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The landscapes that Finnish children and adolescents want to conserve – a study of pupils' drawings in Basic Education

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Abstract: A landscape is an experienced environment, which can be perceived by senses and feelings or through cognition processes. The background hypotheses of this study comprise the idea that the landscape which somebody would like to conserve is, in one way or another, important and valuable to her or him. The person undoubtedly has positive experiences and images of this environment. The present study used students' drawings to analyze their conceptions of the landscape. The conceptions differ both in content and in quality and they are dependent on age and experiences. The aim of this study was to analyze the drawings of a group of Finnish pupils (N=324) in basic education to find out the landscape they would like to conserve and to find out their relation to the environment. Pupils from grades 1-2, 5-6 and 8-9 participated. The results show that the nature landscape was the most common one in all age groups. In the nature landscapes the following issues were usually present: vegetation, especially trees, often also flowers (in girls' drawings), water elements, the sky and the sun. Furthermore, dominating contents in the nature landscapes were water elements, like creeks, rivers, small lakes, lakes or the sea. Many of the nature drawings contained forest. One third of the landscapes represented a built environment, the so-called cultural landscape, where the nature landscape had been more or less changed by human activity. The number of these built landscapes did not vary markedly between the three age groups. The third of the main categories, a landscape where human beings were physically present in the landscapes, was the most infrequent and was relatively most often drawn by pupils in grades 5-6. The boys valued more landscapes modified by human activity compared to the landscapes valued by girls. In conclusion: the landscapes in the drawings of these Finnish pupils in basic education were strongly connected to the nature and this result is in line to the original Finnish definition of the landscape.

KEYWORDS: BUILT ENVIRONMENT, DRAWING DEVELOPMENT IN PUPILS, FINNISH PUPIL'S DRAWINGS, LANDSCAPE, NATURE, SOCIAL ENVIRONMENT

Introduction

The socio-cultural environments of children and adolescents are different today than 20 or 30 years ago. Agrarian environments like field landscapes are vanishing also in Finland. More and more children live in cities or city-like countryside. According to international studies (Hart 1997; Linden 2000; White 2004), there are cultures and environments in which children spend their time indoors; outdoor games hardly exist. The mental pictures of these children are greatly influenced by cartoons or by landscapes that they see in the social media. These children grow away from nature, while being influenced by mediated experiences via spoken, written and visual materials. Matthews and Limb (1999) examined children's knowledge and understanding of geography, and emphasized the importance of children's relationship to their physical and built environment outside home, school and playground. A thing influencing child's opportunity to experience his/hers neighbourhood is parents' anxiety for their children's free movement in the environment and the consequences of the parents' concern, which has often been deemed unnecessary, for their children's well-being in modern society. The opportunity to freely explore the living environment is, however, essentially important for the development of a child and gives him/her the keys to understand the predominant order of the nature and society (Louv 2005). A study of how children and adolescents experience the world and their immediate environment showed that both valued the nature environment, nature landscapes and also the places for physical exercise, as well as places where it is possible to spend time with friends (Kaivola and Rikkinen 2003). Loughland and others (2002), in their phenomenographical analyses, describe adolescents' conceptions of their environment. The conceptions are partly a description of the object and partly wider descriptions of the relationship of man with his environment.

Landscape research has connections to environmental psychology and human geography. The understanding of the nature and built environment was for years an essential research focus among environmental psychologists, whereas nowadays the main study focus is the synergy of the physical and social environment (Horelli 1982, 23; Aura, Horelli & Korpela 1997). The definition of the relationship between man and environment is considered the main focus in human geography, the question of an experienced place, which has a meaning as a place where knowledge has been created and with which feelings are associated (Haarni et al. 1997; Beneker et al. 2010).

The aim of this study is to characterize the environmental values of a group of Finnish pupils (7–16 year-olds) in basic education by analyzing landscapes drawn by them. How do they comprehend the landscape which they want to conserve? Another focus is how landscape drawings vary according to age and gender. The study includes phenomenographical features, since it describes phenomena, i.e., the conceptions of the landscape that the pupils want to conserve (Marton 1981; Ahonen 1994).

Basic Education in Finland

Basic education in Finland consists of a free nine-year general education provided in basic education schools for the whole age group and a one-year pre-primary education preceding the basic education. Every child starts basic education in the year when s/he turns seven. According to the Finnish national curriculum

the main purpose of education is to support pupils' growth into humanity and into ethically responsible membership of the society and to provide them with knowledge and skills needed in life. Education shall promote civilization and equality in the society and pupils' ability for participating in education and otherwise developing themselves during their lives. Among other school subjects, biology, geography, social studies, visual arts and environmental education are taught in basic education.

Environmental education is introduced as a cross-curricular theme in Finnish basic education in every grade. (Grunderna för läroplanen för den grundläggande utbildningen 2004). The basis of education lies in Finnish culture. Formal school instruction purports to support the children to accomplish their cultural identity and to understand their relationship to the Finnish society and to the globalizing world. Education is provided in neighbourhood schools or other suitable places which make school travel as short and safe as possible (Organisation of the education system in Finland 2009/2010).

The landscape

The landscape is a relatively wide environment, perceived by the use of various senses. When defining this concept, several aspects can be incorporated like idealism, landscape of science or landscape of research which connects separate sciences. It is obvious that the different concepts of the landscape reflect the proposer's education.

The geographical classification of Finnish landscapes started from J. G. Granö's investigations (Granö 1932). He wrote

"The Finnish landscape is a special kind of a landscape, because nowhere else in the world but Finland, it is possible to see such a landscape with alternating scene of land and lakes on a long distance outlook".

His definition of this long distance landscape - a visual landscape – has been the basis for the definitions of the Finnish landscape for many decades. (cf. Inventering av nationellt värdefulla landskapsområden 2010). Originally, the landscape has been understood mainly as **the nature landscape** (cf. Raivo 1995, 8, Mead 2008, 421). When a scientist of the geography describes the Finnish landscape with one word, he says "epigrammatic". The essential features: rock, water, bog, woodland and the clearances made by man repeat themselves and make good combinations (cf. Mead 1993). Finland has been described for generations as a land of forest and thousands of lakes. This is very strongly reflected also in the Finnish art of painting.

But the landscape is not looked on as simply a pretty picture or as a static text, rather it is the expression of landscape as cultural process (Robertson & Richards 2003). The nature landscape is formed mainly by natural laws and natural forces, **the**

culture landscape by man-and-nature interaction. The landscape has been defined as an area with characteristic features based on activities of nature and/or man and their interaction. It is a question of a multidimensional issue. Taylor's (2008, 1) opinion is that "landscape" from its beginnings has meant a man-made artifact with associated cultural process values. This is a holistic view of landscape as a way of seeing.

