



**Directorate for Education
Centre for Educational Research and Innovation (CERI), OECD**

Innovative Learning Environments (ILE)

INVENTORY CASE STUDY

The Beatenberg Institute

Switzerland (Bern)

The learners are aged 12 to 17 years, and often arrive at this private boarding school after negative school experience. The learning is organized in mixed-age and mixed ability teams, with both individual and group learning. The regular school day lasts from 7am to 6pm. The time units are longer than single lessons, and cover subject setting (mathematics, German, French, and English), 'Aktivus' (for Science, arts, creative, manual, and sports interests), with the majority devoted to individualized learning in learning teams. The last three units of each week are devoted to summing up, reflecting on the activities of the week, presenting results to the community, updating portfolios, and finalizing the weekly work plan. Each learning team has access to a big workroom as an open plan space in which learners cooperate and engage in peer learning. Each young person has a personal workplace and 'home base'. The ordinary programme of instruction is regularly interrupted by several days devoted to projects and service learning.

This Innovative Learning Environment case study has been prepared specifically for the OECD/ILE project. Research has been undertaken by Erich Ramseier together with Anne von Gunten from PHBern – University of Teacher Education, following the research guidelines of the ILE project.

© OECD, 2012.

© PHBern – University of Teacher Education, Bern, Switzerland, 2012.

PHBern
Pädagogische Hochschule

**Institute for Research
and Development**
Fabrikstrasse 2
CH-3012 Bern

T +41 31 309 22 11
F +41 31 309 22 19
forschung@phbern.ch
www.phbern.ch

The Beatenberg Institute

A Case Study of the OECD Project “Innovative Learning Environments” (ILE)

Erich Ramseier, Anne von Gunten
January 2012

Table of Contents

Introduction	4
A Context and aims of the Beatenberg Institute	5
A.1 The educational system in Switzerland	5
A.2 The Beatenberg Institute as part of the educational system	5
A.3 The basic principles of the learning environment	6
A.4 On the history of the Beatenberg Institute	8
B Characteristics and structure of the learning environment	9
B.1 Enrolment	9
B.2 Time schedule of the learning environment	10
B.3 The teachers' role(s)	10
B.4 Facilities	11
B.5 Subject setting	11
B.6 Learning team	12
B.7 <i>Aktivs</i>	14
B.8 <i>Special Days</i>	15
B.9 Planning and assessment of the learning	16
B.10 Skills matrix	19
B.11 The boarding school	20
B.12 School administration	20
C The nature and quality of the learning	23
C.1 Individualised learning	23
C.2 Self-directed learning	25
C.3 Reasonable demands	28
C.4 Effective feedback	29
C.5 Learning as a social process	30
C.6 Connected learning	32
C.7 Learning motivation	33
D Impact and effectiveness of the Innovative Learning Environment	36
D.1 Impact on the pupils	36
D.2 Impact on school development	36
E Conclusions	37
F Appendix	39
F.1 Methodology	39
F.2 Documents on the Beatenberg Institute	40
F.3 Network around the Institute Beatenberg	44
F.4 References	45

Introduction

This case study¹ forms part of the project “Innovative Learning Environments” (ILE) which is directed by a team of the *Centre for Educational Research and Innovation* (CERI) of the OECD (www.oecd.org/edu/learningenvironments). The aims of this project are threefold: firstly, to gather scientific findings on effective contemporary learning and on the design of appropriate learning environments. In the context of this project, the term “learning environment” is used to denote the whole range of teaching and learning offered by a school or other educational institution. The second aim is to document a number of inspiring practice examples of such innovative learning environments in case studies like the present one. The third aim is to develop strategies for the promotion of innovative learning in order to provide a basis for educational development and reforms.

There are over 25 participating countries and regions worldwide, each with its own educational system. In Switzerland, the project participants are the cantons of Berne and Ticino. On behalf of the Department of Education, the Bernese part of the project is carried out by the PHBern University of Teacher Education. In a first step, all nine participating schools wrote a description of their learning environment using a standard form specified by the project organisers. In a second step, three out of the nine schools were chosen in agreement with the OECD to be described in more detail in a case study: the one-room school in Lindental, the Beatenberg Institute, and the Reosch School.

The Beatenberg Institute is a private boarding school for pupils from grade 5 to grade 10. It is attended by roughly 60 pupils whose motivation and general situation at the public school of their place of domicile was in some way dissatisfactory.

The Beatenberg Institute is largely oriented towards the pupils’ personal educational goals and requirements, and it explicitly aims to make the pupils “fit for life” (cf. section A.3). The aim is to prepare the pupils for secondary school – e.g., an apprenticeship or grammar school – and in particular to foster their personal skills (*Selbstkompetenz*, i.e. ‘self-competence’) as well as their ability and willingness for lifelong learning, which includes learning skills (‘learning to learn’) and joy in learning. According to the educational concept of the Institute, it is a prerequisite that the pupils are responsible for their own learning and that the demands made on them are tailor-made to their individual abilities. This approach is chosen to ensure that they are able to meet these demands, which in turn results in a sense of achievement, an increase in self-confidence and higher learning motivation.

The learning environment at the Beatenberg Institute is consistently designed in such a way as to offer ideal conditions for self-directed learning. The learning environment is described in detail in Part B of this case study. The pupils spend half of their learning time in the so-called learning teams where they work on their individual tasks and cooperate with each other if necessary, and where they are supported and counselled by teachers. In the so-called subject settings the pupils receive two hours of instruction per week in each of the subjects German (language of instruction), English, French, and mathematics. In these subject settings the pupils are divided into ability groups, irrespective of age. In the late afternoons the pupils may choose from a range of offers, including sports, music, handicrafts, or topics from different subjects such as science or history. The ordinary programme of instruction and individual learning is regularly interrupted by special half-day or one-day events.

There are no traditional classrooms or curricula, no sequence of 45-minute lessons, tests, marks and other structures of traditional schools at the Beatenberg Institute. The direction and the focus of each pupil’s individual learning is instead governed by innovative structures like skills matrices, special planning tools, and first and foremost periodic interviews between the pupils and their respective personal coach – sometimes even together with the parents and a representative of the school administration.

¹ The present case study was translated from the German by Lukas Rosenberger, Berne. German version: Erich Ramseier, Anne von Gunten (2012). *Institut Beatenberg. Eine Fallstudie im Projekt „Innovative Learning Environments“ (ILE) der OECD*. Bern: PHBern. Both versions are available from the PHBern - University of Teacher Education (www.phbern.ch/fe/ile)

Part C of this case study describes how teachers and pupils perceive and assess the learning environment at the Beatenberg Institute and to what extent this learning environment meets the criteria for Innovative Learning Environments as formulated in the theoretical part of the OECD project. An important indication of the effectiveness of this learning environment is the fact that several schools in Switzerland and Germany have adopted elements of the Beatenberg model (Part D). Finally, Part E presents conclusions regarding the spread of innovative learning environments.

Context and aims of the Beatenberg Institute

A.1 The educational system in Switzerland

Public education in Switzerland lies in the responsibility of the 26 cantons. Compulsory schooling starts at age six or seven – depending on the canton – and lasts nine years. In most cantons, the pupils in grades seven to nine are assigned to school types with different proficiency levels. Those who graduate from the most demanding school type often transfer to grammar school, where they can obtain the *Matura*, the general qualification for university entrance. The majority of those who graduate from the other school types go on to do a vocational training.

The large majority of compulsory schooling institutions are governed and financed by the state. Pupils are allocated to schools based on their place of domicile, but it is also possible to attend private schools for compulsory schooling, provided that they are state-approved. In German-speaking Switzerland, between 2.5% and 3% of all pupils choose this option. The school fees for pupils attending a private school normally have to be raised by the parents.

A.2 The Beatenberg Institute as part of the educational system

The Beatenberg Institute is a private school situated in the Bernese Oberland, a charming alpine holiday region. It offers classes corresponding to grades 5 to 9 of compulsory schooling. In addition, it is possible to attend a further one-year course after grade 9 in which the pupils catch up on content and train skills that are necessary for their subsequent education and/or training. The school is attended by roughly 60 pupils. In March 2011 there were 36 boys and 22 girls between the age of 11 and 18 years; most of them were in grades 7 to 9. Most pupils are from the German-speaking part of the country. A mere 10% of the pupils at the Beatenberg Institute are day pupils, the rest are boarding pupils, most of whom are from outside the canton of Berne, mainly from the cities of Basel and Zurich (14: 374)².

² The code in brackets refers to the interview section(s) on which the statements made in the text are based. For example, the statement above is based on section 374 in interview 4. For further explanations cf. section F.1.



Figure 1: The building *Bärnermutz* of the Beatenberg Institute

The school fees, including the costs for boarding and supervision, amount to 60,000-65,000 Swiss Francs, which is roughly the same amount in US Dollars (I4: 335; I10: 178). These considerable costs alone make it clear that there have to be good reasons for choosing the Beatenberg Institute. The main reasons are serious learning disorders that have hindered acceptable educational success at the school previously attended. A common reason for such disorders is bullying, resulting in illness and refusal to learn. In some cases the family situation can also hinder school achievement.

Furthermore, some parents are simply dissatisfied with the public school and are looking for a better alternative (I4: 355; I6: 69, 75, 87 ff.). The Beatenberg Institute accepts children and youths with a broad range of school achievement, i.e. from pupils who have been diagnosed with learning disabilities to high flyers. According to the headmaster, roughly one third of the pupils or their parents have lived abroad or in another language region at least for some time.

Furthermore, some parents are simply



Figure 2: The building *Talblick* of the Beatenberg Institute

Due to the high school fees it might seem that only rich parents can enrol their children at the Beatenberg Institute. However, the pupils' municipalities make a considerable contribution, too, because the public schools are obliged to help seek solutions if they are not able to provide adequate opportunity for compulsory education. The Beatenberg Institute is considered such a possible solution, and in roughly two thirds of all cases the invoice for the school fees is sent to the public authorities, and indeed they often pay a considerable share. The exact cost allocation between the parents and the public authorities differs from canton to canton and is not known to the Beatenberg Institute. It must be noted,

however, that the Beatenberg Institute is considerably cheaper for the municipalities than a specialised institution for children and youths with behavioural disorders and learning disorders would be. However, if disciplinary problems predominate – e.g., in the case of drug use – the Beatenberg Institute is not suitable because the support and learning opportunities it offers are not geared to such problems (I10: 186 f.).

A.3 The basic principles of the learning environment

The Beatenberg Institute is dedicated to an educational concept and an understanding of learning that have been presented in numerous publications by the Institute's headmaster Andreas Müller (cf. section F.4) and which will be outlined briefly in this section. The primary aim of the Beatenberg Institute is to enable children and youths to meet and master the challenges of life successfully and optimistically, hence the school's motto "fit for life". This fitness is achieved by the interplay of sustainable and ready-to-use knowledge, skills and attitudes, including social skills (*Sozialkompetenz*) and the ability to assume responsibility for one's own learning and working (I10: 16, 26, 28). In view of the information overload in today's world and the rapidly changing society and working world, life-long

learning, an eagerness to learn and a high level of motivation are of the essence for everyone who wants to succeed in life. Learning skills are thus in high demand and must be developed at school.

At the Beatenberg Institute, learning is understood as an inner, constructive process. This process is not restricted to a school setting but runs informally in everyday life. Whenever content knowledge is acquired this inner process determines what is actually being learnt. Learning at school can only be successful if it takes this inner process into account. It is of vital importance to experience success in learning, since success provides an inimitable moment of satisfaction and a feeling of “I can do it” (Müller 2001: 35). It is based on commitments and is the result of many small victories over oneself. This kind of success leads to joy in learning and to a feeling of self-efficacy, i.e. the belief in one’s own abilities and skills to deal with challenges and meet demands. This is a vital requirement to constructively deal with the difficulties and challenges that can be involved in learning.

In order to experience success in learning, the learners’ abilities have to be challenged adequately. The content knowledge to be learnt must connect up to the knowledge already acquired and must be matched to important personal goals – in other words, it is always a highly individual process.

