

Nature offers ideal places to learn

I would very much like to thank you for the invitation to be part of this Summer School.

I would like to introduce myself first:

My name is Robert Nehfort. I am a social pedagogue, consultant, and adult educator. I have been teaching and carrying out research in the field of School development at Burgenland University of Teacher Education since 2010. One of my main focuses is to accompany the natural park schools in cooperation with Andrea Sedlatschek and Thomas Böhm from Burgenland Regional Management. We are particularly concerned with the following questions from a school developmental and pedagogical perspective.

- Can the excursion not only complement the lessons but be the core of the lessons?
- What didactic principles have to be followed by excursions that meet this demand?
- In what ways do tour guides and teachers have to cooperate in order to meet this requirement?
- What are the structural issues to be clarified?

For the theme of this summer school, the second question seems particularly interesting to me and it reads a little different:

What must the immersion in nature entail if learning is to take place, which is suitable to replace the teaching at the school.

Why is this question so important?

Easy: as long as we can not give any conclusive answers, from a teachers' perspective the excursion is a time that is missing for the lesson. In a time of increasing focus on output and quality control, this is not an insignificant factor. The excursion can therefore only be used occasionally and the chance to experience nature as a real learning tool can only be used to a limited extent.

I will therefore try to outline a theory model, which, on the one hand, covers the whole spectrum from the theory of knowledge to the didactics, and at the same time provides a very concrete handbook for practice.

I would like to comment on the following questions:

1. **How does learning work?**
2. **Why do we learn?**
3. **What characterizes a nature-learning center?**
4. **What exactly does this mean for the teachers?**

Then I will summarize the results and try to illustrate them with examples.

I begin with the question of the outcome of the learning process:

1 Why do we learn?

Education can be seen as a social and individual strategy to master the fear of the future. The foreseeable or unforeseeable future is confronted with education. With a good education the challenges of the future are better managed and thus the existence and that of the species secured.

What are the challenges of the future?

Until the middle of the 20th century, we were able to anticipate this, at least since the turn of the century we know that we do not know which challenges will be overcome in two or three decades.

The goal of education can therefore no longer be focused on facing concrete challenges. Overcoming this insecurity can be made possible by developing the ability to face new challenges that have never been seen before.

Hartmut Rosa got to the heart of it in his 2016 book "Resonanz": **We learn with the aim of a successful relationship with the world** (vgl. Rosa, 2016, S. 52ff).

The question arises:

2 How does learning work?

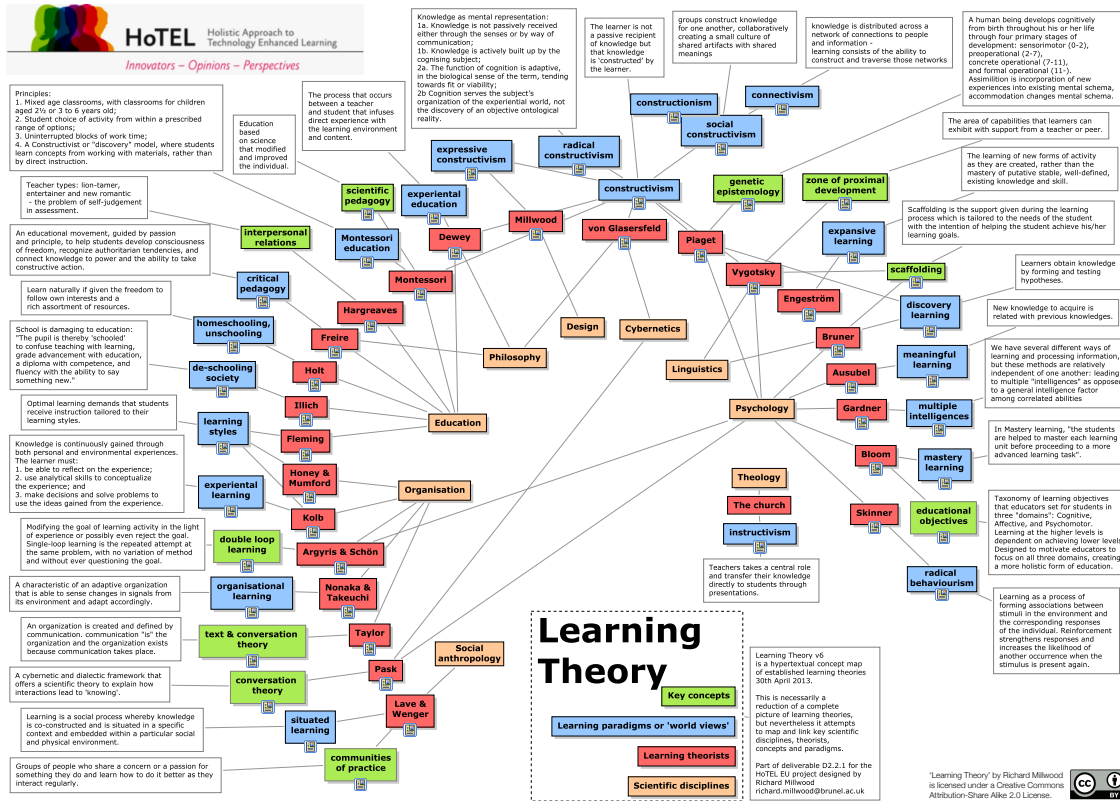


Illustration 1: Learning Theory (Millwood 2013)

The theories of learning are **varied** (vgl. Millwood, 2013) and closely linked with the knowledge theories. We thank Jean Piaget and his theory of epistemological genetics (vgl. Piaget & Fatke, 1981) for a model of learning that is pragmatic and theoretically useful. Cognition does not exist on the outside and must be accepted (recognized) (empiricism) nor is it construed exclusively in the interior on the basis of the sensory input (constructivism), it is the result of the interaction between the learning subject and the learning object. It follows that the possibility of recognizing actionable possibilities depends on not only the subject, but also the subject of learning being subjected to transformation. If this theory of learning and knowledge is combined with what is currently regarded as authoritative in the topic of competence orientation, there is a pleasing congruence.

With the term "competence", I would like to describe the ability to act in accordance with Weinert's capacity for action, including knowledge, skills, and experience. (Vgl. Weinert, 2014, S. 28) This can be differentiated into professional and interdisciplinary competencies as well as metacompetencies. While professional competences refer to the material world, the interdisciplinary competences, such as co-operation and

being able to handle conflicts, refer to the social world. Metacompetences such as reflexive capacity or the ability to listen relate to the learning subject itself. With Piaget one could say:

- The professional competencies arise from the interaction between the subject and the object and educate in knowledge, skill, experience.
- Interdisciplinary competencies arise from the interaction between subject and subject and educate in knowledge, skill, experience.
- The metacompetences arise from the interaction of the learning subject with them self and educate in knowledge, skill, experience.

Hartmut Rosa describes three very similar central resonance axes which are important for a successful relationship with the world.

- The axis of the relationship to the social world (horizontal axis of resonance (vgl. Rosa, 2016, S. 73ff u. 341ff))
- The axis of the relationship to the material world (diagonal axis of resonance (vgl. Rosa, 2016, S. 73ff u. 381ff))
- The axis of the relationship to the "primordial form of existence", to metaphysics (vertical axis of resonance (vgl. Rosa, 2016, S. 73ff u. 435ff))

The relationship between the world is both the basis and the result of learning, and we can grasp this complex phenomenon epistemologically and theoretically, sociologically and didactically with the help of the theories of Piaget, Rosa and Weinert, so that we get a practical and coherent picture .

Learning for a ...

Knowledge - Ability - Understanding			
Professional competencies	Learning happens in interaction	Subject-object	Diagonal axis of resonance
Interdisciplinary competencies		Subject-subject	Horizontal axis of resonance
Metacompetencies		Subject with itself	Vertical axis of resonance
Didactic model by Weinert	Cognitive and Learning Theoretical Model by Piaget	Sociological model by Rosa	

... successful relationship with the world

Illustration 2: Learning and world relationship (Piaget, 2010; Piaget & Fatke, 1981; Rosa, 2016; Weinert, 2014)

This approach can also be connected to an emancipatory-humanistic theory of education, as represented, for example, by Werner Lenz. In his book on adult education published in 1987, he meaningfully formulated: Education is the result of the individual's struggle with himself, his fellow human beings, and his environment. (Vgl. Lenz, 1987, S. 13ff)