"Landscape therefore is not simply what we see, but a way of seeing: we see it with our eye but interpret it with our mind and ascribe values to landscape for intangible – spiritual – reasons. Landscape can therefore be seen as a cultural construct in which our sense of place and memories inhere."
(Taylor 2008, 1)

We can experience the same environment in many different ways. How man experiences that mental picture stays always as a unique **mental landscape** in one's mind. Here one compares this environment with one's previous experiences, adopts something new and may add one's own meanings. (Tani 1995, 34.) When we consider 'The landscape you would like to conserve', this can be related to a mental landscape, where one's personal experiences and mental pictures of an environment worth preserving meet (Cantell et al. 2007, 20). Mental landscapes (e.g. memories, hopes, fears) generally have a great influence on how one does experience one's own environment.

The landscapes are often classified as nature and culture landscapes (Granö 1932). More recently also the activity of man (Olwig & Jones 2008: x), and cultural features have been included to be part of the concept of the landscape: nature landscapes were converted into cultural landscapes by human influence. From this point of view, Paasi (1983, 290) compares the phenomenon to a process in which culture is represented as a doer, area of nature or environment is a mediator and the result is a cultural landscape. In practice it is difficult to draw a line between natural landscape and cultural landscapes. It is more beneficial to emphasize the continuum of the landscape (Cantell et al. 2007, 19). In nature landscapes, nature is more conspicuous than the activities of man (e.g., forest landscapes), whereas in cultural landscapes, the activity of man is predominant (e.g., agrarian landscapes). The most harmonious landscape is the one in which the nature and culture stay in balance with each other.

The landscape is also used to mean environmental perceptions (Wall 2002, 99). So how do the concepts of landscape and environment differ? The Finnish National Core Curriculum 2004 (Grunderna för läroplanen för den grundläggande utbildningen 2004) and the Finnish school textbooks in general acknowledge environment as a physical nature environment and as a built environment rather than as a social or cultural environment (cf. Suomela & Tani 2004). In environmental psychology, environment is often divided into three categories: the physical environment, including the nature and the built environment, and the social environment with the physical presence of man in it. (Cf. Aura, Horelli & Korpela 1997, 15). Thus the definition of environment itself appears to differ depending on the field of science providing the definition.

Favourite landscapes and values of the landscapes

A landscape is an experienced environment, which can be perceived by senses and feelings or through cognition processes. One's favourite landscapes can be inborn or modified by culture and the era. Experiences from one's home surroundings are important for one's values, therefore the living environment of childhood brings strong exiting experiences to the picture of one's favourite landscape (Kaivola & Rikkinen 2003, 138-141; Palmberg & Kuru 1998, 256). One's experiences of the environment are influenced by its various physical, social and functional effects (Aura, Horelli & Korpela 1997, 130-134).

A Norwegian study (Kaltenborn & Bjerke 2002) found that experiencing one's living surroundings as pleasant depended greatly on what elements of the landscape one generally valued. Generally, Norwegians felt that forest and water were pleasant environments. Atauri, Bravo and Ruiz (2000) discovered that the type of landscape one is fond of, and one's behaviour and attitude towards, and expectations of the environment were greatly influenced by one's activities in the neighbourhood, i.e., the environment was experienced purely on a functional basis (cf. <http://metsaverkko.wetpaint.com>). In one's mind, the physical surroundings are less important, it is the human relations and social network that form the environment.

Several studies reveal how experiences of the nature influence one's mental image of the landscape. Kellert (2002, 120–121) mentions direct, indirect and transferred experiences of the nature (cf. Temmes 2006). For 12-year-old boys, activities in nature, such as fishing, swimming or moving in nature using boats or skidoos are considered experiences of nature (Kaivola & Rikkinen 2003, 183-185; Temmes 2006). Peaceful scenery, like the summer house or the water element pleases young people. Water or vegetation should form the main elements of the scene. A beautiful green forest feels safe; however it can also be frightening. Environmental psychologists suggest that nature landscapes have a psychically nurturing effect (Aura, Horelli, Korpela 1997, 94-107). Landscape, which is favoured, should be neither too simple nor too complicated.

Studies dealing with children's concepts of the forest environment have shown that children imagine the common forest animals to exist in forest environments. Their conceptions of the animals refer mainly to the habitats or food of the animals. (Strommen 1995.) However, the nature relationship of children changes with age: e.g. the early childhood (9-12 years old) is a period of rapid increase in knowledge of the nature, and at the same time, increasing interest in animals and nature is observed (Kellert 1996, 49). Finnish children and adolescents value the ecological features of the forest, as well as outdoor activities in the forest, while young Russians appraise the forest's healthy and clean air and its aesthetic values. In addition, the Russians emphasize the importance of the company of a dear friend in a familiar domestic forest (Eloranta 2000). The Russian school children from grade 6 describe the forest more scientifically than the Finnish ones (Eloranta 2008). In the children's drawings – especially by the Finnish children – the interaction between man and forest with illustrated by trails and tracks exists. However, no human beings, picking berries or

gathering mushrooms, were shown in the drawings. There was a clear difference in quality between the forest drawings made by the girls and the boys. The girls' drawings were more carefully made than the boys'. This difference between the sexes was even more distinct between the Finnish boys and girls than the Russian children. The Russian girls did not draw man at all whereas the Russian boys had a fisherman in the boat. The results show differences in the relationship to the forest by the pupils: the Russian drawings indicate that the forest is "over there" and the Finnish drawings imply that it is "close by". (Eloranta 2008.)

The landscape includes several layers of values: geological, ecological, cultural, intellectual and social values. It has been estimated that the landscape can be valued by these layers, the more layers there are, the higher values a landscape contains (Loughland et al. 2002). The layers can be valued differently depending on the purpose of the valuation. This is seen, among other things, when the area/landscape is valued in different environmental and energy programs of a community or when making a decision of establishing a recreational, conservation or forest protection area. In different landscape protection programs, the protection of the rural cultural landscape as well as the nationwide valuable landscape areas, are included. In a landscape scheme, made by people of a Finnish village, the most important objects were the following: old sandy roads and lanes of the village as well as old buildings, the forest, the islets of forest, a spacious and cultivated scenery, prehistoric remains, paddocks, meadows and creeks. (Heikkilä 2000; Inventering av nationellt värdefulla landskapsområden 2010.)

Drawings as a research material

It is an interesting question to consider the background for the children's picture-making when they have got the task of drawing. Do children draw what they know about the thing or what they see, or do they use certain experiences or schematic presentations? In the traditional theories on child art "*intellectual realism stands for the notion that children draw what they know about the world rather than what they actually see*". The last view is called *visual realism*. (Piaget & Inhelder 1956; cf. Aronsson & Junge 2000, Horstman et al. 2008.)

Three drawing strategies: mixed perspective, X-ray or transparency drawing and size distortions, are traditionally associated with intellectual realism (see Aronsson & Junge 2000, 135– 159, according to Luquet; Piaget). Intellectual realism is related to knowledge-driven representations in an early stage in children's drawings, whereas visual realism or central perspective projections generally characterizes the final stage in children's drawings. (cf. Aronsson & Junge 2000).

