Journal of Research and Didactics in Geography (J-READING), 1, 2, June, 2013, pp. 7-16
DOI: 10.4458/0900-02

J - READING
JOURNAL OF RESEARCH AND DIDACTICS IN
GEOGRAPHY
homepage: www.j-reading.org

The environments of learning environments: What could/should geography education do with these concepts?

Sirpa Tani[a]
[a] Department of Teacher Education, University of Helsinki, Helsinki, Finland
Email: sirpa.tani@helsinki.fi

Received: April 2013 – Accepted: May 2013

Abstract

Geography is an academic discipline which does not have one single central concept, and therefore defining geography precisely has always been difficult. In this article, the aim is to explore two concepts often used in geography but seldom seriously defined: various meanings of "environment" and "learning environment" will be explored. Three different perspectives on the environment will be introduced: first, seeing it from outside, as an entity; second, seeing it from inside, as experienced by an individual; and third, understanding it as a culturally and socially produced phenomenon. Learning environments are then discussed through four different perspectives: the educational context where learning is situated, specially planned environments for learning, the learner's local environments and virtual environments. In the conclusion of the article, it is highlighted how the versatile character of environments and learning environments as seen through the lens of geography has the potential to build bridges between geography and educational sciences.

Keywords: Environment, Learning Environment, Spaces for Learning, Local Environment, Virtual Environment

1. Introduction

In recent years, some themes which have traditionally been integral parts of geographical education have raised academic interest among educational scientists as well. These include, for example, the importance of the spatial context in education. The approach has been called *place-based education* (e.g. Sobel, 2004; Gruenewald and Smith, 2008; Barratt and Barratt Hacking, 2011), and in this approach the role of outdoor education, especially in natural and rural environments, has been highlighted (e.g. Gruenewald, 2003). The thread of this discussion in connection with educational sciences and geographical education has been traced, for example, by Morgan (2011), Israel (2012) and Hyvärinen (2012). Morgan (2011, p. 86) has noted how place-based education has emphasized the importance of participatory, collaborative and inquiry-based approaches in order to explore the real-world issues relevant

for the local context of the education. Traditionally, the immediate environment that surrounds students has been considered as a natural starting point for geography teaching. Home, the neighbourhood and other everyday environments have been regarded as spaces which a person can observe and experience on a daily basis, and thus attach unique meanings to them. For geography teachers, this seems like a fruitful situation in which education can be linked with the students' own experiences.

Another increasingly popular theme, both in educational sciences and in geography education, deals with different learning environments. The concept of a learning environment has many meanings, and the way it is used varies considerably based on the context of the topic and the agents who use it. In this article, my aim is to investigate the various meanings which have been attached to learning environments. Multiple meanings of the concept can easily create confusion but, from the viewpoint of geography, also interesting material to study. I will argue that by paying more attention to the meanings given to the environment and learning environment, we can obtain methodological tools which could help to analyse the aims and contents of educational texts.

2. What are the key concepts in geography?

"What is geography?" is a question that many geographers and geography students find surprisingly difficult to answer. In the book *Key Concepts in Geography* the editors start their preface by comparing geography to certain other disciplines which have one central concept (e.g. "society" in sociology, "living things" in biology, and "matter" and "energy" in physics), while geography has many (Holloway et al. 2003, p. xiv). Taylor (2009) has investigated some of the many listings of geographical concepts and collected her findings in order to make this confusing situation visible and easier to analyse. Some of her listings are shown as examples in Table 1.

Leat (1998)	Holloway et al. (2003)	Jackson (2006)
Cause and effect Classification Decision-Making Development Inequality Location Planning Systems	Space Place Landscape Environment System Scale Time	Space and place Scale and connection Proximity and distance Relational thinking

Table 1. Some examples of the important concepts in geography listed by researchers (modified from the table presented by Taylor, 2009).