Learning at school is supposed to result in the development of relevant skills and attitudes. What is relevant to the individual pupil is not arbitrary but is determined by the societal context and by the social interaction with adults and peers. Such learning can only be purposeful if concrete goals are formulated and dedicatedly striven for. Besides, this process requires adequate methods. Learning progress must be assessed and reflected. If learning is to result in a deeper understanding and in the achievement of personal goals, it is impossible to delegate such important elements as the definition of goals, the planning, design and assessment of the learning process to a teacher. These elements are an integral part of independent and self-directed learning (‘generative learning’). In addition, the pupils’ thorough examination of their whole learning process contributes to the development of learning skills.

The Beatenberg Institute is very much geared towards this kind of independent, goal-oriented learning that takes individual preconditions into account and is at the same time integrated into a social framework. It aims to provide an ideal learning environment in which the pupils become entrepreneurs of their own learning. This declared aim has far-reaching consequences for (a) the role of the teachers, because this kind of setting requires them to be learning facilitators rather than imparters of knowledge; (b) the designing of the (physical) environment; and (c) the design and organisation of the learning arrangements. Concerning (c), the Beatenberg Institute differentiates between open settings, structured settings and optional settings. The way in which all this is realized as a concrete learning environment and its comparison with traditional schools will be presented in section B.

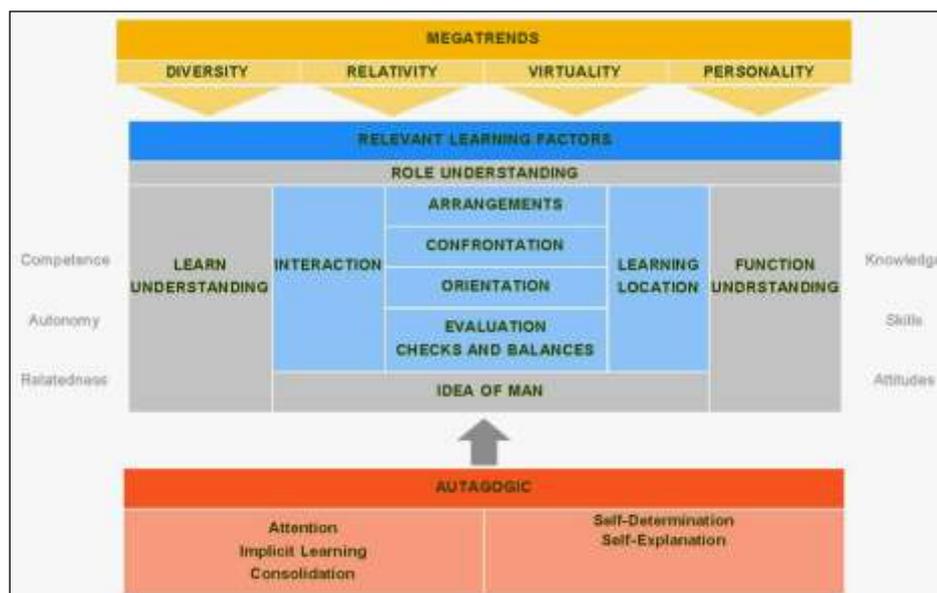


Figure 3: Sketch of a total view on teaching and learning
 (Source: www.updatenet.net/english, accessed February 2011)

Parallel to the construction of an innovative learning environment, a model describing general conditions and controllable factors of learning was created (cf. www.updatenet.net and the numerous publications listed in section F.4). Amongst other things this model shows how the interplay of factors that are relevant for learning can be shaped in line with the pupils' needs.

Though it is beyond the scope of this case study to discuss this model, Figure 3 gives an impression of how complex and multifactorial a notion of learning it is based on. The model draws upon the results of many scientific theories like, e.g., psychology of learning and motivation, cognitive science, neuroscience, educational science, constructivism and organisational development; however, ideas of progressive education (*Reformpädagogik*) are hardly ever explicitly referred to.

A.4 On the history of the Beatenberg Institute

The Beatenberg Institute evolved from a children's home that had been founded at the time of the Second World War. The present headmaster, Andreas Müller, took over the private boarding school from his brother-in-law in 1985, at a time when only few pupils attended the school and it was facing closure. Andreas Müller had studied applied psychology, specialising in career counselling, and had been working as a journalist for several years. In order to establish a successful and needs-oriented boarding school, he then studied topical scientific concepts of learning and teaching and implemented them in the Beatenberg Institute, creating a concrete innovative learning environment. In the process, the Institute became the core of a network of educational innovation and it continues to be developed further.

B Characteristics and structure of the learning environment

The Beatenberg Institute aims to foster independent learning and to account for the individual pupil's requirements and personal goals (cf. section B.1). To this end, traditional educational structures like age-based grades, 45-minute lessons, the state school curricula³, tests, marks and school reports have been abolished, and learning arrangements that not only allow but indeed require a great deal of self-organisation and freedom of choice have been created in their place. In these learning arrangements, it is the teachers' role to support rather than instruct the pupils (cf. section B.3). However, the learning content must not be chosen arbitrarily, because it is a declared aim of the Beatenberg Institute to prepare its pupils for life and to qualify them for secondary school or for an apprenticeship. Moreover, these innovative forms of learning need to be institutionalised in order to guarantee effective and well-defined learning opportunities of consistently high quality over a long period of time, independent of changes in the teaching staff.

Considering these conditions under which learning is to take place, new structures are necessary in order to cater to the pupils' individual learning needs. This chapter presents these special structures of the Beatenberg Institute: section B.1 presents details on the enrolment, followed by the Institute's time schedule (section B.2), the different roles of the teachers (section B.3), and the facilities (section B.4). The next four sections present the various learning arrangements: the structured setting is described in section B.5, the open setting in section B.6, and the optional settings are described in the sections B.7 and B.8. Section B.9 presents the tools and processes which the pupils use to plan and structure their learning and to assess and document their learning success. Section B.10 provides a description of the skills matrices that play an essential role at the Beatenberg Institute. Some of the peculiarities of life in the boarding school are presented in section B.11, and section B.12 deals with the school from an administration point of view.

In order to be able to name the many new structures, processes and tools, the Beatenberg Institute has created a large number of new terms or uses existing terms with a particular meaning. Several of these terms have in whole or in part been taken over from English – sometimes resulting in pseudo-English terms – in order to contribute to an atmosphere that differs from fusty, old-fashioned schools. Table 3 in section F.2 contains a glossary of this specific Beatenberg terminology.

B.1 Enrolment

Parents and their children usually consider the Beatenberg Institute if they are dissatisfied with the public school, typically if there is some kind of problematic situation which the public school is unable to solve. Enrolment in the Beatenberg Institute is possible anytime, not only at the beginning of the school year, and is always based on a well-founded decision made jointly by everyone involved. Prior to the enrolment the child or youth spends a trial week at the Beatenberg Institute in order to get to know the surroundings and future life situation. During this trial week, the Institute makes a psychological assessment as well as an assessment of the pupil's skills level in the various subjects. Based on the results of these assessments, the pupil's parents and the school discuss their mutual expectations and the goal of the pupil's attendance at the Beatenberg Institute and put their agreement in writing. At the Beatenberg Institute this is called *contracting* and is employed to avoid misconceptions and to guarantee common goals, e.g., with regard to the pupil's preparation for an apprenticeship (I4: 38, 42; I2: 286, 595; I6: 114 ff.). The whole learning environment is designed in such a way as to enable the pupils to focus on their individual priorities and to reach their personal goals. The mutual agreement on the pupil's learning goals is continually developed in appraisal interviews during the pupil's time at the Beatenberg Institute (cf. section B.9).

³ Instruction at the Beatenberg Institute does not follow a fully enunciated curriculum. For the school to be state-approved it only needs to provide evidence that the core elements of the Bernese curriculum for the school type with basic requirements (i.e. the lowest proficiency level) are covered.

B.2 Time schedule of the learning environment

There is a precise time schedule for living and learning in the Beatenberg Institute: the daily routine is determined by several different learning arrangements in which the pupils meet in varying social constellations. There are two notable differences to ordinary Swiss schools: firstly, pupils are not placed in age-based grades, and secondly, the usual sequence of 45-minute lessons does not exist.

The daily routine normally consists of four two-hour blocks with different learning arrangements (cf. Table 1). The pupils spend roughly half of their learning time⁴ in so-called learning teams (cf. section B.6) where they work on preassigned tasks determined by their individual programme. For each of the subjects German (first language and language of instruction), mathematics, English and French, a two-hour block is scheduled each week. In these so-called subject settings (cf. section B.5) the pupils are taught in groups formed on the basis of achievement. In the block called *Aktivs* (roughly translatable as ‘activities’, cf. section B.7) the pupils may choose from a range of offers, including sports, topics from various subjects or interdisciplinary topics. The subject settings and *Aktivs* each make up about one quarter of the pupils’ learning time. The pupils, teachers and the headmaster all have lunch together, as this is considered an important occasion for informal social contacts.

Table 1: Daily routine and subject settings

Time	Daily routine	Subject setting
7.00 a.m.	learning team (optional)	
8.00 a.m.	learning team	
9.45 a.m.	recess	
10.15 a.m.	learning team or subject setting	Tuesday: English Wednesday: Mathematics Thursday: French
Noon	lunch break	
1.30 p.m.	learning team or subject setting	Tuesday: German
3.30 p.m.	recess	
4.00 p.m.	<i>Aktivs</i>	
6.00 p.m.	leisure time	
10.00 p.m.	time for bed	

The school week ends Friday at noon. Furthermore, half of the school weeks start only at Monday noon so as to allow the pupils enough time to arrive at the school.

The school year (from August to July) comprises 37 weeks and is divided into 3 equal terms. Over the course of the school year, the regular learning offers are interrupted and enriched by special learning arrangements, the so-called *Special Days* (cf. section B.8). In addition, throughout the year there are assessments (cf. section B.9) as well as, e.g., a gala evening and the final week. Not surprisingly, one of the teachers said: “*Here’s something I like: hardly any two weeks are alike, because there is always some additional special programme*” (13: 59).

B.3 The teachers’ role(s)

In accordance with the educational concept of the Beatenberg Institute the pupils assume responsibility for their own learning as much as possible. The teachers support and counsel them, but they only provide guidance if needed. In line with this understanding of the teachers’ role, they are referred to as learning coaches (‘learning facilitators’). They take on various roles depending on the different situations and responsibilities at the Beatenberg Institute.

⁴ The traditional notion of “teaching time” is not used in this case study since it gives a false impression of teacher-centeredness.

On entering the boarding school, each pupil is assigned one of the learning coaches as his or her personal coach (*Bezugscoach*) who is meant to function as an attachment figure that can be turned to for help with personal questions and questions relating to the school. These personal coaches need to be informed about the pupils' stage of development and their individual goals that have been agreed on prior to enrolment. The personal coaches support the pupils in the planning and the reflection on their learning; every term they take stock of the learning progress together with the pupils and they furthermore keep in touch with the pupils' parents.

In the learning teams (cf. section B.6) the learning coaches ensure the smooth functioning of the learning team and the careful handling of the materials. They support the pupils with technical and methodological advice and are at their disposal for information and help. Some learning coaches may also specially attend to those pupils whose personal coach they are.

Some learning coaches are in charge of a subject setting. In this context, they are predominantly concerned with the pupils' progress in these subjects.

Since the *Aktivs* cover a broad range of activities, they provide a special challenge to the learning coaches. Those coaches who are in charge of one of the *Aktivs* have to be competent in the corresponding field. Their enthusiasm for the *Aktivs* is important, since ideally it transfers to the pupils. They may even suggest *Aktivs* that correspond to their own interests and qualifications.