Drawings have been used as a research material in several studies: e.g. in the developmental psychology of children (e.g. Lowenfeld & Brittain 1975; Thomas & Silk 1990; Lange-Kuttner & Thomas 1995; Cherney et al. 2006) and for the assessment of children's environmental perceptions (e.g. Barraza 1999; Backett–Milburn & McKie 1999; Alerby 2000; Linden 2000; Lindström 2000; Aronsson & Junge 2000; Eloranta 2004; Eloranta & Yli-Panula 2005; Eloranta et al. 2008).

Lowenfeld's book *Creative and Mental Growth* (and its eight editions) from 1947, already, is a classic presentation in art education like King (1991) writes.

Lowenfeld presented six stages of children's artistic development. Especially the four last ones from these are interesting on the view of our landscape drawings (see Lowenfeld & Brittain 1975, 183–369:

Stage 3. The schematic stage (7–9 years old)

Schematic generalization, a definite way of portraying an object. There is definite order in space relationships: everything sits on the base line.

Characteristics of schematic drawings are e.g. human schema, space schema, the base line as part of the landscape and X-ray pictures.

Stage 4. The gang stage: dawning realism (9–12 years old)

Space is discovered and depicted with overlapping objects.

Characteristics of drawings during the gang age are the meaning of color, space and design.

Stage 5. The pseudo-naturalistic stage (12–14 years old), the age of reasoning

This stage marks the end of art as spontaneous activity. Strive to create "adult-like" naturalistic drawings using light and shadow, space and three dimensionality, fold and motion with mixed success. For example this is including of growth as reflected in the art of the young adolescent: feelings and emotions, the self and others, school life and design, and nature.

Stage 6. The period of decision: naturalistic stage (14–17 years old)

Natural development will cease unless a conscious decision is made to improve drawing skills. This includes e.g. the adolescent and society, the secondary school environment.

Thomas (1995, 107–122) views from many angles the role of drawing strategies and skills in children's picture-making. He takes up for consideration e.g. the drawing process and its difficulty, the role of the schema in picture-making and copying other pictures. Presenting things symbolically depends on the cultural background. This seems evident in the texts of Lindström's book *The Cultural Context, Comparative Studies of Art Education and Children's* (2000) where education and children's culture are analyzed in socio-cultural, cross-cultural and multi-cultural perspectives. Wales (1990) even suggests a theory of "the influence of the local cultural symbols to the drawings of children".

Drawings by English and Mexican school children (7 to 9 years old) were analyzed to evaluate their environmental perceptions and their major expectations and concerns for the future (Barraza 1999). The results showed that children's drawings are useful tools in providing valuable information for the assessment of children's environmental perceptions. Children's drawings are thought to be a mirror of a child's representational development (Cherney et al. 2006). The research results indicated significant gender and age differences (5 to 13-year old children) and emphasized that children's drawings can make an important contribution to the study of their cognitive development and vice versa, children's cognitive development is reflected in the pictures they draw. (See also Stetsenko 1995, 147–158.)

In a study by Alerby (2000) “the good world” was represented among other things by the cultivated countryside, a park or a vegetable garden, and in some cases by drawings of animals including man. Studying “Good and Bad world” in the drawings she observed differences between the age groups and the sexes. Girls more often than boys, and younger children more often than older ones, had drawn examples from the “Good world”. Boys typically drew “the Bad World” e.g. environmental disasters. The youngest children provided their own, concrete “here and now” perspectives of the positive world, the older ones had more global views in their pictures (Alerby 2000). The welfare of the animals was emphasized in the pictures of the youngest ones.

Ethiopian children’s drawings were much less child-centered and more sociocentric than the drawings in Western countries (Aronsson & Junge 2000). The children express their concerns about societal phenomena, which the researchers call a *social scaling* of picture elements. The children’s drawings from everyday life present agricultural work, household work, water taps and woman carrying goods.

The landscape drawings of the Finnish and Russian children and adolescents have been analyzed in connection with research into their environmental values (Eloranta 2004; Eloranta et al. 2008). The use of drawings in these studies has proved to be a useful research method. However, e.g. Backett-Milburn & McKie (1999) presented a critical opinion of the use of the drawing and writing method in studying children’s health education.

Studies of environmental values and children’s and adolescents’ relationship to the forest have shown that there are differences between male and female opinions (e.g. Alerby 2000; Kaivola & Rikkinen 2003; Eloranta 2008). Water elements were more often drawn by girls than boys, whereas human activity was found more often in boys’ than in girls’ drawings of the landscape and the forest.

The research questions

The aim of this study was to analyze the drawings of a group of pupils in the Finnish basic education to identify the landscape they would like to conserve and also to find out in the different ages being the girls’ and the boys’ relationship to the environment.

The study questions are related, according to environmental psychology (Aura et al. 1997) to the three landscapes: (1) the nature, (2) built and (3) social landscapes:

1. How is nature present in the landscape that the pupils would like to conserve, and how does it reflect the pupils age and gender?
2. How is the built environment present in the landscape which the pupils would like to conserve, and how does it reflect the pupils age and gender?
3. How is man present in the landscape that the pupils would like to conserve, and how does it reflect the pupils age and gender?

Study design

Study methods and study group

This is a qualitative study with phenomenographical features, investigating the phenomenon of the landscape valued by Finnish pupils (cf. Marton 1981; Ahonen 1994; Loughland et al. 2002; Eloranta 2004). “The landscape that the pupils would like to conserve” is studied as reflected by the drawings of pupils of certain school grades in basic education. One school grade is equivalent to a certain age group in Finland. In this article the contents of the landscape are more important than drawing skills and the quality of pictures, how the surrounding environment is construed in the minds of the children and young people. The case study is based on the drawings of pupils from ten different schools. A case study is value-based (Cohen et al. 2003, 181), so the values of the researchers have an influence on the interpretation. The pupils' drawings reflect their conceptions of the landscape.

The project focuses on the 7–16 years old pupils in the Finnish basic education. The research has been carried out in connection with “The Finnish-Russian Country School Project” starting in 2002, organized by the Finnish National Board of Education. This research material has been collected from schools mainly in Eastern Finland in spring 2003. The ten schools of the research were situated either in the Finnish small cities (population 20 000–100 000) where nature is always close or in rural areas. The pupils were asked to draw on an A4-size paper “*The landscape they want to conserve*” and on the back of the paper the name of the school, their gender and age. Some teachers wrote also on the back “the name of the pupil's landscape” after asking it from the student. The technical realization of the drawing was open and the techniques used in the drawing varied. Some of the landscapes were drawn using different kinds of coloured pencils or normal pencils. In this study, 324 of these drawings were analyzed. There were 193 (59 %) drawings from the grades one and two (7–9 years old), 93 (29 %) drawings from grades 5 and 6 (11–12 years old), and 38 (12 %) drawings from the grades 8 and 9 (14–16 years old) (table 1.). There were 98 girls and 95 boys in the youngest group, 47 girls and 46 boys in the middle group and 31 girls and 7 boys in the oldest group.

Data analysis

The drawings (N=324) of this study have been analysed in three steps.