3 What characterizes a nature-learning center?

3.1 Learning needs places

We owe the extremely clear distinction between places and non-places to Marc Augé (vgl. Augé & Bischoff, 2012) and he describes the growing number of non-places in our modern society. While a Place is characterized by its inscribed and symbolic meaning ("anthropological place" (Augé & Bischoff, 2012, S. 86)), a non-place is a space constituted with respect to a particular purpose. (Vgl. Augé & Bischoff, 2012, S. 96) Places are shaped by the identity of the individual, their language, the rules of intercourse, and the physical space they design. Non-places are characterized by the contractual relationship that their users enter it with. "The space of the non-place creates no particular identity and no special relation, but solitude and similarity." For learning in the sense described above, we need Places. The place of learning must, in fact, be a place according to Augé, in which man, in his condition, experiences himself in relation to things, fellow human beings, and ultimately himself. Hanna Arendt writes in "Vita Activa": "... things would be a heap of unrelated articles, a non-world, if they were not the conditioners of human existence." (Arendt, 2014, S. 19).

In nature, we find a real world that confronts us with our condition and asks us to act (according to Hannah Arendt).

The conditions of the institution school (purpose, terms of use, conditions of success, anonymity and similarity) make a lot of effort necessary to establish the school as a place in the sense of Augé,

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3.2 What are the principles of competence-oriented learning, wherever it takes place?

From the learning model described in chapter 3, four principles can be derived:

Principles of competence-oriented learning	
Principle 1:	<p>Teaching is an offer and means</p> <ul style="list-style-type: none"> • offer inspiration • offer actionable space • offer space for contemplation
Principle 2:	<p>Learning takes place in accepting these offers.</p>
Principle 3:	<p>Knowledge, skill, and experience form in the interaction through the processes</p> <ul style="list-style-type: none"> • Assimilation, • Accommodation and • Adaptation. (Vgl. Piaget, 2010, S. 43ff u. 53ff) <p>The difference is the central experience, and learning this difference does not follow the familiar, but the unknown, the surprising (vgl. Lyotard, Engelmann, & Pfersmann, 2012, S. 142). The basis of learning is the question to which one knows no answer.</p>
Principle 4:	<p>The legitimation of knowledge is not subject to the principle of probation, i.e. it is legitimized in the concrete social context and not through an external authority (vgl. Gelhard, 2011, S. 141ff). It therefore has no finality.</p> <p>Legitimation takes place either in discourse (vgl. Habermas, 1995b, 1995a) or in the acknowledgment of the present unbridgeability of the different experiences of difference (vgl. Lyotard u. a., 2012, S. 143ff).</p>

Illustration 3: Principles of competence-oriented learning

3.3 Why is nature an ideal learning place for competence-oriented learning?

The chance of natural learning places is that the realities can be used meaningfully by the learner, ie for concrete learning goals in the areas of knowledge, ability, understanding for learning impulses on the three levels of interaction, subject - object, subject - subject and subject can be used with themselves and thus the learning place becomes a resonance space according to Hartmut Rosa (vgl. Rosa, 2016).

Nature provides an abundance of offers. (Principle 1)

These offers are attractive when appropriately supported. (Principle 2)

Nature raises many (real) questions. (Principle 3)

Nature offers a space that provides the answers to these questions, and often has the potential to give immediate feedback. (Principle 4)

"Successful educational processes [...] are characterized by the fact that each specific world section (the *World of numbers*, the *physics formulas*, the *workings of bacteria*, the *Expressionism poems*, the *History of the 30-year war* Etc.) can be "given a voice" and brought into a discussion. (Rosa, 2016, S. 74) For this nature offers the ideal conditions when accompanied by appropriate support.

4 What exactly does this mean for the teachers?

Institutional learning (wherever it takes place) is characterized by the fact that the roles (vgl. Pechtl, 1991, S. 202) teachers and learners, and thus the responsibilities and the resources are clearly regulated.

The great opportunity for institutional learning (both for teachers and learners) in "natural classrooms" is that it doesn't take place in a representation of the world, but in the real world itself, and the dialogue isn't with a representation, but with the real world.

For teachers, this does not necessarily mean the need to be the dialogue partners (they do not have to represent the subject of learning) but they play a role as (vgl. Pechtl, 1991, S. 202) the intermediary, the translator, the attendant in these dialogues with the existing learning object (nature and the people in this nature).