As a boarding school, the Beatenberg Institute has to arrange for the supervision of the pupils during leisure time and at night. These tasks are also carried out by supervisors who don't have the educational training of the learning coaches. During leisure time the supervisors create a casual atmosphere, they inspire the pupils to favourable recreational activities and at the same time they see to it that everyone observes the rules. They have to be aware of the problem of closeness and distance, and if necessary they employ methods of negotiation and mediation. At night, they have to ensure that the pupils are safe and quiet, and that the rules of the boarding school are observed.

Depending on their qualification, personal interests and the school's needs, each learning coach can adopt several of these roles. Since the learning coaches usually also assume supervision duties, they interact with the pupils in different contexts and with different roles and responsibilities.

B.4 Facilities

The Beatenberg Institute has two school buildings that are roughly one kilometre apart. The two buildings are called *Bärnermutz* ('Bernese Bear') and *Talblick* ('view of the valley'); annexes have been added to both buildings. On both locations there are group rooms for the subject settings and one large room each for the two learning teams. The building *Bärnermutz* furthermore contains the assembly hall, the kitchen, the refectories and several additional rooms like, e.g., a music room and a workshop. Furthermore, there are alcoves and secondary rooms that are ideal for team work or pair work. On the upper floors there are the dormitories and the recreation rooms of the younger boys as well as some rooms for a small flat-sharing community for a few of the older boys. A sports ground is located next to the building.

The girls and the older boys reside on separate floors in the building *Talblick*. This building also hosts the school administration and the secretariat. Due to the pupils' allocations to various groups – such as the learning teams, the subject settings and different dormitories – and the common refectories, everyone has to go back and forth between the two buildings several times a day, which has the side effect that all pupils have some daily exercise.

B.5 Subject setting

For each of the subjects German (language of instruction), mathematics, English and French, there is a two-hour subject setting (*Fachsetting*) every week. In these subject settings the pupils are divided in four ability groups of 10 to 15 youths each. In German and mathematics there is also a fifth ability group consisting of two to four pupils with special needs, i.e. those pupils who would not be able to

cope in an ordinary-sized group (I4: 234; I9: 68). There can be a wide age span within these ability groups; in mathematics and French it sometimes adds up to as much as five years (I3: 50; I4: 283).

Of all the learning arrangements at the Beatenberg Institute the subject settings resemble most closely the traditional instruction found in other schools. One of the pupils said: *“The subject settings are our lessons. [...] They are really the only thing that reminds me of my old school”* (I1: 8, 62). Though the subject settings deal with topics that are appropriate for the group’s skills level and their content is structured by the learning coaches, they are not just a ‘chalk and talk’ teaching format. In addition to teacher input there is individual work, group work, pupil presentations etc. One of the reasons why it is necessary to have such diverse methods and activities is that no recess is scheduled; there are only short breaks as and when required (I3: 130; I4: 236).

In the subject settings the pupils prepare so-called ‘learning tasks’ (cf. section B.9) which they continue to work on in the learning teams later on. This link between the subject settings and the learning teams is important because it allows the pupils to deal with the subject content repeatedly and in-depth instead of merely during a two-hour block once a week (I3: 122; I4: 91).

B.6 Learning team

The pupils are divided into two so-called learning teams (*Lernteam*) and they spend most of their learning time in this setting. There are between 25 and 30 pupils in each team, and the teams are composed of pupils of different age, skills level, and sex (and, consequently, also of the two residential buildings *Bärnermutz* and *Talblick*). Each pupil and also each learning coach have their own work space in the two large rooms allotted to the learning teams.

Infrastructure

The rooms for the learning teams are equipped with everything necessary for independent learning and working. In the middle of each room there are the office devices and materials that are at everyone’s disposal, including five to six PCs with internet access and a printer.

In a shelf there are encyclopaedias, dictionaries and other reference books as well as folders containing descriptions of learning tasks. This library is called the *Baumarkt*, i.e. the ‘building supplies store’, referring to the maxim “the road to success is always under construction.” In line with this metaphor, each pupil’s work space is marked with laths in red and white usually found at construction sites. Skills matrices for several subjects (cf. section B.10) are pinned to these laths (cf. Figure 4). On the matrices, colours and dots mark the skills levels that have already been reached and those the pupils are striving to reach next. The pupils are thus always reminded that the primary goal is the development of skills. Part of each pupil’s personal equipment is the so-called *Toolbox*, a sturdy blue plastic box containing dictionaries, writing utensils and the like.



Figure 4: Learning team *Bärnermutz* (detail)

The way in which the rooms for the two learning teams are arranged is a striking example of how the whole learning environment at the Beatenberg Institute is designed according to its understanding of learning: The very space in which learning and working takes place is considered a relevant factor that determines the quality of the learning; it is seen as the ‘third pedagogue’. The headmaster, Andreas Müller, describes traditional schoolrooms as follows: *“The action is in the front of the classroom. If we don’t want that, we have to organise our rooms differently. Of course, this strongly affects the interaction, too”* (I10: 51, 53). The focus on the individual work spaces is an important element in the creation of an environment where the learning is not centred on the teacher but lies in the responsibility of each learner.

In contrast to the two large rooms for the learning teams, the furniture in the assembly hall and in the group rooms is not firmly installed. For every occasion, tables, chairs and other pieces of furniture in these rooms can be arranged according to needs and requirements.

Procedure

In the learning teams the pupils work on the learning tasks determined by their individual programme. Given the large range of individual goals and learning requirements, this is only possible thanks to cleverly devised working structures and tools (cf. section B.9 for a description). There are usually two to three learning coaches for each of the two learning teams.

Oftentimes, the pupils work on their tasks alone (I3: 147). However, they may also work in pairs or in small groups, or they may be counselled by a learning coach. In any case, they are required to whisper so as not to disturb the other pupils. This ‘culture of whispering’ is taken very seriously and the learning coaches keep reminding the pupils of this rule by a reprimanding “Shush!” (I4: 25, 170; P2).

Besides this normal learning situation, the pupils are occasionally called together, e.g., to discuss organisational matters or to arrange joint activities like tidying up. On Thursday afternoons there is the weekly appraisal interview (cf. section B.9), and every Friday there are presentations of the pupils’ work. Furthermore, there is a scheduled time slot when every pupil plans the next week’s tasks together with his or her personal coach (I4: 159). On Wednesday afternoons, depending on their educational goals, the older pupils may either do an exam preparation where they learn how to deal

with exam situations, e.g., how to work under time pressure, or a job preparation training where they learn how to write letters of application and how to prepare for a job interview (I4: 112).



Figure 5: The 'building supplies store' in the learning team

The pupils are expected to complete at least five learning tasks and to produce the corresponding 'proofs of learning' (cf. section B.9) every week. The four subject settings each provide one learning task and thus determine a fair share of the pupils' work in the learning team. In the foreign languages, an example of such a proof of learning might be a short oral presentation. The learning coach of the respective subject setting decides whether the proof of learning is accepted.

The fifth learning task is called the 'key topic of the week' (cf. below). Pupils who complete their learning tasks fast or who make use of the voluntary learning time in the early mornings – for example, in order

to prepare for secondary school – may take on further learning tasks which they can either choose from the selection available in the *Baumarkt* or they may develop their own ideas of how to furnish proof that they have indeed learnt and understood some content (I4: 74).

Key topic of the week

Before the beginning of every week, each pupil determines his or her 'key topic of the week' (*Wochenschwerpunkt*) – after prior consultation with the personal coach – and plans it out by means of the so-called *Layout* (cf. section B.9). The pupils have a lot of leeway in their choice of a topic: it can be something of personal interest to the pupil, a gap in the pupil's knowledge, a topic from one of the so-called *Units* (cf. section B.8) or from one of the *Aktivs*, or it can relate to something they experienced in a practical training (I4: 115). It is common for pupils to use the key topic of the week for a more in-depth treatment of one of the topics dealt with in the subject settings (I3: 38).

Presentation of the pupils' work

Every Friday morning, the pupils who share the same personal coach present a highlight of their learning activity of the past week to each other; this is called the *Werkschau*. These presentations take the form of a three to five minute talk and are usually about the pupils' key topic of the week. As one of the learning coaches said, "*this is something that helps them a lot. It enables them to acquire the skill to stand in front of an audience and to talk about what it is they do. And of course that's interesting for the other youths, as they can profit and get input: 'Oh, I could use this as my key topic of the week, too'*" (I4: 171). The audience provides feedback on the nature of the presentations – after all, giving constructive feedback is another skill that needs to be trained (I4: 170, 190).

B.7 Aktivs

The *Aktivs* take place Monday to Thursday in two-hour blocks in the late afternoon. For every day of the week the pupils may choose from a range of four to five activities which they then perform over the course of one term. Roughly one third are sports or outdoor activities, a little less than one third of the offers are related to the fine arts or to handicrafts, and a little more than one third are related to the subjects natural sciences, geography and history. Examples for the topics of such *Aktivs* are 'model making', 'world views' and '*Girlsfitness*'. In addition, there are particular topics like '*Jobtraining*' (career counselling in grade 8) or a reader circle, which do not fit into the three categories outlined above.



Figure 6: 'Outdoor' Aktiv

The *Aktivs* are organised as a form of activity-based learning; they may involve a certain degree of physical activity and provide a change from the pupils' tasks in the subject settings and in the learning teams. The wide range of activities offered in the *Aktivs* allows the pupils to follow very diverse interests, e.g., to exercise or to deepen their knowledge in science. The personal coaches exert their influence on the pupils if the choice of *Aktivs* is too one-sided, e.g., if a pupil avoids exercise at all costs or if not enough attention is paid to the intended future profession (I3: 136; I4: 273 f; I5: 149).

B.8 Special Days

The ordinary learning programme at the Beatenberg Institute is complemented by several so-called *Special Days* that are scheduled throughout the school year. These *Special Days* consist of different types of activity-based learning events as described in the following subsections.

Units

The so-called *Units* occur periodically and last one full afternoon (in the school year 2010/11 there were a total of six *Units*). They cover topics from the subjects natural sciences, geography and history; concrete topics are, e.g., 'drinking water', 'air' or 'Platonic bodies'. The pupils may choose from different *Units*. The *Units* are taught by learning coaches and are intended to cover subject matter which is not dealt with in the subject settings. An activity-based form of learning is achieved by having the pupils work on these topics in the context of small projects. Activities include the construction of a water wheel in a *Unit* on 'sources of energy', creating the layout of the Institute's newsletter in a *Unit* on 'topicality', or baking bread on a stick in a *Unit* on the topic 'fire'. The combination of learning and practical work, production and hands-on experience is intended to provide the pupils with a comprehensive learning experience (I2: 510; I4: 251, 257ff; I5: 197; P1; website).

Around the Lake, Around the Snow, Around the Clock

In the school year of the Beatenberg Institute there are three days with a special tradition. *Around the Lake* is the name given to an event that challenges the pupils physically, since they are to hike or jog around the nearby Lake Brienz. Although it is an impressive distance of 40 kilometres, practically everyone masters this task within several hours. This achievement is not only a special one for the pupils, but it is furthermore recognised with a certificate.

The event *Around the Snow* suggests itself for the Beatenberg Institute, since it is located near some of the great skiing areas in Switzerland. On this *Special Day*, all the pupils go skiing or snowboarding.

The day called *Around the Clock* is similar to the *Units* in that it involves activity-based and project-based learning. In contrast to the *Units*, however, the pupils have a full day (including the night) at their disposal. A topic recently covered was 'outer space', and the activities included the construction and launch of a rocket. Commenting on *Around the Clock*, the headmaster said that "it is one thing to study Pythagoras at four in the afternoon, quite another if you do that at one o'clock in the morning. It's a completely different atmosphere. Somehow it's 'cool' to learn at night. This event is always very popular with the pupils" (I10: 150, 155).

Go4it

Go4it is a three-day volunteering event that takes place four times a year. The pupils can choose from such diverse activities as doing forestry work, fund-raising for the deserving poor (where the pupils collect donations of clothes and other goods and sell them on a flea market), or helping out in the local home for the handicapped. This is a great opportunity for the youths to gain experience in different areas of life and to meet people with different social and professional backgrounds. Of course they also profit with regard to the school subjects; as one of the learning coaches said: *"I think that they learn most about botany if they're actually there [in the forest]. Spending three days in the forest, you get to learn much more about life, work and nature than if you only heard about these things"* (I4: 246).