Firstly, (**Stage I**) the drawings were divided into *three main categories* using a theory and content based analysis (Guba & Lincoln. 1994). Stage I analysis yielded (1) drawings, which described only the nature, or (2) only the built environment, and (3) drawings where the physical presence of the human being could be seen in the environment (see Aura, Horelli & Korpela 1995, 15). In the drawings of nature landscape, no features related to the cultural or other human activity were present, just nature. In the landscape drawings of the built environment, there was always some

indication of man's activities, like a road, a fence, a building, a domestic animal etc. The presence of a human being in the drawings could be shown, e.g. as a stick figure, as a face in the window or an angler in a boat.

Secondly, (**Stage II**) after the drawings had been divided into the three categories, their contents were analyzed more carefully, and on the basis of the prevailing content of the landscape drawings, *the final "landscape types"* were formed. Thus, *seven different 'conceptions of the view'* (water, yard, field/meadow, forest, road/street, mountain and cemetery) were formed. In addition, there was one atomistic landscape (like a pre-schematic picture), which featured separate, unrelated objects, and it was not possible to classify the landscape according to its features.

In the third part of the analysing process (**Stage III**) the descriptions of the retrieved *"landscape types"* were further specified.

The results of the analyses of the landscape drawings were classified according to the age and gender of the pupils. The material was analyzed independently by two researchers who shared unanimous views in the vast majority of cases.

The basis for the evaluation of these data were over one thousand landscape drawings of the Country School Project. These drawings had been analysed to a written format (data not included here) at the beginning of the study (cf. Eloranta 2004).

Results and discussion

Results of Stage I analyses

How is nature, the built environment and the presence of man introduced in the landscape drawings of the Finnish pupils of the basic education?

The content of the drawings fell into three main categories (table 1) from which the nature landscape category was favored by the pupils. Half of the drawings (50 %) described nature as the landscape which the pupils would like to conserve. The landscapes of the built environment came second, containing 33 % of the drawings. The third category of the drawings, where man was physically present in the picture, was the smallest one including 17 % of the pictures.

TABLE 1.

The drawings (N=324) classified on the basis of the school grades and the three main landscape categories: nature, built environment and environment with man present

School grades	Number of the drawings in three landscape categories		
	Nature	Built environment	“Man present”
Grades 1-2 (n= 193)	97 / 50 %	63 / 33 %	33 / 17 %
Grades 5-6 (n= 93)	42 / 45%	32 /35 %	19/ 20 %
Grades 8-9 (n= 38)	22 / 58 %	11/ 29 %	5 / 13 %
Total (n=324)	161 / 50 %	106 / 33 %	57 / 17 %

The number of the drawings is not evenly distributed into the main three categories in terms of the age groups (table 1; table 2). The proportionately largest variation can be observed in the group of the nature landscapes. The percentage of pictures drawn in this category out of all the three categories was the highest in the older pupils’ group and the percentage of nature landscapes drawn out of all the three categories was the lowest in grades 5–6 (in other words young or early teenagers). In line with these findings, younger pupils – especially boys – more often than the older ones favored cultural landscapes (built environment and the human being is in the landscape).

TABLE 2.

The drawings (N=324) classified on the basis of the school grades and the three main landscape categories: nature, built environment and environment with man present. Number of drawings according to the gender

Grades/gender	girls/boys	Nature	Built environment	”Man present
		girls / boys	girls / boys	girls / boys
Grades 1-2	(98 / 95)	57 / 40	30 / 33	11 / 22
Grades 5-6	(47 / 46)	33 / 9	11 / 21	3 / 16
Grades 8-9	(31/7)	19/3	9/2	3/2
Total (n=324)	(176/148)	109 / 52	50 / 56	17 / 40

Results of the analyses of Stages II and III

In *the nature landscapes* the following issues were usually present; vegetation, especially trees, often also flowers (drawn by girls), water elements, the sky and the sun. Especially in the youngest age groups, there were a noticeable number of *stereotypic drawings* (fig. 1), girls had them more often than boys. These stereotypic drawings belong clearly to *the schematic stage* in Lowenfeld’s classification. Although the nature landscapes were rather easy to differentiate from the other two main landscape categories (from the built and “the man present” landscapes), the

unambiguous classification of their content to clearly-defined landscape types was not as easy. In addition, the quality of the drawings differed noticeably according to the age group. The classification of the drawings of the nature landscapes made by younger pupils was difficult because of the poor quality of the drawings and also because the nature elements like water, forest, mountains and meadow appeared all in the same picture and were equally represented. The drawings showed that making a landscape drawing was not easy for these younger pupils. The landscapes in which the objects were drawn one by one, and which were difficult to interpret, formed their own *atomistic landscape type*. There were indications of preliminary conceptions of landscapes in the atomistic types of drawings like in Lowenfeld's the pre-schematic stage. However, from the drawings of the nature landscapes it was possible to distinguish the following landscape types: **water, forest, meadow and (northern) mountain** landscapes and the already mentioned atomistic landscape (cf. fig. 2).



FIGURE 1.

Example of the stereotypic/ schematic drawings in the nature landscapes made by a girl in the youngest age group

The dominating content of the nature landscapes typically consisted of water elements, such as creek, river, small lake /pond, lake or the sea. These landscapes were called *water landscapes*. The contents of the water landscapes were often rather unambiguous and clear. The drawings showed both schematic and also realism and

naturalistic features (cf. Lowenfeld and Brittain 1975). This landscape was favoured above all by girls.

Some descriptions of *the water landscapes* written by pupils:

Tree by a small lake, water, the sun, birds (boy, 7 years, 1st grade)

Green island, lake, trees, sun (boy, 8 years, 2nd grade)

Sunset on the water, water, trees, the sun (girl, 11 years, 5th grade)

River, small lake with water plants, stone, lawn, flowers, big tufted clump of grass, birch tree, spruce, berry bush, fox, ant mount, birds (drawn like waves), some of stones, the sky in the background (girl, 11 years, 5th grade)

Seashore, thunderstorm, lightning (girl, 15 years, 9th grade)

Seals on ice (girl, 14 years, 9th grade)

An artistic painting: a large water area, the moon, a mountain (girl, 14 years, 8th grade)

The boys' drawings included an equal number of forest and water landscapes. In *the forest landscape* drawings, the broad-leaved trees and conifers did grow sparsely, one by one, not forming a dense forest. Bushes and stones were also presented in these landscapes. The drawings of the younger pupils included both schematic and realism features, the older ones' drawings showed increasing critic and "adult-like" naturalistic stage, e.g. with using correctly light and shadow:

Coniferous forest and conifers, a rock, water, snow, the sun (boy, 8 year, 2nd grade)

Forest of animals: trees, animals (a squirrel, a hare, an elk), water, the sun (girl, 7 year, 1st grade)

Forest in spring: birch trees, a hepatica and forest land (girl, 12 year, 5th grade)

Tree, roots (artistic, made using a pencil) (girl, 14 years, 8th grade)

Tree in autumn (artistic drawing) (girl, 16 years, 9th grade)

The meadow landscape with its flowers and bushes was the mental picture of many girls, "the landscape they would like to conserve":

A meadow with flowers, grassland, the sun (girl, 7 years)

The mountains drawn on the horizon of the picture were the dominant feature of *the mountains landscapes*. In this landscape, a sunset or a sunrise was often drawn. In

addition, water elements like a lake or a waterfall were frequent. Some schematic and copying of adult-like naturalistic features were seen in these drawings.

