<td>There's nothing to do here, no mall.</td>
<td></td>
</tr>
<tr>
<td>I miss the city—a place with clubs, bowling, and malls.</td>
<td></td>
</tr>
<tr>
<td>The only thing you can do in Mitzpe is eat.</td>
<td></td>
</tr>
<tr>
<td>We need hotels and something fun.</td>
<td></td>
</tr>
<tr>
<td>Mitzpe Ramon is &quot;one big hole&quot; (i.e., the boondocks, the sticks).</td>
<td></td>
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</table>

<table>
<thead>
<tr>
<th>Lack of urban services and distance as irritating factors</th>
<th>Examples of statements</th>
</tr>
</thead>
<tbody>
<tr>
<td>The roads here have potholes that nobody takes care of.</td>
<td></td>
</tr>
<tr>
<td>There's no mall, so we go to the town Be'er Sheva to buy things.</td>
<td></td>
</tr>
<tr>
<td>I like living here, but I want to move somewhere else because we lack many things—hotels, places of entertainment.</td>
<td></td>
</tr>
<tr>
<td>The green road is the road to Be'er Sheva, so that everyone will know where to go.</td>
<td></td>
</tr>
<tr>
<td>I put a satellite dish on every building, so that people wouldn't feel isolated.</td>
<td></td>
</tr>
<tr>
<td>There are not enough places to shop and to fill the gas tank of your car, so you have to drive to Be'er Sheva or to Eilat.</td>
<td></td>
</tr>
<tr>
<td>I would like it more if there was a mall here and</td>
<td></td>
</tr>
</tbody>
</table>
you wouldn’t have to travel so far to go shopping.

| Few educational possibilities, perceived as a factor that hinders personal development | • It's a place where if children want to dance or to sing, they can't develop their talent.  
• The school here is really small. The education here is poor.  
• The only thing you can do here is go to school, go back home, go to afternoon classes, and back home again. |
|---|---|
| The open landscape is perceived as boring and being "nothing special" | • It's just a site.  
• The heat I drew is the Negev desert; I added the grass so it would be pretty. |
| Insecurity in the open landscape | • I don't feel it’s safe to walk around in the mountains, because there are Arabs and because you can fall down and die. There are also lions, scorpions, and snakes and it's frightening.  
• There're animals here—deer and snakes and scorpions and it's a little bit dangerous.  
• I'm afraid of lizards and small animals.  
• I am scared to walk around in the mountains. Someone could kill me and no one would help me and there are tigers in Mitzpe and if someone gets lost, there's no way he'll get out alive. |
| The climate is perceived as hostile | • I drew the sun because it's hot here and sometimes there's too much sun.  
• The sun is too strong and it burns us. |