The necessary structuring of an existing place into a place of learning follows the following scheme:

Interaction Levels v v v	Learning Areas		
	Activity of the teachers		Activity of learners
	1 Knowledge	2 Ability	3 Experience
A <u>Professional Competencies</u> Interaction: Subject-object (H. Rosa: diagonal axis of resonance)	inspiration> offers v Acquire knowledge	Set actions	Recognize difference
B <u>Interdisciplinary competencies</u> Interaction: Subject-subject (H. Rosa: horizontal axis of resonance)	Share knowledge	Δ offer <room for action> v Coordinate action	Identify differences as a resource
C <u>Metacompetencies</u> Interaction: subject with itself (H. Rosa: vertical axis of resonance)	Connect knowledge with other pieces of knowledge	Develop critical criteria for validity on the basis of rationality	Δ <Room for reflection offers Legitimation according to the principle of trial (not tests)

Illustration 4: Structuring the place to become a learning location

5 Summary and example

I have tried to sociologically, epistemologically and theoretically and didactically establish and connect the opportunities that nature offers as a learning space and which seem intuitively close to us. Nature is a classroom that is not designed but used and in which basically everything can be learned. This requires a natural impartation

- which deliberately offers inspiration, space for action and reflections,
- which can be adapted to specific learning objectives (in the areas of knowledge, understanding, doing),
- that addresses all interaction levels,
- thus the accompanying natural experience becomes a building block of successful world relationship.

Specifically, this could be as follows:

Interaction Levels v v v	Learning Areas		
	Activity of the teachers	Activity of learners	
	1 Knowledge	2 Ability	3 Experience
A <u>Professional Competencies</u> Interaction: Subject-object (H. Rosa: diagonal axis of resonance)	inspiration> offers v Information about the different types of text: Note, ban, offer, ...	Learners photograph all the texts that grab their attention	Learners make notes on the differences they notice.
B <u>Interdisciplinary competencies</u> Interaction: Subject-subject (H. Rosa: horizontal axis of resonance)	The observations are compared with the contents of the inspiration texts.	Δ offer <room for action> v The learning group goes a bit of one way. The start and finish have been clarified	I: The individual's experiences are brought together. II: The small group's experiences are brought together.
C <u>Metacompetencies</u> Interaction: subject with itself (H. Rosa: vertical axis of resonance)	Adding other (individual) experiences with path texts.	On the basis of this comparison, each individual develops a catalog of categories of texts and links each category with structural features.	Δ <Room for reflection offers Each one reflects on which reactions are triggered by the category (+the specific structural features observed).

Illustration 5 : Example

Lesson planning

Extended lesson planning (as an option):

- Link with the objectives of the curricula, the didactic principles, the educational standards, the teaching principles and the competency grids
- List of life-oriented proofs of achievement, competence proof,
- With regard to the targets and the legal framework conditions.

Sequence plan:

1. Information on texts (A1)
Information about the different types of text: Note, ban, offer, ...
2. Hike with a task (B2, A2, A3)
The learning group goes a bit of one way. Start and finish have been clarified
Learners photograph all the texts that grab their attention
Learners make notes on the differences they notice.
3. Small Group Work (B3I, B1)
The individual's experiences are brought together.
The observations are compared with the contents of the inspiration texts.
4. Individual work (C1)
Other (individual) experiences with texts are added.
On the basis of this comparison, each individual develops a catalog of categories of texts and links each category with structural features.
5. Small Group Work (B3I)
The individual's experiences are brought together.
6. Summary (B3II)
The small group's experiences are brought together.
7. Individual work (C3)
Each one reflects on which reactions are triggered by the category (+the specific structural features observed).
8. Summary (B3I, A1)
The individual's experiences are brought together.
Information about the different types of text: Note, ban, offer, ...

Schedule:

Variant A: In one long unit:	Variant B: In several units:
1-3. Break	1. Preparation for the excursion in school-3.
4-6. Break	2.-3. Excursion 1. part
7-8	4. Homework
	5-6. Follow-up on the excursion in the school
	7-8 Excursion 2. part

This may look complicated at first glance.

When you look closely, you'll see that when you use this scheme several times, you'll see routines and patterns that simplify it in practice.

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Mag. Dr. Robert Nehfort

Pädagogische Hochschule Burgenland
Institut für Personal- und Schulentwicklung an allgemein bildenden Schulen

Thomas Alva Edison Straße 1
7000 Eisenstadt
fax: + 43 (0)5 9010 30 - 1
email: robert.nehfort@ph-burgenland.at
www.ph-burgenland.at

Pädagogisches Zentrum Langeck
7442 Hauptstr. 29
email: nehfort@me.com

mobil: +43 (0)664 3147192