Northern mountains, trees, green twig land, a reindeer, the sun (girl, 9 years, 2nd grade)

Animals were rare in the landscape drawings. This was a common feature in the drawings of the different age groups. Relatively few animals were drawn in the younger age groups (less than one fourth of the drawings) compared to drawings the older groups (about one third of the drawings had an animal or animals). The most common animals in the landscapes were those which can be easily drawn; like “wave” birds in the sky (cf. Thomas 1995, 111) or a fish in the water. Only in a few drawings there were well recognizable nature mammals like a fox, an elk or a reindeer. Animals such as a seal, an eagle and a redstart featured in the landscapes of the older teen age group.

The youngest students found it difficult to draw a landscape and so did the older students in grades 5 and 6. According to Lowenfeld's stages in the drawing development this is an evident mark of increasing criticism about with their picture-making. Different kinds of water landscapes and almost an equal number of the forest landscapes were favoured in this group showing coping and schematic stage. The nature landscapes of the oldest age group differed from the drawings of the other two groups both in their quality and content. A special feature in this group of drawings was that some of them were artistic or simplified landscapes. These drawings included not only the common water landscapes but among others single trees and some abstract pictures (increasing critical and natural development).

Several nature landscapes were like views from windows or paintings on the wall, illustrations of the artist's visual experiences. They seemed to be physical targets in the distance, in other words, somewhere in there. These “landscapes that the pupils like to conserve” are well in line with the original definition of the landscape, the *nature* landscape.

How is built environment represented in the landscapes that the pupils in the basic education would like to conserve?

The landscapes of the built environment were easily identified from all of the drawings. The pupils had drawn one or more marks of man's activities in the landscapes, man had appeared into the nature landscape. However, the relation between man-made things and the nature landscape is very much in harmony in these drawings. The transition from the pure nature landscape to the cultural one is gradual (see Cantell et al. 2007); and the man-made things in the landscape do not disturb the peaceful nature landscape.

One third of the landscapes represented a built environment, the so-called cultural landscape, where the nature landscape had been changed by human activity. The number of these landscapes did not vary markedly between the three age groups: there were more of them in the younger age groups (33 % and 35 %), and fewer in the older pupils’ group (29%) comprising upper secondary school students at the finishing stages of their studies. (Table 1.)

The classification of the landscape types of the built environment was based on the dominating nature landscape; but there was always at least one man-made object for example a building, a road, a bridge, a wharf, a domestic animal etc. The content of the landscapes differed between the age groups. *The water landscapes* were again present in all the age groups. Man’s activities were also recognized in the yard, forest, road and mountain landscapes as well as in the cemetery (fig. 2).

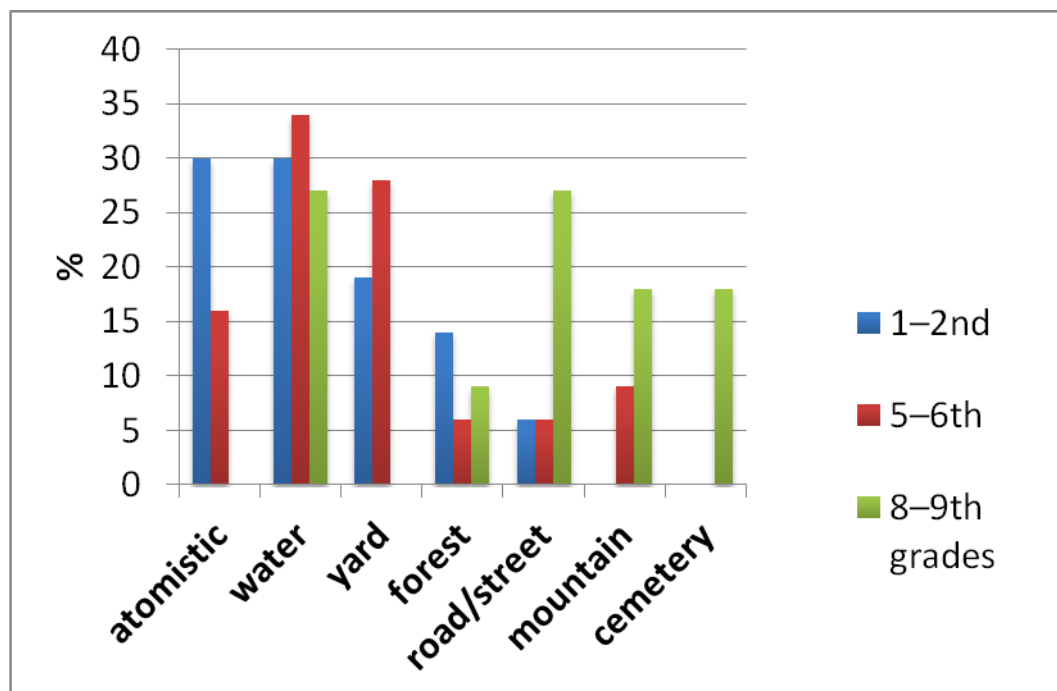


FIGURE 2.

The seven landscape types of the built environment drawn by pupils (n=106) from three different (age) groups (1-2nd grades, 5-6th grades and 8-9th grades).

In the drawings of the youngest age group, five types of landscapes were distinguished. Of these, *water/shore landscapes* and *atomistic landscapes* were the most common ones. The water and shore landscapes in this age group tell the researchers about children’s summer experiences at the summer cottage or on a bathing beach in the sunshine. Human activity was represented by boats, buildings, summer cottages and wharfs, and nature by water, plants, animals (birds and fish) and the sun.

Southern shore and a boat; palms, ocean, water animals, birds on the sky, lawn, the sun (boy, 7 years)

Sunset at a river: a stone edge, a river, trees, the sun (girl, 9 years)

Cottage on an island, a lake, trees, the sun (girl, 9 years)

A sandy beach and an airplane taking off; water, the sun (boy, 8 years)

The boys valued more water landscapes with activities compared to *the yard landscapes* valued by the girls. Yard landscapes often contained home/domestic animals, of which horses were typical in the girls' landscapes. A dog, a cat, a reindeer (rare) and a gorgeous swan on a pond made the courtyard homelike. The yard landscapes were represented in the drawings of the younger age groups (19 % and 28 %) while they were missing from those of the oldest age group. The youngest pupils had often the schematic presentation: one house with the window (and the door and the chimney) in the middle on the base line, some trees or other plants on the both sides of the house, clouds on the upper part of the drawing and the sun on the upper corner.