Table 1 shows how geographers have listed geography's central concepts in various ways. Jackson (2006) as well as Holloway and colleagues (2003) include "space", "place" and "scale" in their lists, while Leat's concepts are somewhat different. One reason for this can be found in the differences between the contexts where these concepts have been introduced: for example, Leat (1998) approaches geography as a way of thinking and therefore emphasises different concepts than, for example, Holloway and colleagues (2003, p. xiv), whose basic aim is to help the readers to understand "the use (and abuse) of these concepts within the discipline of geography". Taylor (2009), in the context of planning geography education, suggests a division between substantive and second order concepts, the first referring to the content of the discipline while the second is linked with the "the ideas used to organise the content and to shape questions within a discipline". Second order concepts introduced by Taylor (2009) are "diversity", "change", "interaction", "perception" and "representation".

This short introduction to the central concepts of geography reveals many issues which can cause confusion both among geographers themselves and curriculum planners. What do geographers actually study? What are their core messages that should be delivered to people outside this academic discipline? And, last but not least, what issues should be included in the geography studied in schools?

3. What do we mean by "environment"?

This article will focus on the meanings of "environment" and "learning environment" in geography education. The concept of an environment, even though it may seem like one of the core concepts of geography, is missing from two of the three lists shown in Table 1. Despite this, I argue that it *is* one of the central concepts in geography but, because of the various ways the word is used in everyday language, in different disciplines and also in geography, its essence is often dismissed. My aim is thus to introduce some of the many ways of understanding its content. Earlier, I wrote about this theme in the context of environmental education. Then I realized how, even when the concept of an environment is inevitably the most essential in environmental education, its content has seldom been defined; instead the emphasis has been put on how the environment has been dealt with in educational practices (Tani, 2006). In that context, I also described three approaches to "environment" which have been used in different disciplines (see also Suomela and Tani, 2004). I will describe these in the following paragraphs.

The first dimension can be called the "environment as an entity". In the natural sciences, "environment" is often treated as something that is detached from the observer. It is thought that knowledge can be obtained via careful observation and scientific research, which often means using different techniques of measurement. In this approach, "environment" is thus seen as objectified and neutral. Even though this idea is typical in the natural sciences, it can also be found in many other fields; for example, in studies of environmental economics the environment is treated as an entity that can be measured by its economic values (Tani, 2006). Ingold (1993) has compared this dimension with the astronaut's perspective on the globe; seeing from a distance and being detached from it as an outsider, an astronaut as a seemingly neutral voyeur can observe the environment as a whole.

The second dimension covers approaches where an environment is understood as always subjective and unique, defined by the person who explores it. This dimension can be called the "environment as experienced" (Tani, 2006). It is thought that the observer is the centre of an environment which cannot be observed from outside without attaching personal meanings to it. Subjective experiences, a sense of place, aesthetic values and sensory observations of the environment are typical features of this approach, which can be seen in the studies of many humanistic sciences. Environmental psychology, although often applying (natural) scientific methods, places the individual's relation to his/her environment into the focus of the studies. Humanistic geography, originated from the 1970s, approaches environments from this angle. Ingold (1993) has described this dimension as thinking of an environment as an individual's lifeworld – or as spheres where life is situated and which are perceived from within.

Even when Ingold's (1993) conceptual divide between "globes" (seen from outside) and "spheres" (experienced from inside) works well when different approaches to "environment" are investigated, I would still like to add one dimension, that of the "environment as socially and/or culturally constructed". This dimension highlights social and political power in the process of creating meanings for the environment and, in doing so, combines personal value-laid experiences with scientific observations, seeing them from the perspective of representations which are created from the environment in question (Tani, 2006). This third dimension is typical of environmental policy and environmental protection, to name just some examples. "Environment" here is understood as *our* common environment, including personal but also shared – and often conflicting – views on how it should be treated.

The above-described three dimensions of the environment can all be applied in geography education and be used as conceptual "tools" for the analyses of geography curricula. By identifying them in curricula and, for example, in geography textbooks, we can investigate how geography is comprehended in different contexts and what kind of image of people-environment relationships are being created in the school context. All of these dimensions are needed in order to enhance students' knowledge, personal interest and willingness to act in an environmentally responsible way. This leads to the role of education for sustainable

development (ESD) in the context of school geography. Therefore, I want to raise the question of how geography education is related to the ideas of different environments in the context of ESD and environmental education. What type of environment should we talk about then?