B.9 Planning and assessment of the learning

As the Beatenberg Institute has done away with tests and the ordinary state-school curriculum and instead defines educational goals for each pupil individually, it needs to develop its own processes and tools for the planning, assessment, reflection and documentation of the pupils' learning. In what follows, these tools and processes are presented first in a brief overview – ordered by the time span they relate to – and subsequently in more detail.

- a) Based on the enrolment interview the pupil's learning is planned ahead over a period of one year (or three terms respectively) and is regularly assessed in the end-of-term and parent-and-pupil interviews. The pupil's skills level and development is assessed on the basis of his or her proofs of learning and with periodic assessments. Among the tools for the documentation of the learning progress there are the portfolios, the *Agenda* and the term report. Moreover, in each of the four subject settings the learning coaches plan and coordinate the goals for each term and for the whole school year without the pupils.
- b) Every week the pupils plan and assess their own learning with the help of the so-called *Layout*. If needed they are supported by their personal coach. The planning of their key topic of the week is particularly important. The pupils discuss their weekly achievements in the weekly appraisal interview with their personal coach, and together they draw conclusions. The weekly presentation of the pupils' work also helps the pupils to reflect on their learning progress.
- c) The pupils' work in the learning team is made up of separate learning tasks. For each of these tasks the pupils have to fill in a so-called *Smarty*. These *Smarties* determine the goal, the procedure and the corresponding proof of learning for each learning task.

Term report, end-of-term interview and parent-and-pupil interview

Each term, the Institute writes a report for every pupil. This term report shows the pupil's current skills level by means of the skills matrices (cf. section B.10) and the proofs of learning, and it contains a self-assessment by the pupil as well as an assessment by the personal coach. The term report is served to the pupil's parents.

In the end-of-term interview, the personal coaches provide feedback to their pupils. Together they put on record what has been achieved during the term and the goals for the next term, and they discuss the term report.

The parent-and-pupil interviews are held as and when required, but usually twice a year. Participants are the pupil, the parents, the pupil's personal coach and a representative of the school administration (I2: 165; I9: 43; I10: 283). These interviews are used to take stock of the pupil's achievements and to discuss and agree on the next steps. The parent-and-pupil interviews are jointly prepared by the pupil and his or her personal coach on the basis of the feedback given during term. Especially older pupils can thus take on the responsibility of presenting their achievements and aspired goals to their parents. The successful negotiation of the pupil's development goals between the pupil, the school and the parents is an important foundation for successful learning (I4: 53; I10: 284 f.).

The assessments

The pupils normally undergo an assessment of their skills in the subjects German, French, English and mathematics once a year (I4: 206). These assessments are mostly computer-based and use the test system 'skills compass' (*Kompetenzkompass*), which was co-developed by the Institute's headmaster. With these online tests it is possible to determine the pupils' skills level corresponding to the Institute's skills matrices. For skills that cannot (yet) be tested online, the Institute uses in-house assessments.

Every spring, the pupils may take the exam for one of the TELC certificates (The European Language Certificates) in the foreign languages French and English. These tests have to be taken at one of the TELC examination centres. Together with the assessments described above, these exams play an important role in that they provide an objective evaluation of the pupils' achievements.

The Layout

The *Layout* is a planning tool with which the pupils structure their weekly learning and the regular exchange of information with their parents. The first heading on this form serves to plan the key topic

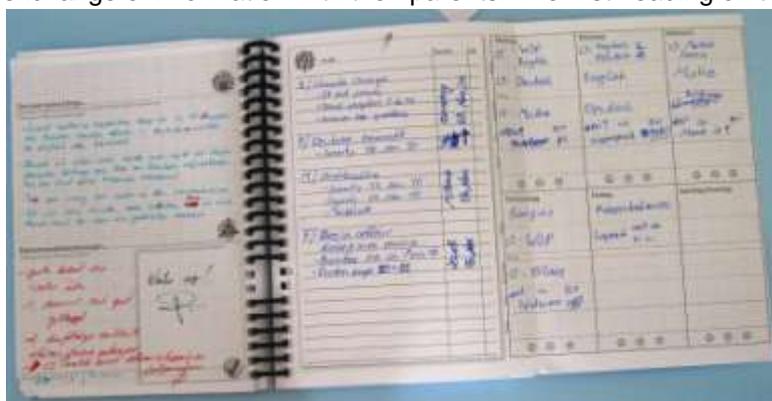


Figure 7: Layout

of the week (cf. section B.6) which is supposed to result in a specific, measurable, attainable, relevant, and time-bound (*ergo* SMART) learning goal. The second heading is the to-do list where all the upcoming tasks and their deadlines are recorded, especially the learning tasks from the subject settings and any unfinished tasks from the previous week. Six more headings are available, one for each day of the week (including one for the weekend), where the

pupils record their detailed planning. A further heading serves to write down as many situations as possible in which the pupils felt successful; this is meant to strengthen the pupils' feeling of self-efficacy and to encourage them to reflect on their learning. The heading "insights/agreements" is for the personal coach to note down the results of the weekly appraisal interview.

The *Layout* is signed by the pupil as well as the personal coach. Every weekend, the pupils take the *Layout* home to their parents who then have to confirm by their signature that they have read it. Furthermore, there is a last heading where the parents are given the possibility of adding comments, questions and suggestions.

Weekly appraisal interview

Every Thursday afternoon there is the weekly appraisal interview in which each pupil informs his or her personal coach about the progress made during the week. They discuss current events, learning difficulties the pupil may have encountered, and questions such as whether the learning goals have been reached or where the pupil has been successful. In addition, this interview can also be used to discuss the preparation of the weekly presentation of the pupil's work (cf. section B.6). In any case, the weekly appraisal interview serves to check and record in writing the proofs of learning produced by the pupils. The interview is continued on Friday; in this second part the personal coach and the pupil discuss the planning of the following week (I2: 595-8; I4: 159).

Learning tasks, *Smarties* and proofs of learning

Learning tasks (*Lernjobs*) are tasks which the pupils work on independently in the learning team⁵ (cf. section B.6). The classification, planning and assessment are also part of the learning task. In order to urge the pupils to carry out all of these steps, they have to fill in a so-called *Smarty* for every learning task. The *Smarties* are forms in which the pupils have to enter a host of information: the topic and the goal of the learning task; which subject it belongs to; the kind of skill it is designed to develop; what skills level it corresponds to; the intended procedure (developing first ideas, concrete planning, elaborating, presenting the results); the deadline for the task; and – last but not least – the intended proof of learning (*Lernnachweis*). The proofs of learning have to be concrete, checkable products, e.g., a short essay or a brief oral presentation. A proof of learning can either be specified by the learning coach or it may be suggested by the pupil. In the latter case, the pupil's suggestion is only accepted by the learning coach if it is stated precisely enough (I4: 221). Proofs of learning may also be rather unorthodox; e.g., a pupil may be considered to have understood some content if he or she can successfully explain that content to other pupils. Whether something counts as proof of learning is decided by the learning coach, who also makes the appropriate entry on the *Smarty* (I4: 99).

Apart from these general learning tools, the pupils get to know several other, more specific methodological tools, e.g., Mind Maps or the so-called *Brain-Box*, in which they keep the foreign language vocabulary they have to learn.

The portfolios and the *Agenda*

A portfolio documents a learner's individual learning history and acquired skills by means of selected products. It contains essays, tests or photominutes that show the learner's efforts and achievements in different areas of learning. By making learning success visible, a portfolio can reinforce the learner's self-confidence (I3: 77; I4: 180; website).

The pupils at the Beatenberg Institute have several portfolios: in the 'collection portfolio' (*Sammelportfolio*) they collect all their proofs of learning, the corresponding *Smarties* and – if available – other written pieces of work. The pupils' achievements over the course of the school year are thus made evident (I4: 178).



Figure 8: Example of a learning portfolio

certificates. In combination with the skills matrices the presentation portfolio can be used as a documentation of the pupils' proficiency level.

The *Agenda* provides an overview of the planning and reflections on the pupils' learning. It contains the goals for the term and the completed *Layouts* for each week, but also some general information on life at the Beatenberg Institute like, e.g., the Institute's rules of conduct, timetables or remarks on

In the 'learning portfolio' (*Lernportfolio*) the pupils have to portray one piece of work for each week (I4: 180). Every week, the learning teams choose one learning portfolio as the "portfolio of the week"; this is done in order to increase the pupils' commitment for this portfolio type.

The 'presentation portfolio' (*Präsentationsportfolio*) contains the pupils' best pieces of work. They may also include certificates they have been awarded, e.g., for *Around the Lake* (cf. section B.8), for *Aktivs* or for school-external achievements like TELC

⁵ At the Beatenberg Institute, the four learning tasks from the subject settings are not usually called *Lernjob*. However, since they are treated like *Lernjobs* – i.e. they have to be described in a *Smarty* and are completed with a proof of learning – this distinction will not be considered in this case study.

specific methods of working and learning (e.g. Mind Maps). The Agenda is mainly used in the regular exchange of information with the parents.

B.10 Skills matrix

The skills matrices (or 'competence matrices', *Kompetenzraster*) used in the Beatenberg Institute are grids with a list of skills in a subject or field on one axis and a scale of proficiency (labelled A1.1 to C) on the other. For example, in the foreign languages the skills can be listening, reading, spoken interaction, spoken production and writing. Each cell contains a description of what a learner is supposed to be able to do at the respective level. In other words, the skills matrices do not describe subject content or isolated techniques, but they provide a comprehensive description of the skills a learner should strive to develop and which will enable them to cope with new situations and tasks.

In every subject the pupils can determine their skills level on the corresponding skills matrix. The headmaster comments on the skills matrices used in the Beatenberg Institute as follows: *"The skills matrix is a kind of skills map. The children move from different places to the same or to different destinations. But everyone moves within the same framework: the learning coaches, the children, the parents. And by this we create transparency and make the whole thing somehow manageable"* (I2: 388-411).

Skills matrices are used for German (the pupils' first language), for the foreign languages English and French, for mathematics, ICT literacy, crafts, geography/history/civic education, science, music, physical education/health. Skills matrices have even been created for learning skills ('learning to learn', *Lernkompetenz*, including the following aspects: familiarising oneself with a new topic, developing and formulating aims, gathering and assessing information, overcoming learning problems and difficulties, and assessing the obtained results, cf. copy in appendix F.2) and personal skills (*Selbstkompetenz*, including the following aspects: self-control, reliability, commitment, confidence and mindfulness).

The skills matrices for French and English largely correspond to the Swiss version of the Common European Framework of Reference for Languages (CEFR), which sub-divides each of the levels A1, A2 and B1 into two levels (cf. www.sprachenportfolio.ch). A new skill "formal writing" was added to the skills matrix for German in order to capture the requirements the pupils will have to meet in the entrance examination for secondary school. The skills matrices for the other subjects are modelled after the matrices used for the languages and were developed by the Beatenberg Institute in cooperation with different partners (I10: 252 ff.).

Individual skills level



Figure 9: Skills matrix showing individual skill levels

The pupils' skills level in the different subjects is determined on the basis of the assessments and the pupils' proofs of learning. If the pupils have mastered 80% of what they are supposed to be able to do according to the description in the skills matrix, the respective cell in the matrix is coloured dark yellow; if they have mastered 50% the cell is coloured light yellow. For every proof of learning the pupils receive one 'point', i.e. a small, round sticker which they can stick on the appropriate cell. The colours of these stickers depend on the term in which they were earned. There are proofs of learning for which the pupils may earn points in more than one subject. For example, for an

oral presentation using PowerPoint on a topic in biology a pupil may earn three points, one each in science, spoken production in German, and ICT literacy.