The yard landscape; a house, a lawn, a birch and a conifer tree (girl, 8 years)

A horse on a paddock; fenced area with buildings, trees, a lawn, a horse (girl, 8 years)

A corner of a house, a road, the sky, spruces, fruit trees, a road direction sign, a carpet hanging on the ladder, clouds and the sun (girl, 8 years)

A garden; a house, a vegetable garden, an apple tree, a warehouse, a pond, a cat, the sun (girl, 11 years, 5th grade)

A single family home, a broad crossing road, vegetation in the surrounding area; a spruce, birches, ornamental trees, bushes, berry bushes, flowers, a bench, a cottage by the yard, a swing made of rope, a spruce forest at the back, building, "wave" birds, clouds, the sun (girl, grades 5-6)

Although many drawings of *the water/shore and yard landscapes* were schematic and canonic-like pictures (a base line, the sun, clouds, flying birds) especially in the group of the youngest pupils, anyway they showed clearly the views, which children had seen and had own experiences about (visual realism). However, in many drawings the perspectives of the buildings were not always just correct, and the sizes of the things compared with others were not right. No X-ray or transparency depiction was found in the buildings or anywhere else like e.g. in Ethiopian children's drawings (Aronsson & Junge 2000), was found in the present study. One eight-year old boy had drawn the class-board and the teacher's table in front of the classroom. Sometimes children try to draw too many details in the same landscape. We as the researchers see in those drawings both the schematic stage and the dawning realism according to Lowenfeld's stages of drawing development in children.

In the forest and road landscapes of the youngest pupils' group, there were typical trees and animals as well as some buildings, stone bridges and a bench for sitting in the park. One forest landscape featured equipment for the logging (=forest working site). Certain vehicles and bridge constructions represented activities of active, moving man. Bicycles on a forest road and stands on a sport field are indicative of the boys' hobbies.

In a forest landscape a barn by the edge of the forest, a spruce forest, a farming field (boy, 11 years, 5th grade)

Road/street views, mountain landscapes and cemeteries were drawn relatively more often in the oldest pupils' group (fig. 2). Vehicles like cars, motorcycles, boats and aeroplanes were present. Suspension bridges of the high streets were drawn crossing the natural waterways and there were two smaller arch bridges in the park landscape. These bridges were in most of the cases drawn by boys.

The road/street landscape, a church, a road, a fence (boy 11 years, 5th grade)

In the mountain landscapes among other things Macchu Pichu in Peru and its prehistoric stone constructions were described. There were two examples of cemeteries; a peaceful graveyard surrounded by a stone fence, and an empty view at the border of a town.

The sunrise in mountain landscape: a small house, water, the forest, the mountains, the sun (boy, 9 years, 2nd grade)

High mountains; a church at the base of the mountain, a small spruce at the front, the rising sun (boy, 5-6th grade)

A lookout tower or a sports center typical of the area, were in the minds of the pupils according to the drawings (fig. 3). Lookout towers are the good signs for the landscape of the certain area. An eight year-old girl has presented a tower in figure 3 on the ground level in a dense spruce forest seen during the full moon. (In reality this lookout tower situates in the dense spruce forest on a high mountain.)

THE LANDSCAPES THAT FINNISH CHILDREN AND ADOLESCENTS WANT TO CONSERVE –
A STUDY OF PUPILS' DRAWINGS IN BASIC EDUCATION

Eija Yli-Panula & Varpu Eloranta

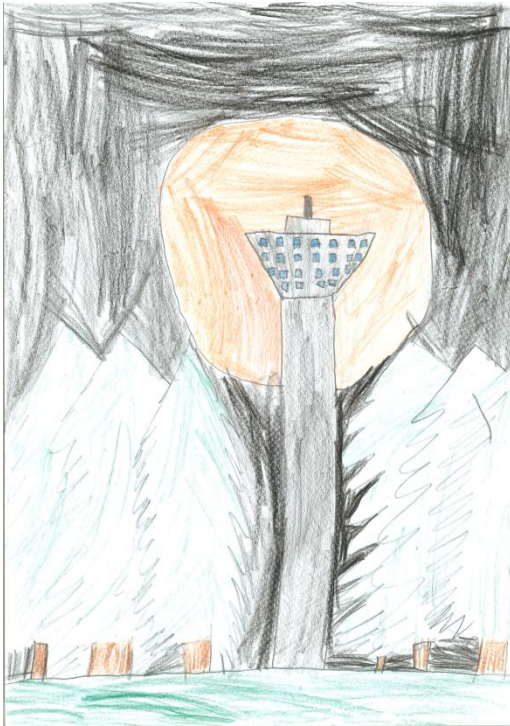


FIGURE 3.

*A lookout tower typical for the pupil's living area, the drawing an example of **the building landscapes** drawn by an eight year-old girl.*

The great majority of *the atomistic landscapes* of the built environment (fig. 2) were drawn by boys, and it was not possible for the researchers to perceive the mental landscape which had been in the mind of the drawer. They represented houses, churches, stairs, a vegetable garden, a blackboard, stands on a sports field and a motorcycle representing vehicles

The atomistic landscape: a motor cycle, a wall (boy, 11 years, 5th grade)

A ridge roof house, a gable wall with gable windows and a door (boy, 5-6th grades)

Only 11 pictures drawn by pupils in grades 8 and 9 of basic education represented the built environment. There were lake and road landscapes but also mountain, forest and cemetery sceneries. *A lakeside landscape* of a summer cottage island, with a hammock and a campfire or a jetty with a boat beside, represents summer surroundings that are important to these teenagers. *The road landscapes* reflected several kinds of sceneries like a dense highway nest, a bridge on the way to the country house and even fantasy paintings. The landscapes drawn by these early teenagers have many “technical objects” and realism features.

How is man present in the landscapes that the pupils in basic education appreciate?

The third of the main categories, *man physically present in the landscapes*, was the smallest one, consisting of 17 % of the drawings (table 1., fig. 4). These landscapes were relatively most often drawn in the age group of 11-13 year-old pupils and less often in the group of the oldest pupils (table 1). Man was drawn in an active relation to the environment, and humans have been scattered all around in the landscape. According to the Finnish summer socio-cultural context man is in harmony with the landscape, and this is also the case with these drawings, e.g. in many landscapes of the lake and summer cottage. The favourite landscapes of young people reflect their social skills, as well as hobbies and positive mental pictures. There were also exceptions like pictures describing back alleys of everyday life by pre-teenagers’ group (mainly pupils in grades 5 and 6) and also landscapes with excitement and adventure.