In education for sustainable development, all four dimensions of sustainability should be taken into account. These are ecological, economic, social and cultural sustainability. These dimensions also include different approaches to "environment". The ecological environment, which usually in schools is explored as "nature", is just one of the many dimensions of the environment. The majority of the young people of today grew up in cities, and for them, their everyday (urban) environments should also be explored when environmental education is hoped to have some effect on enhancing their growth as environmentally responsible citizens. The ecological environment is thus not enough, but also built, social and cultural environments should be integral parts in geography teaching. By paying attention to these, the multifaceted character of sustainability can be explored.

4. What kinds of meanings are attached to the concept of the learning environment?

I have tried to clarify some of the many meanings of the concept of environment in this article. By this overview I have attempted to show how there is no shared view on how to talk about "environment" in geography or other disciplines. This can make it difficult to conduct multidisciplinary research studies because finding a "common language" is not easy. The same problem is also reflected in the geography taught in schools. Next, I will continue by exploring the concept of a learning environment, which has also been used in many, often controversial, ways. In order to obtain an overall idea of its most common meanings for this article, I started by making a Google image search of learning environments. The first results are shown in the print-screen image presented in Figure 1. Twenty-seven different images of learning environments were shown on the display, most of them representing either pedagogical models of learning or the structures of virtual learning environments.

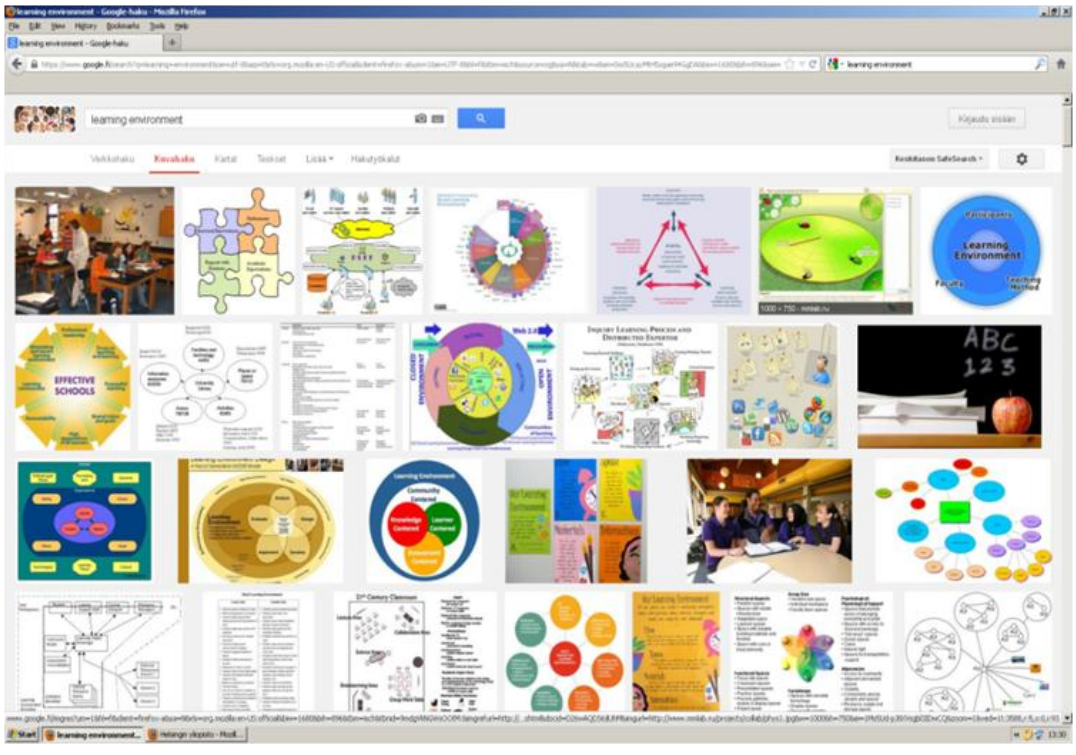

Figure 1. Print-screen image after a Google image search with the keyword "learning environment" (copied on 8 March 2013).