The colouring and the stickers on the skills matrices visually represent the pupils' skills profile and it allows retracing the pupils' development over the past school year (I4: 99, 104, 110). Furthermore, all the stickers and the *Smarties* carry a number which corresponds to the respective proof of learning in the collection portfolio.

Checklist

There are checklists for all the subjects taught in the subject settings. For every cell of the skills matrices the checklists contain concrete examples of activities that correspond to the related skills level. The checklists thus facilitate the creation of learning tasks that help to develop the aspired skills.

B.11 The boarding school

The pupils can also choose from a range of leisure time activities – including watching TV. Every Thursday night is *Boys-Night* and *Girls-Night*: the boys do something together with some of the male learning coaches and the girls with a female learning coach. They might for example eat a hamburger first and then go bowling or go see a movie (I7: 359).

The pupils also have different household chores, e.g., they have to help in the kitchen after lunch. There are a number of strict rules of conduct in the boarding school which the pupils have to confirm by their signature on entering the school: no drugs, no alcohol, no smoking, no open or hidden violence, no trespassing (e.g., the girls' quarters are out of bounds for the boys and vice versa), tidiness, punctuality, respect, and diligence (I3: 167; I4: 316; from the School Rules).

B.12 School administration

School organisation and staff

The governing body of the school consists of the headmaster, a social educator, a person responsible for the diagnostic assessments prior to enrolment, and a person responsible for the learning teams and coaching. The latter two are relatives of the headmaster. The social educator is responsible for the relation between the school and the parents as well as for conflict management. Whenever necessary he counsels the learning coaches with regard to problems with the pupils, or he may intervene himself (I6: 29).

Three of the members of the governing body of the school work as learning coaches. Furthermore, the staff consist of an additional 11 learning coaches, 5 supervisors (for leisure time and at night), 6 employees for domestic management and 2 employees in the administration department. The headmaster reckons that if the working time used for specific boarding school duties (e.g., eating and living at the school, supervising the pupils during leisure time) is not counted, the staff's working hours per pupil are the same as in a state school. However, since all the learning coaches always have to be present during working hours, the Beatenberg Institute may seem more staff intensive than an ordinary school where the teachers can do part of their work at home (I10: 192ff.).

Virtually all learning coaches are trained teachers. Because of the demanding nature of the job, several of the learning coaches at the Beatenberg Institute have done the special training offered by the Learning Factory (cf. section F.3) or are currently completing it.

Compulsory attendance



Figure 10: Work space of a learning coach in the learning team

Attendance at the Institute during their working hours is compulsory for the learning coaches; their weekly attendance time is roughly 50 hours. This length of time derives from the scheduled annual working time of teaching staff in public schools in the canton of Berne and from the number of school weeks and one week retreats (cf. below). Whenever they are on supervision duty in the evening in addition to their principal duty as learning coaches during the day, they have long working hours indeed.

The constant availability of the learning coaches is a prerequisite for the frequent and varied contacts with the pupils as well as for the continuous cooperation between the learning coaches. While having a workplace in the midst of the learning team and lunching together facilitates keeping in contact with the pupils, the downside of this

arrangement is that the learning coaches rarely have time for themselves, which can be rather strenuous, as the following statement by a learning coach shows: *“I had been used to having my own office for 10 years. And here I merely have my own desk [...] and like this I’m of course right among the youths. And they see me working, preparing. And that’s fine. And of course the pure attendance time [...] it’s really exacting. You’re together with the youths virtually round the clock, also during lunch and until late in the evening”* (I3: 257).

Cooperation and professional development

The cooperation between the learning coaches, the joint development work and the school-internal training are very important at the Beatenberg Institute. The learning coaches appreciate and make use of the various informal opportunities for collaborative working and planning, e.g., over lunch or in the learning team (I3: 42, 132).

On Friday afternoons and on those Monday mornings when the pupils arrive at the school only towards noon, there are usually meetings of the learning coaches and the governing body of the school. These meetings are used to discuss current issues (e.g., absences or the situation of individual pupils), for planning and coordination tasks (e.g., coordinating the goals for the term in the different subject settings), and also for the professional development of the learning coaches (e.g., doing a training in conflict moderation). Furthermore, there are several retreats during term break when the learning coaches work on the planning and the goals of the term and the whole school year (I9: 53, 93 ff., I10: 212 ff.).

The school as a learning organisation

In the meetings and on the retreats, the learning coaches and the governing body of the school also work on the further development of the school. For example, they evaluate the pupils' regular and institutionalised written assessments of the learning coaches and draw conclusions from the results (I9: 95). What's more, they regularly evaluate the various learning arrangements and the suitability of every single tool and make adjustments if necessary (I4: 188; I10: 15, 364).

For the planning of the term and the school year, e.g., to structure the planning of the programme in the subject settings, the learning coaches use similar tools as the ones used by the pupils (I4: 143; I10: 215). This kind of structured planning makes it much easier to hand on the planning results – e.g., if new staff is hired – or to make use of the planning results of previous terms.

The Beatenberg Institute furthermore participates in a quality assurance system for Swiss schools. Amongst other activities, the school decides on a common topic, e.g., the quality of the learning coaches' relationship with the pupils. The learning coaches individually concretise this topic with regard to their own situation, plan out how they might improve their relationship with the pupils over the course of the school year, and define criteria by which such an improvement can be measured. For the planning of this whole process, the learning coaches use *Smarties* (cf. section B.9), and the results are again discussed in staff meetings and retreats (I9: 77; I10: 290, 298).

C The nature and quality of the learning

This chapter presents the characteristics and the quality of the learning at the Beatenberg Institute from different points of view, following the characteristics of innovative learning environments as formulated in the theoretical part of the OECD project “Innovative Learning Environments” (Istance & Dumont 2010: 317-325): The innovative learning environment

- is acutely sensitive to individual differences, including differences in prior knowledge (section C.1);
- considers the learners as the most important actors, encourages their active engagement and develops in them an understanding of their own activity as learners (section C.2);
- is demanding for each learner but without excessive overload (section C.3);
- uses assessments that are consistent with its aims, with strong emphasis on formative feedback (section C.4);
- is founded on the social nature of learning and actively encourages well-organised co-operative learning (section C.5);
- promotes horizontal connectedness across activities and subjects, in- and out-of-school (section C.6);
- is highly attuned to the learners’ motivations and the importance of emotions (section C.7).

Such learning environments foster the development of subject-specific competencies as well as cross-curricular competencies, which are essential in today’s fast changing society (Istance & Dumont 2010: 330).

The seven characteristics listed above each represent a specific focus, yet they are closely interrelated. Many topics can therefore be examined in relation to more than one of these characteristics. Since learning and even educational objectives are very much individualised at the Beatenberg Institute, this aspect comes first in the list. Motivation, on the other hand, takes the last position because it is influenced by practically every other aspect; this is why the order used here differs from the one used in the original.

C.1 Individualised learning

The Beatenberg Institute has designed its learning environment around the pupils’ individual goals, interests and learning preconditions (cf. sections A.3 and B.9). One crucial step is the mutual agreement concerning the tailor-made educational programme for each pupil that is reached between the pupil, the parents and the school prior to enrolment and that continues to be developed further in the parent-and-pupil interviews. The pupils’ individual interests are considered especially in the *Aktivis* and on the *Special Days*, and the key topic of the week may also be chosen accordingly.

The pupils’ prior knowledge and abilities in the subjects German, French, English and mathematics decide which proficiency level in each subject they are assigned to. Whether a pupil advances to a higher proficiency level is decided on the basis of his or her individual achievements in the assessments and proofs of learning (14: 240; 15: 73). In order to enable such transfers, the learning coaches who are in charge of a subject setting coordinate their programme for the different proficiency levels (14: 226, 241-245; 19: 55, 63). Pupils who would like to transfer to a higher level fast can get help and guidance by the learning coach in charge of the corresponding subject setting and by their personal coach. By choosing appropriate key topics of the week and additional learning tasks, which they can work on in the voluntary learning time in the early mornings, these pupils may fill possible gaps in their knowledge so that they can transfer to a higher proficiency level (15: 75, 77).

As has been mentioned, the groups in the subject settings are formed on the basis of the pupils’ proficiency level, which means that they are not normally homogeneous with respect to age and general intelligence. In the lower level groups of the foreign languages French and English there can

consequently be young learners who have only just started to learn the language as well as older pupils who have been making only small progress for quite some time. It is a challenge for the learning coaches to cater to the needs of such a diverse group of learners (I3: 16). This challenge can only be met by a high degree of individualisation in the subject settings. Indeed, the pupils hold that they receive more personal support and are more actively involved than in their former, traditional school (I5: 61-77; I7: 267-8; I8: 311-2). One factor that facilitates this high degree of individual support is the group size in the subject settings: with 10-15 pupils the groups are smaller than the classes in traditional schools.

The pupils appreciate the possibility of using their time in the learning team to work on the learning tasks assigned to them in the subject settings. In contrast to doing homework in a traditional school they are actively supported by the learning coaches in the learning team and they may furthermore ask the help of the learning coaches from the subject settings (I7: 257; I8: 306, 312). One of the pupils commented that *“there are usually two or three teachers in the learning team, and they help us with everything. We can ask questions if necessary, and if we don't need their help they leave us alone”* (I7: 255).

The conceptual design of the learning teams is particularly geared to individualized learning and the individual support of each pupil. The latter is evident from the fact that the personal coaches usually approach their charges at least once a day to check what they are presently dealing with and whether everything is going fine (I5: 283). In the regularly conducted surveys (cf. section F.2) a large majority of the pupils agree with the statements that (a) the atmosphere in the learning teams is relaxed, (b) they receive help if they get stuck, (c) they are helped if they need materials, (d) the learning coaches are fair, i.e. the pupils know what they're up against, and (e) the learning coaches have a sense of humour and are often jocular. The pupils consider this individual support to be a particularly important advantage of the Beatenberg Institute over their former school.

Individualisation and general education

In view of this learning environment that is consequently oriented towards the pupils' individual goals and interests, it is legitimate to ask whether too little attention is paid to the transfer of basic knowledge at the Beatenberg Institute. However, the overarching educational goal at the Beatenberg Institute is not an arbitrary one, but it is summed up in the phrase “fit for life”, which also includes the pupils' preparation for secondary school.

The Beatenberg Institute derives very concrete and detailed obligations from this rather general goal. The development of personal skills and learning skills is a compulsory, non-negotiable goal which determines the design of the whole learning environment. With the subject settings in the languages and in mathematics, the Institute offers a well organised education that can be adapted to individual requirements. The preferential status of these subjects does not only derive from the importance of their content but also from the fact that they are the decisive criteria that govern access to secondary schools and apprenticeships (I4: 275; I9: 29, 32).

The content of the other subjects like, e.g., science, history or crafts, is taught in the *Aktivs*, the *Units* etc. For these subjects there is no continuous course of study, and the educational format is largely topic-based and activity-based. Thanks to the guidance and orientation provided by the skills matrices and an appropriate choice of *Aktivs*, but also with the regular in-depth treatment of select topics in the key topic of the week, the pupils are able to gain specialised knowledge that is required for their future education (grammar school, apprenticeship etc.) or that meets their personal interests. Pupils without such personal interests or educational goals, however, can avoid these subject contents to a large extent.

The Institute's headmaster thinks that some basic knowledge is necessary for an informed, responsible and successful life in our complex society. In practice, however, he does not prescribe to impart such orientational knowledge, firstly, because it is difficult to determine what exactly would be absolutely essential in terms of basic knowledge, secondly, because an overly large curriculum cannot be transformed into sustainable knowledge, and thirdly, because heteronomous curricular pressure would compromise the overarching educational goals of the Beatenberg Institute (I2: 547, 549, 555; I3: 136; I4: 16, 269). Instead, essential content is sought to be imparted informally, e.g., with

attractively designed offers in the *Units*, *Aktivs* etc. With their counselling, the learning coaches influence the definition of learning goals and the pupils' choice of key topics of the week and topics in the *Aktivs*, thereby guiding the pupils to a purposeful and well-balanced education (I3: 136; I4: 245, 273; I5: 149). Furthermore, in the languages – i.e. the subject settings German, French and English – relevant topics are deliberately taken up in order to ensure the repeated treatment of content from other subjects (e.g., protection of the environment, or historical topics like the burning of witches in the Middle Ages) (I4: 245; I5: 130). The inclusion of social and scientific topics is indeed a topical issue in school development; it was in the context of this process that the *Units* were introduced some time ago in order to strengthen these subjects (I4: 274).