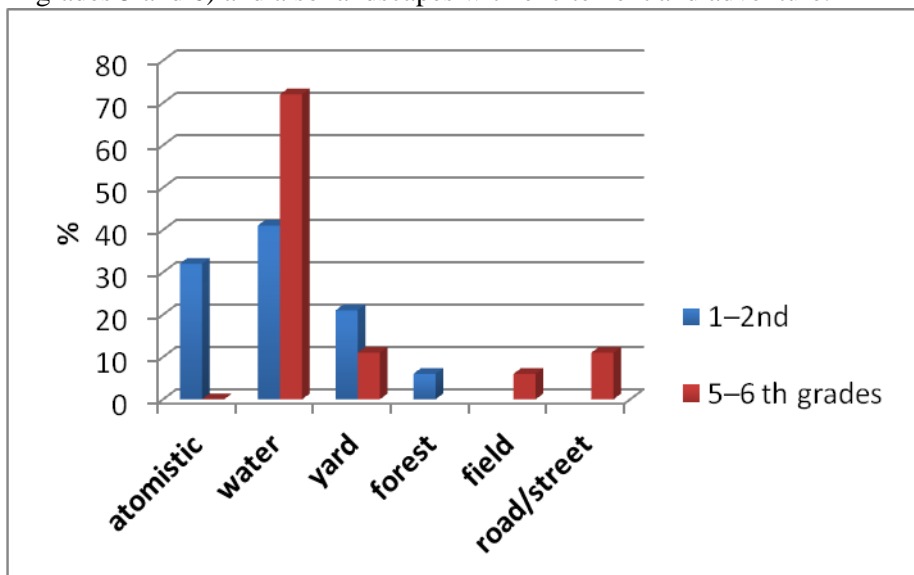


FIGURE 4.

Frequencies of the presence of man in the landscapes (n= 52) by the type of landscape and the age group

The atomistic landscapes with very scanty content were mostly drawn by boys. In these landscapes man or a sketch of man is sunbathing, sliding the hill, walking a dog (on a leash), skipping a rope or swinging. These kind of hobbies are a very common way for children in age 7-8 to spend their summer days.

Among the younger age groups, *the water and summer cottage landscapes* were the most popular sceneries of the cultural landscapes where man was present (fig. 4). The mental pictures seem to give an impression of real life, they were well drawn and the activities in the pictures were easily analysed. Human beings in the pictures were typically drawn busily involved in their summer hobbies. They were rowing, swimming, fishing, boating or just standing on the beach. The majority of these landscapes were drawn by boys (fig. 5).

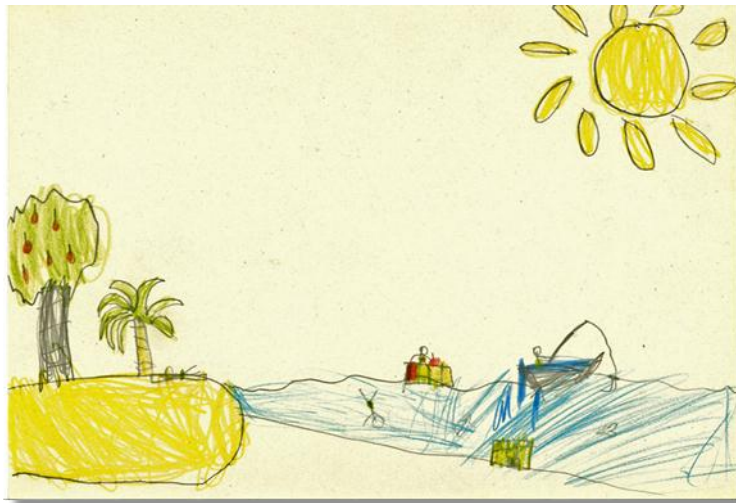


FIGURE 5.

A man rowing, swimming and fishing in a water and summer landscape drawn by a 11-year old boy

The activities on the shore landscapes reflected clearly their own experiences and the positive memories of the summer and holiday periods of the artist. The southern beaches were also favoured by boys. Part of these holiday landscapes, just like some street landscapes, were not entirely positive but also contained illustrations of back alleys of everyday life, such as beer drinkers and down-and-out-soaks near litter boxes and guys with guns hanging out in the vicinity of a church. Here are some written descriptions of the landscapes:

Water/shore landscape: man in a boat, waves on a lake, rocks in the background, a flag, a spar-buoy, a flying bird, the sun (boy, 1st grade)

The shore of a summer house: lake, man in a sailing boat, a boat, a bower and a path to a jetty, bunch of flowers, water plants, a birch, two spruces, washing hanging on a rope (boy, 5th grade)

Angler on the shore: a sailing boat on a lake, a jetty with stairs to the water, willow bushes and woods around the lake, a boat, stones, rocks, hilly ground behind the lake, a big rising sun (girl, 8th grade)

In *the courtyard landscapes*, there was usually a building in the middle. A person stands, walks, plays ball or just looks through the window. The pictures reflect the experiences and atmosphere of the home yard.

Courtyard landscape; a house, a girl, a dog, a lawn, flowers, the sun, the sky (girl, 1st grade)

Home yard, house with an antenna on the roof, a swimming pool, boys playing with a ball, a row of mailboxes, car with a steaming engine, a short piece of road (boy, 1st grade)

Home house and courtyard, a tidy house and a road, a girl in the light of a table lamp inside the house, a cat and a flower in the other window, bushes, trees, flower beds, volleyball net and a ball flying in the air, wooden fence (girl, 1st grade)

Forest landscape; a girl standing at the edge of the forest, stock of a tree, a leafy, green forest, the sky (girl, 1st grade)

Field landscape: cultivated land, a lake, field and islets of forest, pine trees (spruces, pines), leaf trees, a pair of stones, two tractors in the field, saunas on the shore and jetties, vegetation on the shore (girl, grades 5-6)

Street landscape: “A guy at the litter boxes”, another man digging the litter box, the edge of the park, a bench, a small pushcart, a driver in a car on the street, the Finnish flag in the car, two buildings with faces peeping through the windows (boy, 5 years)

Hotel Las Vegas, in front of it a street, the street paved with stones, a car, a red carpet, an entrance to a building (with ceiling and doors), ‘no smoking’ sign on the front wall, a motorcycle, signs of a litter box and police, two windows with curtains, a man on the street (with hat and shirt on) (boy, 5th grade)

Four boys skateboarding, sports and gym equipment of many, stairs with banisters, a pine, clouds, the sun, the sky (boy, 5th grade)

Cemetery: a hill with a spruce in the front of and a block of flats behind it, cars, cemetery and plenty of memorial crosses and gravestones, a huge stone, delivery van, dead people, a man with wings of the eagle on his sweater and a dagger in hand carrying a child, the sun in the horizon (boy, 8th grade)

The landscapes with activities of girls all reflected positive things; they represented the so-called “good world”. They describe sports hobbies; like swimming, having a holiday on the southern beaches and canoeing on the river. The positive water landscapes of boys included fishermen (anglers) and yard landscapes with boys sporting on the football ground or on a skating area. In a beautiful field landscape there were tractors with farmers (sowing). There was one boy dreaming of the sun in the southern latitudes, of riding on a camel in the desert and of ice cream and a swimming beach with motorboats.

Man was present in only a few landscapes drawn by the pupils of the 8th and 9th grades (5 landscapes, two drawn by boys and three by girls). The drawings were *water landscapes* except for one very symbolist drawing. The girls’ pictures illustrated a stormy “Moomin fairytale” and young people dreaming on the rocks of a shore. In the landscapes of the boys there was a rower on the lake and angler on the cliffs.