Three of the images are photographs, attaching the idea of a learning environment to the context of a classroom. What is missing are any images of physical environments outside the school context. For a geography educator this is a confusing observation: is it really so that when we speak about learning environments, we exclude all the physical and social environments which are not present on the screens of computers or inside classrooms? Is this understanding of learning environments also shared by geographers? After this confusing image search result, I wanted to take a closer look at the ways in which learning environments can be defined, especially in the context of geography education.

Next, I will introduce some of the many dimensions which can be attached to the idea of learning environments. I have selected four aspects of the concept: the educational context where learning is situated, specially planned environments for learning, the learner's local environments, and virtual environments. These will be explored in the following sections.

5. Formal, informal and nonformal environments for learning

Many researchers of education have been interested in studying learning not only in formal but also in informal and nonformal contexts. *Formal learning* refers to education which is practised in institutions especially planned for the purpose of teaching and studying; the most obvious examples of these are schools. Learning is organised there by authorities, and the aims, contents and the hoped outcomes of education are normally defined in curricula, which are applied in teaching. *Informal learning* refers to learning that occurs in environments and contexts which are not specially planned for that purpose. *Nonformal learning*, on the other hand, occurs in a formal setting, but it is not formally planned or recognized. The widely used definitions of these three concepts are published by the European Centre for the Development of Vocational Training (Cedefop, 2003). The difference between informal and nonformal learning has been seen as arbitrary on many occasions, and there is thus no unified understanding of these concepts (a concise analysis of the different meanings of the concepts has been presented by Colley et al., 2002).

From the viewpoint of geography education, formal, informal and nonformal learning can be explored on the basis of their relation to the physical settings where learning is situated. This means that learning environments could be divided into two aspects: learning which occurs in environments which are specially planned for learning, and learning which happens elsewhere. This kind of definition would mean that formal and nonformal learning environments could be explored together.

6. Specially planned spaces for learning

Physical learning environments refer to spaces which are planned and used as special places where teaching and studying occurs. Schools and especially classrooms can be regarded as representatives of this type; they are built environments which have been designed for the purposes of learning. Traditionally, classrooms were designed as "tight spaces" in which the furniture could only be arranged in one way: the teacher's desk was placed in the front of the classroom, while the students' desks were arranged in rows so that the students faced the teacher and were able to follow teaching without interruption. Contemporary classrooms are instead designed so that the space configuration is easy to change. The room plan thus allows varied learning methods and activities, and students' and teachers' roles are more flexible. This type of "loose space" reflects modern conceptions of learning, which are based on the students' active role in the knowledge-construction process (about tight and loose spaces, see Franck and Stevens, 2007). Certain elements of a classroom design, for example, the use of colours and light, connectivity and flexibility, can have a positive impact on students' learning. This makes it clear that designing learning spaces should be taken seriously when new schools and other spaces for formal education are planned (Barrett et al., 2013).

The students' role in designing spaces for

learning has been acknowledged, and in many cases students have been included as active and competent agents in planning both indoor and outdoor spaces in schools together with adult professionals (e.g. Koralek and Mitchell, 2005; Clark, 2010; Dudek, 2011). In these collaborative projects, the aim is to make "places for children" (special places planned for children, often in educational institutions and in the context of organized hobbies etc.) that could also become "children's places"; that is, spaces which children feel that they belong to and which have some special meaning for them (about places for children and children's places, see Rasmunssen, 2004).

Specially planned spaces for learning can also be found outside the school buildings, for example, in science centres, museums, nature schools and botanical gardens (Peacock and Pratt, 2011; see also Braund and Reiss, 2004). These can be used as sites for learning in the context of formal curricula or as places where children and young people learn during their free time, for example, in the company of their parents or friends.