The interviewed pupils are aware that content matter from other subjects is also treated in the language subjects (I7: 290) and that the personal coaches guide them towards an optimal vocational preparation (I8: 284). Many pupils appreciate their freedom of choice and furthermore stress the relevance of their own responsibility for an adequate choice of topic in the optional settings (I8: 280 ff.). However, an almost equally large number of pupils deplore the scarcity of continuous and systematic treatment of the topics outside the subject settings (I7: 50, 286-290).

Conclusion

Learning at the Beatenberg Institute is strongly geared to the pupils' individual requirements, interests and educational goals: (a) Each pupil's educational program is individually determined in collaboration with the pupil and his or her parents. (b) Learning in the learning teams is largely organized as individual work. (c) In the subject settings the youths are assigned to a proficiency level according to their level of achievement in the subjects. (d) The *Aktivs*, *Units*, key topics of the week etc. offer many opportunities to choose learning content according to personal interests. (e) The youths are individually attended to by the learning coaches – in particular by their personal coach – and they generally appreciate this high degree of individualisation.

It is interesting to see that individualisation cannot be achieved merely by dividing the pupils in proficiency level groups. If achievement is the only criterion for this division, the resulting groups are heterogeneous with regard to other factors, e.g., regarding age or intelligence. Consequently, individualisation is necessary also within the subject settings. Since the choice of learning content is consistently informed by the pupils' current individual goals and interests it must be considered whether learning contents might be omitted which the youths might miss in retrospect or which are considered socially important (cf. section D.1).

C.2 Self-directed learning

The learning environment at the Beatenberg Institute is largely geared towards the core process of self-directed, active learning. The importance assigned to 'learning to learn' is evident from the fact that a specific skills matrix has been created for learning skills (cf. section B.10). Such aspects as independence and assuming responsibility for one's own learning apply not only to the accomplishment of a single learning task but are relevant already in the pupils' explicit inclusion in the planning of their education (parent-and-pupil interview, cf. section C.4) and in the definition of the goals for the term, i.e. when they have to choose from the range of offers in the optional settings. Still, the concept of self-directed learning becomes most visible in the learning team.

The learning coaches fully support this orientation towards self-directed learning, as the following statements illustrate: *"It's very important that the pupils learn to work independently, that they assume responsibility for their own learning. [...] Here I really only support their learning"* (I3: 44). *"And the most important thing is the active involvement of the learners, in other words, creating Mind Maps, structuring one's thoughts, dealing with the content of the tasks, looking up keywords over again"* (I5: 173).

The pupils appreciate the possibility of working independently; they see it as a great advantage of the Beatenberg Institute over the traditional school (I7: 36; I8: 16). Some prefer the learning team over the subject settings precisely because of this possibility of working independently and the consequent

freedom of planning: “You can either deal with all your subject settings in every hour in the learning team, spending a quarter of an hour on each subject, or you can sit down and work something over for two hours straight” (I7: 292).

Self-directed learning is demanding and must be learnt (I4: 70). According to the learning coaches, the pupils have only little experience with this kind of learning when they enter into the Beatenberg Institute (I4: 70, 167). The learning teams offer ideal conditions for the development of the necessary learning skills due to the intensive support provided by several learning coaches and the clear structuring of each week with five learning tasks, the weekly appraisal interview and the weekly presentation of the pupils’ work. Depending on the pupils’ stage of development and the type of learning task, there can be rather large differences with regard to the degree of self-directedness in their learning.

The planning of a learning task, the proof that the task has been successfully completed and the documentation of these processes in a *Smarty* are vital parts of each learning task (cf. section B.9 for a detailed description). This integral process is primarily used for the key topic of the week. Among other things, the pupils have to suggest a proof of learning for which they furthermore have to define which skills level and which aspect of the corresponding skills matrix it relates to (I3: 85, 89). This requires them to realistically assess the difficulty level of the task and their own skills level, and they have to know how to work with the skills matrices. Pupils who are new to the Beatenberg Institute need intensive coaching by the personal coach, and in the process they lay the foundations for self-directed learning (I5: 171). The checklists (cf. section B.10) that may be of help in the languages and in mathematics are now hardly used by the pupils but are mainly employed by the learning coaches (I3: 85; I7: 101; I8: 51, 56, 79). The whole planning process is demanding and some pupils tend to sketch it only superficially (I3: 82), hence the learning coaches keep insisting on more detailed specifications. One of the coaches said: “Well, occasionally it’s a grind to request the whole thing” (I3: 81). Despite these difficulties, the interviewed pupils clearly consider the key topic of the week to be helpful, as it allows them to set priorities in their education. For example, one of the youths who was preparing for an apprenticeship as carpenter used the key topic of the week to acquire the mathematical knowledge which he still lacked for this apprenticeship (I8: 192).

In contrast, the learning tasks of the four subject settings are in whole or in part defined already in the subject settings. As a result, the explicit planning by the pupils becomes a formality, particularly if the proof of learning is already specified. It is thus not surprising that the pupils consider the completion of the corresponding *Smarties* to be of little use – it is a minor chore that just has to be dealt with (I7: 116, 249; I8: 106).

There are large individual differences concerning the ability to plan a full school week. Some of the younger pupils need the help and support of their personal coach for this task (I3: 153; I4: 91; I5: 171); for others the programme of the week results almost habitually from the sequence of the subject settings, and hence they think that explicit planning is unnecessary (I7: 124, 249). Most of the interviewed pupils find the *Layout* (cf. section B.9) a useful tool for the planning of the school week; it can be used to look up what they still have to do (I7: 120 ff.; I8: 121, 135). In several of those weekly appraisal interviews that were observed for the present case study the personal coaches considered the planning details in the *Layouts* too global and therefore insisted on more detailed specifications (P12).

There are large differences with regard to the amount of time that is needed for the completion of the different tasks, too. While some pupils are fully engaged with their four learning tasks from the subject settings and hardly have time for their key topic of the week, others use as much as one third of their learning time for the key topic of the week and even ask for additional learning tasks (I7: 213, 380; I8: 89, 91).

Using the computer and the internet is also part of self-directed learning. The pupils use the computer regularly, e.g., for the weekly presentation of their work. There are rules to be followed here, too: texts have to be prepared in handwritten form, and if the pupils want to consult Wikipedia they first have to ask permission. This procedure is chosen to prevent the pupils from randomly surfing the internet (I4: 209; I7: 263). Several pupils would in fact prefer less restricted access to the internet (I8: 320, 323).

Weekly appraisal interview

The weekly appraisal interview is held between the pupils and their personal coach every Thursday afternoon (cf. section B.9) and guarantees the constant support of the pupils and the continuous control of their learning process. One pupil describes it as follows: *“It’s important for the coach to know what you have done, how you’ve done it, and whether you’re stressed out. After the appraisal interview he knows if we do our work or just fool about. And they also help us with tips and advice”* (I8: 184). The personal coaches too consider the weekly appraisal interview important – for the learners, but also for the coaches themselves since it helps them to keep track of the pupils’ development (I3: 38; I4: 4, 164). This is not an easy task because the pupils are instructed by several different learning coaches and in several learning arrangements.

Most pupils assess the weekly appraisal interview positively. According to the results of the pupils’ regular internal assessment of the learning coaches (cf. section F.2), 80% of the pupils agree with the statement that the weekly appraisal interviews are important for their progress. However, some of them criticise that the appraisal interviews turn into a routine where proofs or learning are presented and merely taken note of (I7: 153). These pupils consider the weekly appraisal interview to be useful mainly for younger pupils and for those who are new to the Beatenberg Institute (I7: 166). One pupil suggested that for the experienced pupils the appraisal interview should be held only every second or third week (I7: 168).

There were clear differences between the single appraisal interviews that were observed for the present case study. Although the personal coaches made comments and gave tips and advice in every interview, the main part sometimes merely consisted in the coaches’ taking note of the proofs of learning and the registration of the corresponding points in the skills matrices, while others spent a lot of time discussing concrete problems. A topic that was discussed often was the preparation for the weekly presentation of the pupils’ work (P12).

Weekly presentation of the pupils’ work (B.6) and learning portfolio (B.9)

Two more events are scheduled towards the end of the school week, both of which are intended to aid in the reflection on the learning process. The purpose of the learning portfolio is to picture a topic which the pupil has worked on during the week. Some of the pupils who enjoy creative drawing appreciate this task. Most others, however, consider it overrated and sometimes even a loss of time in view of the other, more pressing learning tasks. Consequently, they would like the learning portfolio to be a voluntary task – or at least one that does not have to be dealt with every week.



Figure 11: Weekly presentation of the pupils’ work future job (I7: 188-197; I8: 206-216).

Compared to the learning portfolio, the weekly presentation of the pupils’ work is assessed much more positively. In these presentations, the pupils show what they have learnt in the past week, e.g., how the Binomial Formula works. These regular appearances before an audience are unanimously considered to be valuable and a marked difference to the pupils’ previous schools. Some pupils are still nervous even after several presentations, but they eventually get used to it and the positive effects prevail: they receive valuable feedback, boost their self-confidence, learn to speak without notes, and profit with regard to

Conclusion

The pupils at the Beatenberg Institute deal intensively with their own learning process, competently supported by the learning coaches. They greatly appreciate this support and also the possibility of working independently. Self-directed learning at the Beatenberg Institute is embedded into a number of institutionalised processes and gets structured with the help of different tools. The structures help the pupils to plan and to use their time sensibly (I5: 171). There are elements – like the weekly presentation of the pupils' work and the key topic of the week – that are unanimously appreciated. Opinions differ with regard to some of the other elements, though. Some critical appraisals seem to result from the fact that some of the processes and tools are too detailed and are scheduled too frequently for experienced learners. Although the learning coaches adapt the amount of guidance and counselling to the pupils' stage of development (I4: 71; I10: 334), a higher degree of individualisation in the employment of these instruments and tools would be desirable. In accordance with its self-concept as a learning institution, the Beatenberg Institute continually assesses its processes; one of the elements thereof is the examination of the current function and purpose of the learning portfolio.

C.3 Reasonable demands

High demands are made on the pupils at the Beatenberg Institute; they are expected to show a high degree of commitment, to learn intensively, and to work hard. Clear demands are made not only with regard to intellectual achievement and progress in the subjects but also regarding adequate social behaviour (cf. sections B.11 and C.5). One of the members of the governing body of the school made a point of the fact that the Beatenberg Institute promotes a culture of achievement. It is the learning coaches' task to create clear individual responsibilities and to demand their fulfilment. A further important learning target is the development of the pupils' willingness to perform, which has been made evident by the creation of a skills matrix for personal skills that includes the aspect of commitment (cf. section B.10).

It is crucial for high educational demands to be matched to the pupils' individual preconditions. One of the elements in this matching is the pupils' assignment to different proficiency levels in the subject settings (cf. section C.1). What is understood by high demands for each pupil is individually defined in the weekly appraisal interviews and in the parent-and-pupil interviews. In this way, realistic demands are made on the pupils, which means that the coaches can insist on the fulfilment of these demands. Indeed, the learning coaches consistently check whether the demands have been met. For example, pupils who have not completed their five proofs of learning usually have to stay and finish their work on Friday afternoon, i.e. when the other pupils are already going home for the weekend (I3: 159). Several pupils assert that the learning coaches go to great lengths to check whether the tasks are properly dealt with and that the proofs of learning are completed, and they appreciate that they are supported more intensively than in their former school: *“Since I came to this school I've been working and I've been under pressure, but this is what I need to be able to work. Like that I often work faster, better”* (I8: 225; also I7: 307; I8: 17, 294, 343 f.).