Conclusions

Firstly we can conclude that the study task, i.e., to draw a landscape that the pupils would like to conserve was not easy for everybody. This was especially true of the unclear and atomistic landscapes of the youngest children (7-9 years old). The result is in line with Lowenfeld’s drawing development in children (Lowenfeld & Brittain

1975). Furthermore, many of the drawings presented a stereotypic landscape, very scanty in content. Often this kind of landscape was drawn by several pupils from the same classroom. It is possible that the children in the schematic stage, drew what they would spontaneously draw when asked to draw a landscape, i.e. putting on paper what the word landscape brought to their mind. In particular, this can be seen in the boys' drawings and especially in those describing man's activities in the environment. The task was made even more challenging by the fact that the pupils had to carry out two different kinds of cognitive processes at the same time; on the one hand to build up an image of a valuable, conservable landscape and on the other hand to have the skill to draw the picture of it. The process of experiencing a landscape is a very personal one (cf. Åhlberg 2005, 158; Cantell et al. 2007, 20), including not only the knowledge of the matter but also widely the case, how they make observations about their surroundings.

The second conclusion is, that according to the classical concept of the landscape, the partition to the nature landscapes and cultural landscapes is a workable research frame to this study: the landscapes in the drawings by Finnish pupils in Basic Education were strongly connected to the nature (cf. Kaivola & Rikkinen 2003; Pohjakallio 2000). This nature-picture, which the pupils wanted to conserve, can be enriched more and more into the built environment and finally into landscapes where the concrete actions of man were seen in relation to the pupil's development and schooling years. A child- and man-centered landscape appeared more often in the boys' drawings than the girls' ones. Landscapes pictured by early-teenagers were reduced and often also change artistic, adult-like. This change might be a result of increasing criticism of their drawings or partly because of developing artistic skills.

The results of this study support the earlier opinions of young people's conceptions of the environment, that the nature and cultural landscapes are gradually dissolved into each other (cf. Cantell et al. 2007; Loughland et al. 2002). The drawings of social landscape also indicated a close relationship between man and environment presented in human geography (Haarni, et al. 1997; Beneker et al. 2010). The preference for a certain type of a landscape was not in linear relation with the age of the pupil, on the contrary, all three types of landscapes were drawn in every age group. The pupils had experienced her/his environment as a viewer (looking at it) or as an active participant (having an active role in the landscape) and as a human being living with it (taking responsibility for it).

In the mental picture of the children, the nature landscapes were the most often drawn as the water and forest landscapes. This result does not surprise the reader; with Finland being a country of forests and thousands of lakes, these environments are easily reachable and observable by children and young people. Nowadays it is very typical, that families have two living places, the one in the city and the other, a summer cottage, on a lakeshore in the countryside. An important observation is just the abundance of the water landscapes with summer cottages. These drawings reflected the positive summer experiences of the pupils, and this is in line with the earlier studies that have investigated pupils' experiences of nature (e.g. Kaltenborn & Bjerke 2002; Kaivola & Rikkinen 2003; Eloranta 2004). The observed matters of this

study showed that the cultural landscapes of everyday life were there and in these landscapes man-made things were present or man itself was present. The human activity consisted of moving about harmoniously (a rower, a swimmer, a cyclist) and enjoying the environment and its offerings (fishing) in these nature ecosystems.

In the two youngest children's landscapes there were many the child-centered angles of view, especially in the built and social landscapes (children's plays and games, hobbies etc.). This observation is in line with many Western materials but not e.g. with Ethiopian children's drawings (cf. Aronsson & Junge 2000).

The third clear conclusion is that the emphasis in the landscape drawings varied with age. When getting older, children will change more and more critical to their drawings. The youngest pupils favoured water and cultural (e.g. yard landscape) landscapes more than the teenagers in the oldest age group. The holiday beaches were clearly present, especially in the landscapes of the boys in pre-teenage. Perhaps the travelling or TV programs have diversified and enriched the pupils' mental pictures. The landscape values of the pupils in grades 5 and 6 were similar to those of the younger pupils. The biggest differences were in landscapes drawn by males, in which activities were emphasized and the traffic, vehicles and bridges were represented, showing a moving away from the courtyard. The drawn mental landscapes of the eldest age group clearly represented a wider perspective and both aesthetic and abstract views.

For the fourth we can conclude that the girls and boys observed the surroundings in different ways and developed different environmental values (see table 2). The girls preferred pure nature and water landscapes without human beings more often than the boys. The drawn courtyards with buildings, plants and animals indicated the importance and safety of the home environment for girls. These landscapes expressed the positive images of the environment (cf. Alerby 2000). Action, movement, technical things like vehicles, bridges and road constructions were more popular in the boys' drawings than in the girls' drawings. The boys also chose far away environments as their landscape motifs more often than the girls (cf. Kaivola & Rikkinen 2003). The TV series and travel documents might have had an influence on this. Houses and other buildings were drawn quite similarly by both genders; however, churches belonged more often to the boys' landscapes. The cemeteries were valued by boys in some cases in the landscapes they wanted to conserve. It is worth mentioning that some social problems were presented in the street landscapes drawn by boys. Especially some male pre-teenagers drew gun and police games.

The last observation related to the landscapes was that the number of animals was small even in nature landscapes. Animals were drawn in a fourth of the drawings of the younger age group and only in a third of the landscapes drawn by the oldest ones. The results are in line with earlier findings (e.g. Eloranta & Yli-Panula 2005). The small number of animals may be due to technical reasons. On the other hand, it is possible that the more permanent landscape elements like plants, water and buildings are considered to be part of the landscape, and deserve to be drawn while the moving animals are occasional and they are left out. In the landscapes drawn by Russian

young people, the animal fairy tales were clearly present (Eloranta & Yli-Panula 2005), but such association was not found in this research material.

The limitations of "the draw and write" technique have been widely elaborated e.g. by Barraza (1999) Backett-Milburn and McKie (1999), and Horstman and others (2008). According to them, the main disadvantage is the difficulty in analyzing the drawings, especially those produced by young people. In this study, the text in the back of the drawing helped the researchers to analyze the pictures and made the results more reliable. Another thing is, how difficult it is for a pupil to draw, what s/he has in mind and also how the researcher interprets the drawings. In this study there were two researchers who analyzed of the pictures independently according to agreed criteria.

The results of this study, observations of the pupils' skills to draw, pupil's increasing criticism to their skills according to age, the environmental values of the pupils, and the differences in values depending on the gender, are important findings for specialists working with children and young people. The teachers can use this information in their didactical and educational choices and pay attention to the results in the environmental education. The landscapes in the drawings of these Finnish pupils in basic education were strongly connected to the nature and this result is in line to the original Finnish definition of the landscape. It would be interesting to know, among other things, how much the study books and textbooks have influence on the pupils' opinions of the landscape they would like to conserve. This study does not give any answers to this kind of matters.

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