7. Local learning environments

Students' immediate environment, which has been part of their everyday lives, has traditionally offered a natural starting point for geography teaching especially in primary schools. Following the traditions of Jean Piaget and other developmental psychologists, geography educators have based their instruction first on the environments which have been closest and thus are the most familiar to their students: students' routes from home to school, their classroom and the school yard are perhaps the most common examples of environments from which studying geography has begun. After these, more remote and larger areas offer interesting objects for study and exploration.

Local environments have been popular starting points in geography teaching for many reasons. I will give one example from Finnish history: during the first decades of the history of independent Finland in the early 20th century, studying the local environment during the first school years was regarded as a way to construct students' local identities, which would later work as a base for a national identity. Later, after society became more open and multicultural, the importance of a national identity based on people's low mobility and therefore their strong sense of place has diminished. After a period when international interaction was seen as the opposite of local studies (this was the case in Finland in the 1970s), the value of both local and global perspectives has been recognized in geography curricula for schools.

Continuing with my Finnish example, the next problem with the inclusion of local neighbourhoods in geography teaching arose from the rapid urbanization of society during the 1960s and 1970s and afterwards, people's increased mobility, and increased immigration since the 1990s. Old ideas of Finnish identity, people's sense of place and their close relation to natural environments were no longer relevant, and this caused some confusion, for example, in geography education. The majority of Finnish children and young people of today grew up in urban environments, which should be taken as an integral part of teaching geography. Despite the broad changes in society, urban neighbourhoods have not gained any central position in school geography – not even when it is recognized that it would be motivating for students to be able to bring their own everyday experiences into school and thus build links between these two spheres of life (see e.g. Béneker et al., 2010).

In the age of globalization, young people gain first- and second-hand experiences from places which are located far away from their everyday surroundings. Increased tourism has made it easier and cheaper to travel, and thus many children travel abroad during their holidays with their families. In addition to this, the increase of information flows through different types of media – television, movies and most powerfully, the Internet – has brought remote places close to children's daily lives (Tani and Robertson, 2013). In this context, geography educators must rethink how to deal with students' local environments in their teaching: what type of role should these everyday spaces have in geography lessons?

8. Virtual learning environments

The concept of a learning environment is often understood as a synonym for technological or virtual learning environments, which are Internet-based computer programs designed for teaching and studying online. For example in Finland, the Internet started to be used in teaching in the middle of the 1990s, and after that, "learning environments" have most often been connected to these technological innovations. The use of this concept is varied and dependent on the context. Most often, though, as Figure 1 shows, it is connected to technological environments – online platforms – where the active role of learners and interaction with other users of the same virtual spaces are central features. Knowledge is seen as constructed in collaboration with others, and the teacher's role is more like an enabler and co-learner than any pedagogical authority.

In geography, interactive online learning environments are often used in universities and increasingly also in schools. "Virtual classrooms", which are specially planned platforms for educational purposes, are widely used, but also social networks, which develop "online learning communities" where all the participants have an active role in developing the community for their shared purposes, are increasingly popular. In addition to these, geography educators have developed new ways to use technology in teaching, especially with regard to cartographic skills. Information and communication technologies (ICT) in teaching have gained much attention worldwide, and research on teaching and learning applications on school and university levels (e.g. Drennon, 2005; Bednarz and van der Schee, 2006; Johansson, 2006; Gryl et al., 2010; Lukman and Krajnc, 2012) has been widely reported. Some researchers have paid special attention to the potential of collaborative learning in virtual settings, while others have put an emphasis on the learning outcomes of projects where Internet-based learning environments have been applied.

In recent years, more attention has started to be paid to opportunities for combining children's everyday observations and experiences in their daily environments by using GIS and online learning environments in teaching (e.g. Favier and van der Schee, 2009) and in planning (e.g. Wridt, 2010). In this case, "learning environments" have begun to encompass technology-based cartographies with real-world environments where students' everyday environments have been brought into schools and connected with virtual environments. This means that the boundaries between formal and informal learning environments have been crossed and, at the same time, different dimensions of environments (physical, social and cultural, as well as the ideas of "globes and spheres") have also been brought together.