We can assume that the individually defined demands at the Beatenberg Institute are higher than in many a traditional school. In traditional schools it is the marks that can put the pupils under considerable pressure, but at the same time it is usually possible to calculate what minimal effort is needed to pass.

Conclusion

High demands are made at the Beatenberg Institute, yet they are carefully matched to the pupils' individual learning preconditions. Due to this matching it is possible to insist on the fulfilment of these demands, and many of the youths experience the resulting pressure as helpful.

C.4 Effective feedback

It is an integral element of the learning environment at the Beatenberg Institute to continually provide the pupils with differentiated feedback. The feedback always takes the pupil's proficiency level into account and relates to the previously defined individual goals; thus it deals with the questions of what has been learnt, and which goals have been reached (I9: 14). With such individualised feedback it is possible to make visible success and progress for every pupil (cf. section C.7).

Yet the feedback also accounts for objective, content-related criteria in order to avoid the arbitrariness of purely individual standards (I2: 420). In fact, the skills matrices in the subject settings were introduced to combine the individual and the content-related perspective (cf. B.10). These skills matrices are considered useful by all of the interviewed pupils except for the youngest one. One of the pupils pointed out that the points on the skills matrices that have been awarded for completed proofs of learning are more meaningful than regular marks, thanks to their exact position on the matrices (I8: 46).

The yearly assessments and the voluntary TELC language tests (cf. section B.9) are further elements of objective evaluation, since they both use a standard of evaluation that is external to the Institute. This kind of feedback is considered useful or very useful by virtually all of the interviewed pupils. The only exception is one pupil whose results in the last assessments were way below the expectations that he had formed on the basis of his proofs of learning over the past year (I7: 247).

Feedback is continually provided to the pupils, not least thanks to the weekly appraisal interviews and the five proofs of learning the pupils have to complete every week. The pupils' current proficiency levels are always visible on their individual skills matrices. This continuity is considered an advantage by the pupils: *"I just think that we can keep good track of where we stand at the moment. And above all, we don't get our school report only in the middle or at the end of the year [...] but we know exactly where we are. And we can specifically work on those things we need"* (I7: 105). The parents, too, are kept informed on their child's learning progress by means of the written *Layout* which the pupils have to take home every weekend. Furthermore, they also receive the term report, which contains a self-assessment by the pupil in addition to feedback by the school.

Feedback is not given for its own sake, but it has consequences: it is discussed and is included in the planning of the pupils' learning, e.g., in the weekly appraisal interviews (cf. section C.2). The relevance of the feedback is particularly evident in the parent-and-pupil interviews, where new goals are defined and mutually agreed on. This particular type of interview plays a key role for the Institute, and the interviewed pupils agree with this estimation. They all rate it at least as useful, most even as very useful. Two pupils commented on the parent-and-pupil interview as follows: *"In these interviews you learn a lot about yourself, about the way you work and how you can improve. And I actually find this pretty good, because it helps you to get on"* (I7: 141). *"Well, you're also told what you're good at and where you can still improve. And then you're offered help by the coach or by the parents"* (I8: 173).

Social comparison

Schools traditionally give marks to the pupils; these marks do not show what the pupils are actually able to do but they are first and foremost a means of comparing the pupils' achievements relative to each other (i.e. a social norm). This is fundamentally different at the Beatenberg Institute. Indeed, considering that every constellation of pupils in the different learning arrangements contains pupils from different age groups and/or with different proficiency levels, there is not even one distinct peer group which the individual pupils can reliably compare themselves to.

Yet, the scale on the skills matrices where the individual skills levels are registered is the same for everyone, and the skills matrices are permanently visible at every pupil's work space (cf. figures 4 and 9). In other words, social comparison is possible and is indeed made. One of the learning coaches stressed that this should by all means be allowed since this kind of social positioning will occur later on in adult life, too, and the pupils need to get acquainted with it (I4: 131 f.). The interviewed learning coaches unanimously agreed that the social comparison at the Beatenberg Institute posed no serious

threat to the pupils' self-esteem, since everyone gets positive acknowledgement all the time (cf. section C.7). Furthermore, there are usually other decisive factors for social integration at the Institute (I3: 118f; I4: 133 ff.; I6: 57, 64; I9: 10 f.).

Drawbacks of novel forms of feedback

With the skills matrices and the presentation portfolio, the Beatenberg Institute has created tools for the detailed description of the pupils' achievements. However, there is a drawback to the originality of these tools, i.e. the fact that they are unfamiliar to relevant actors outside the Institute. For example, one pupil pointed out that the skills matrices were unwieldy in an interview for an apprenticeship because they required a lot of explanation concerning the significance of the scale, the colours and the points (I8: 141). A similar problem arises if secondary schools demand a traditional school report for their admission procedure. In these cases, the Beatenberg Institute issues a traditional school report on the basis of the skills matrices (I2: 388-411). The decision of which mark the pupil's level on the skills matrix corresponds to necessarily depends on the requirement level of the school for which the school report is needed. This illustrates the objective description of achievement made possible by the skills matrices in comparison to the relative nature of school marks.

Conclusion

Pupils at the Beatenberg Institute are continually provided with differentiated feedback on their learning progress (interviews, reports, portfolios, assessments). The feedback not only takes the pupils' individual requirements and goals into account, but it also provides an objective assessment of their current proficiency level on the basis of their positioning on the skills matrices. In contrast to traditional school marks, social comparison is not the central focus though it is still possible as all the individual skills profiles are accessible to everyone in the learning team. All feedback is consistently formative, i.e., it points out what the pupils still have to learn and how they can make progress. The use of novel forms of feedback has its drawbacks outside the Institute because they are little known and therefore require explanation.

C.5 Learning as a social process

The social aspect of learning at the Beatenberg Institute is enriched by the many different groups and constellations in which the pupils meet and work, both in the school context (the learning team, the *Aktivs* etc.) and in their leisure time. In the learning team, interaction between the pupils is explicitly appreciated – as long as they adhere to the school's 'culture of whispering': "It is very important for



Figure 12: The learning team *Talblick* (detail)

the pupils to interact. That's why there is always time for a chat or a discussion, as long as they take place within the 'culture of whispering'. The 'culture of whispering' is quite important because the pupils, too, prefer a quiet atmosphere because this helps them to focus" (I5: 173). In addition, in the weekly presentation of the pupils' work (cf. section B.6) the learning process of the individual pupils is integrated into the collective experience of the learning group.

The fact that the learning teams are composed of pupils of different age and with different proficiency levels lays the foundations for mutual assistance. The pupils quite often avail themselves of the opportunity of asking the help of one of the 'specialists', i.e. one of the pupils who is doing particularly well in the respective subject (I3: 54; I5: 177; I7: 261; I8: 384). They appreciate the fact that this

mutual help sometimes evens out, for example, if one pupil can offer help in one of the language subjects and another one in mathematics (I8: 387-391). The mixed-age group also has an influence on the atmosphere: from the point of view of the older pupils, the presence of the younger ones is both distracting but also enriching: *“We’re now the rather older ones, and yes, to us it is the much younger ones that are annoying. Sometimes it just happens to be the younger ones that are noisy in the learning team”* (I7: 334). *“Well, the little ones just bring some life into the joint. And that’s a good thing for sure, to have the younger ones around”* (I7: 341).

In various learning arrangements, particularly in the *Units*, the *Aktivs* and the *Go4it* (cf. sections B.7 and B.8), collaborative and sometimes project-based learning and working is a priority. These learning arrangements and – to an even larger extent – the characteristics of life in the boarding school provide ample opportunity to practise socially responsible behaviour. This is furthermore supported by the clear and explicit rules that have to be strictly followed (cf. section B.11). The pupils find these rules too strict sometimes, especially if rules are newly created or tightened in reaction to the misconduct of single pupils (I8: 318-339). Time and again, there are conflicts. The learning coaches deal with conflicts openly and explicitly, and depending on the situation they might also involve the Institute’s social educator. With this way of conflict management, conflicts may even become opportunities for development (I4: 317 f.; I6: 33 ff.).

Due to the Beatenberg Institute being a boarding school, the pupils’ relations with each other take up a lot of attention and space, and they are also more varied than in a traditional school. According to the interviewed pupils, a positive climate has developed among them at the Institute: they work together and help each other. Their personal relations are generally described as amicable, even though the situation of living in a boarding school can sometimes be rather irksome because there is hardly any possibility of avoiding each other (I7: 370, 301-305). In addition, some pupils explicitly say that the relation between boys and girls is good and better in fact than it had been in their previous school (I7: 298).

Pupils and learning coaches

The many facets of life in a boarding school are deliberately used to cultivate the relations between the pupils and the coaches. The learning coaches and the pupils regularly meet outside the institutionalised learning time, e.g., for lunch. In every social setting, there are different responsibilities; interaction in the subject settings differs from the interaction in the *Aktivs* – where pupils and coaches might play soccer or other games – and yet other rules apply in the evening, e.g., if they all have a barbecue together (I2: 125). The headmaster sees the well-paid learning coaches’ supervision duties during the pupils’ leisure time and in the late evenings as an investment into a good relationship with the pupils (I10: 199). Such good relations are an important basis for the pupils’ learning motivation (cf. section C.7).

The pupils appreciate these different kinds of relationships with their coaches and consider this diversity to be the reason for their generally good relation with each other. If necessary, the learning coaches are strict and pay close attention to the pupils’ doings, but the interaction is friendly and often jocular. During leisure time the coaches are perceived to be more relaxed, and in the evening the pupils get to know them from yet another side (I7: 307, 353, 356; I8: 294, 300). The coaches, too, see this as a positive aspect of their work (I3: 205).

On entering the boarding school, every pupil is assigned a personal coach. This assignment is not normally changed even if the personal coach and his charge do not get along too well on a personal level. According to a member of the governing body of the school the relation between the personal coaches and their charges is a professional one and it is nearly always possible for the two to develop an objective and trustful basis (I4: 305; I5: 24).

In sum, all of the interviewed pupils judge the social relations at the Beatenberg Institute positively. In fact, when asked about the special quality of the learning environment at the Institute, they named the good relationship among the pupils, the personal and multifaceted relation of the pupils with the learning coaches, and the intensive support by the coaches right next to the possibility of working independently (I7: 348-356; I8: 12-22, 294-300).

Conclusion

At the Beatenberg Institute, learning takes place in several learning arrangements where the youths meet in different groupings and social forms. The social nature of the learning becomes most effective if the youths support each other in the learning teams, present their learning processes and outcomes in the weekly presentations, work collaboratively on projects in the *Units* etc. The mixed-age setting and the boarding school situation contribute to the richness of the social processes. The boarding school situation is systematically used to make sure that the learning coaches and the pupils meet in various situations with different degrees of obligation (classroom time, leisure time etc.). The youths generally assess the social relationships among themselves and with the learning coaches as positive.

C.6 Connected learning

The learning at the Beatenberg Institute is connected in different ways: firstly, the different learning arrangements are interconnected, e.g., by deliberately and systematically using an interdisciplinary approach in the subject settings (like, e.g., dealing with political and social topics in the subject setting German), by using the time in the learning team to work on the learning tasks from the subject settings, or by using the key topic of the week for an in-depth treatment of a topic from the *Aktivs* and *Units*. Secondly, topics from everyday life are dealt with in an interdisciplinary and action-oriented way, especially in the *Units*. Thirdly, the connection between the various subjects is furthermore made evident by the possibility of awarding of multiple points for one proof of learning, e.g., for an oral presentation using PowerPoint on a historical topic a pupil may earn three points, one each in spoken production in German, ICT literacy and history. And fourthly, the connection with the world outside the Institute is maintained especially with the *Go4it* (cf. section B.8), but also with trial weeks in firms.