9. Conclusions: Learning geography in different environments

My aim in this article has been to make an overview of the concepts of the environment and learning environment from the perspective of geography education. This type of descriptive analysis can be criticized for its shallowness, which I am well aware of and ready to admit. Despite all the limitations of the analysis presented here, I hope that I have been able to show how complex and multifaceted these concepts are. "Environment" can without a doubt be seen as one of the many core concepts of geography, but what we mean by that concept varies remarkably. This often causes some confusion and misunderstanding; for some, "environment" means foremost the ecological environment (nature), while others may connect it to all kinds of living environments (nature, the built environment, the social and cultural environment etc.). In the context of geography education and curriculum planning, these different dimensions should be kept in mind.

The concept of learning environment also holds the same type of mixture of different meanings. In this article I have explored four different types of meanings for it, the location of learning, specially planned environments for learning, the learner's own – often local – environment, and virtual learning environments. All of these can be explored from the perspective of geography education, and all should be part of the school subject. The first

definition highlights the importance of the physical context in which learning occurs and enables the investigation of the meanings of students' everyday environments in education. For geography education, this could mean an increasing attention to the geographies of children and young people (e.g. Holloway and Valentine, 2000; Aitken, 2001; van Blerk and Kesby, 2009; Holt, 2011) and the potential to make students' lifeworlds – their experiences and interests – an integral part of geography lessons. The second definition pays special attention to environments where young people spend a great amount of their time – the schools – and highlights the idea that students should have a say in planning and designing learning spaces which are meant for them. For geography education, this could offer interesting links to planning and participation. When students participate in designing their learning spaces, they can learn to evaluate their own and other people's environmental and aesthetic values and negotiate with other users of the same space.

The third dimension presented in this article – local environments – has traditionally been the most commonly used in geography education. Depending on the context and the content of geography courses, local environments can be explored, for example, from the viewpoint of their physical features, land use, the residents' opinions of them or from the students' own perspectives by investigating their observations, experiences, attitudes and values. These are just some of many possible examples.

The fourth dimension (virtual learning environments) has gained the most attention in recent years in geography education. New virtual classrooms, social networking communities and ICT-based cartographic applications have been integrated into the geography taught in schools. Researchers of these fields have emphasized their potential to enhance the active role of students in studying and learning and to increase their motivation. Some studies have also shown the many obstacles still in the way from teachers' reluctance to adopt new innovations, their limited ICT skills or limited access to these innovations. Overcoming these obstacles may take some time, but many studies already show the positive effects of bringing technology into geography classrooms.

The popularity of new technologies and their applications in geography education have, despite their obvious potential, also brought some possible problems with them. For example, when curriculum planners, textbook writers and teachers become too eager to concentrate on ICT-based learning in virtual online environments, they can easily forget the "old-fashioned" everyday environments in which their students, nevertheless, live their lives. Fortunately, this does not have to be the case. As I have shown earlier in this article, students' active role in studying geography can be enhanced in many ways: by taking their everyday experiences into account in geography curricula, by enabling their participation in planning the environments where they spend much of their time – both inside and outside the school, and by occasionally taking geography lessons outside the classrooms. New technologies can also take all of these "traditional" ways into account by combining students' own experiences with the use of information and communication technologies and by encouraging them to share their ideas about their environments with others, both online and in physical geography classrooms.

To conclude, I would like to emphasize the potential of geography as a discipline and as a school subject to help in understanding the multifaceted character of the concepts of environment and learning environment. Geography has always built bridges between physical and social sciences, which has added to these versatile understandings of "environment". As I mentioned at the beginning of this article, the educational sciences have started to discuss place-based education in recent years, with practically no reference to geographical studies. Place-based education and studies of learning environments are research fields in which geography, with its multidisciplinary character, could offer a valuable contribution to education sciences. At the same time, geographers would be able to disseminate their research findings to larger audiences.

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