The Beatenberg Institute takes advantage of the fact that learning does not only take place in a formal school setting but also informally and continuously in everyday life. In a boarding school this connection of learning and everyday life can be exploited particularly well. Especially social behaviour and personal skills can be systematically fostered by talking about and reflecting on everyday situations and conflicts (I1: 81 ff.).

A particularly striking example of informal learning at the Beatenberg Institute is the use of Standard German (instead of the Swiss-German dialect) for all oral communication between the pupils and the learning coaches. Standard German is used not only in the learning arrangements, but also during lunch and in other situations of everyday life, in private conversations and even in conflicts and outside the Institute. The reason why this is remarkable is that the relationship between Swiss German and Standard German has been characterised as an example of diglossia. The dialect is used for most oral communication, irrespective of the interlocutors' social class. Exceptions include instruction at school and formal talks. Written texts, on the other hand, are almost exclusively in Standard German. Accordingly, pupils who are new to the Beatenberg Institute find it difficult to get used to this unusual language policy (I4: 197; I6: 27). However, during their time in the Institute they greatly improve their oral proficiency in Standard German and thus profit considerably for their future working life.

Conclusion

Learning is interconnected – for example, between single subjects as well as between classroom activities and everyday life – via a range of multifaceted, sometimes interdisciplinary and activity-based forms of learning. Particular emphasis is laid on informal learning, which shows in the consistent use of Standard German in all everyday situations. All of these connections may contribute to the integration of new knowledge with existing knowledge. As a result, the pupils' learning has a lasting effect and enables them to cope with new situations.

C.7 Learning motivation

Self-directed learning requires a self-determined learning motivation; if pupils learn only if they are put under pressure, their learning cannot be said to be independent and self-reliant. Self-determination is most clearly present if the learners are intrinsically motivated as a result of their joy and interest in the learning content. Such intrinsic motivation is greatly supported at the Beatenberg Institute by letting the pupils choose their teaching content to a large extent according to their interests and preferences (with the exception of the four subject settings). This is particularly the case in the *Aktivs*, *Units*, *Go4it* and in the key topic of the week.

Self-determined motivation can also develop gradually and be based on the belief in the significance and importance of the learning content. Deci and Ryan's (1985, 1993) Self-Determination Theory describes the conditions for the development of self-determined motivation and interests, i.e. the needs for competence, autonomy and (social) relatedness have to be satisfied. From these three basic needs result a number of criteria by which the motivational aspects of the learning environment at the Beatenberg Institute can be described and assessed.

Success: Experiencing competence

A central aim of the Beatenberg Institute is to enable the pupils to experience a feeling of success, i.e. a sense of achievement. Many aspects of the learning environment are designed in such a way as to enable such feelings of success: success is made visible, e.g., with points on the skills matrices, in the portfolios and in the weekly presentations of the pupils' work; success is an explicit topic in the weekly appraisal interviews and in the parent-and-pupil interview; the definition of learning goals that are tailored to each individual pupil's capability (cf. section C.3) and the regular provision of individual feedback (cf. section C.4) guarantee that each and every pupil meets with success.

This success orientation is evident already at the enrolment, as a member of the governing body of the school describes: *"There are often older pupils coming to us who only see the problems they've had. [...] We then switch from their problems to their strengths. It's important for them to realise what they're good at. We concentrate on the fact that they're usually doing fine in nine out of ten things"* (16: 55-6). During the time at the Institute, the periodic individual feedback helps to show even to the slow learners that they are achieving and making progress. If necessary, some simpler key topic of the week may be defined for certain pupils in order to enable them to complete their task successfully (13: 119). A sense of achievement is particularly valuable if it results from the coping with high, but reasonable demands. As one of the pupils put it: *"Well, when you finish one of those extensive proofs of learning, you really have that feeling of: Yes, finally! Good job!"* (17: 209).

Our observations show that achievements are indeed sought and celebrated in the Beatenberg Institute. In a plenary session where the pupils were to organise the school's sports day, a member of the governing body of the school presented recent achievements of several pupils: one pupil had found an apprenticeship position as a media technician, another had won a floorball tournament with his team, and a third had managed to organise a trial week in a firm.

The *Layout* (cf. section B.9) requires the pupils to record achievements every week. In the weekly appraisal interviews we observed that several pupils had not recorded any achievements, but the personal coaches still tried to convince them that they had actually achieved success, e.g., *"Didn't you gather information on the entrance exam for grammar school all on your own?"* (P12). The degree to which success is publicly announced is a question of culture. For Swiss standards these reports of success are rather unusual, and it was obvious that several pupils found them difficult. A learning coach reported that these reports of success provided a challenge for many pupils (14: 124).

Autonomy and social relatedness

The Beatenberg Institute offers many opportunities for independent learning and working; this has been shown in the description of individualised and self-directed learning (cf. sections C.1 and C.2). The pupils have many options, they formulate their own learning goals, plan their learning time etc. Yet, the Institute's clear and explicit rules (cf. section C.5) provide a clear-cut framework for this

autonomy. The pupils' autonomy, together with their social integration, is accounted for in the pupils' involvement in the parent-and-pupil interviews. By being allowed to codetermine their long-term educational goals together with their parents and their personal coach, the pupils realize the importance of these goals – and their goal-oriented, extrinsic motivation is fostered.

The alternating social contexts (learning team, group work, *Aktivs*, boarding school duties etc.) and especially the excellent relationships between the pupils and the learning coaches (cf. section C.5) guarantee that the need for social relatedness is satisfied. The intensive support they receive is also a clear sign of them being taken seriously by the coaches. A member of the governing body of the school considers this to be a vital basis of the coaches' work: *"A further strength is the fact that we manage to establish very good relations with the pupils, thanks to the people who work here. [...] But it's still the case that many pupils, especially younger ones, don't tackle their tasks because they take pleasure in mathematics, but they do it for me, because I tell them 'hey, that's cool, I think it's great if you're doing this now'"* (I4: 285). The last part of this quote shows that in some cases self-determined motivation still needs to be developed.

Varying levels of motivation

By satisfying the needs for competence, autonomy and social relatedness, the Beatenberg Institute provides very good conditions for the development of self-determined motivation. Nevertheless, there is still a wide range of levels of motivation. For example, the *Aktivs* may be chosen according to personal interests and are explicitly meant as a change from the other settings (I3: 175); in contrast, the subject settings German, French, English and mathematics are compulsory. The learning teams require persistent and concentrated working and learning, too. These different characteristics are reflected in the pupils' statements. When asked which one of their settings they liked best, they named primarily the *Aktivs* and the *Go4it* (I7: 46 ff.; I8: 19, 30); in contrast, some of the pupils described the subject settings as *"somewhat boring at times"* (I7: 65). However, even if some pupils may lack interest in a subject, they can still develop self-determined learning motivation, as the following statement illustrates: *"Well, I don't care much for French, in fact, I hate it really; but still I want to get ahead"* (I8: 361).

It was possible to observe this range of levels of motivation in the subject settings and in the learning teams. It so happens that some pupils may be dallying in the learning team or are underemployed sometimes, e.g., if the learning coach needs to discuss some organisational matter with another pupil. In general, however, the working atmosphere is good. This is all the more remarkable because many pupils had a particularly weak learning motivation when they arrived in the Beatenberg Institute.

Conclusion

Learning motivation is considered to be of vital importance and is systematically fostered at the Beatenberg Institute. For one thing, the pupils may choose their learning content to a large degree according to their own interests; this is particularly the case in their choice of *Aktivs*, in the *Units*, *Go4it* and in the key topic of the week. In addition, their needs for autonomy, (social) relatedness and competence are satisfied, which is generally considered a condition for the development of self-determined extrinsic motivation. A lot of attention is paid to the need for competence in particular. Due to the fact that demands and feedback are matched to the pupils' individual learning requirements and long-term educational goals, every pupil has the possibility to experience success in learning. Care is also taken to make them aware of such successes in order to strengthen their belief in their own abilities to deal with challenges, i.e., their feeling of self-efficacy.

Not all pupils at the Beatenberg Institute are equally motivated, though, and in addition to highly motivated pupils there are youths who are sometimes bored and tend to dally. However, since several of the pupils came to the Beatenberg Institute with a particularly weak learning motivation, the level of motivation they develop at the Institute must be considered a great success.



Figure 13: Flexibly furnished group room with a view of the mountains and a sea of fog

D Impact and effectiveness of the Innovative Learning Environment

D.1 Impact on the pupils

In Switzerland, there are no regular and systematic surveys on the effectiveness of schools. In the absence of established criteria, an indication as to the effectiveness of the Beatenberg Institute is its success in preparing the pupils for grammar school and apprenticeships. According to the headmaster, most pupils reach their individual goals regarding secondary school qualification, sometimes even if grammar school had seemed an unrealistic goal prior to their enrolment at the Beatenberg Institute (I10: 378). The interviewed pupils, too, generally think that they profit from the Beatenberg Institute, in particular with regard to self-directed learning (I3: 69; I8: 340-354). One pupil put it like this: *“I’ve learnt quite a lot up here. You also become more independent and more adult. That’s what I really like about this place”* (I8: 345). A further indication is the fact that 28 out of 30 pupils passed their TELC exam in English or French last year (cf. section B.9). The most important evidence consists in the many parents’ decision to enrol their children in the Beatenberg Institute despite the considerable costs. In addition, the authorities of the two largest cities in German-speaking Switzerland consider the Beatenberg Institute a promising alternative for youths with particular learning difficulties.

There are three independent studies on the Beatenberg Institute, all of which were written as academic research projects. Fuchs (2005) studied the Institute as an example of a school that strongly fosters the pupils’ feeling of self-efficacy. Woizeschke (2006) conducted an interview study in which he examined what effects the teachers’ role as learning coaches has on the youths. In conclusion, they both assessed the Institute’s effectiveness positively. ng and Schnieper (2007) interviewed young adults who had graduated from the Beatenberg Institute within the past ten years. In retrospect, these former Beatenberg pupils arrived at a generally positive assessment of the distinctive features of the Beatenberg Institute and of the effects on their career and personal development. The most striking result is that 21 out of 24 graduates declared that they had learned to work independently (Bolfing & Schnieper 2007: 62). Yet, 18 of the 24 interviewees thought that science had been neglected at the Beatenberg Institute; furthermore, 14 graduates think that the same is true for geography, and 12 think that this also applies to history (ibid.: 68).

D.2 Impact on school development

The headmaster of the Beatenberg Institute has influenced the school development in the German-speaking countries with his educational concept of innovative learning environment. This has been possible because the Beatenberg Institute has proved that this concept is indeed practicable. According to the governing body of the school there are roughly 25 visitor groups of about 10 people every year; two thirds of the visitor groups are from Germany. The headmaster gave 33 talks and multi-day seminars in the past 10 months, 28 of which in Germany and Austria.

Meanwhile, the Learning Factory (cf. section F.3) was created as an organisational basis for this process of school development. The Learning Factory was established in cooperation with the Transfer Centre for Neuroscience and Learning at the University of Ulm (www.znl-ulm.de); it offers a one-and-a-half year, extra-occupational training as learning coach in Ulm, shorter coaching seminars in Switzerland, as well as further programmes to promote school development. Several schools – e.g., schools in Germany and state schools on the level of lower secondary school in the canton of Zurich – have in the meantime adopted elements of the Beatenberg learning environment (cf. section F.3).

E Conclusions

The Beatenberg Institute has developed a learning environment that is explicitly geared to the pupils' individual requirements and educational goals as well as to self-directed learning. According to the interviewed learning coaches and pupils, individualised, autonomous, diverse and socially integrated learning does indeed take place to a high degree, and the learning environment is assessed positively despite a few critical remarks. Our detailed analysis shows that the learning environment meets all of the OECD's criteria for Innovative Learning Environments to a very large degree (cf. chapter C).

The Beatenberg Institute clearly shows that individualisation, self-directed learning and the corresponding abolishment of marks does not necessarily result in a lack of clarity or in pampering. Especially thanks to a high degree of individualisation it is in fact possible to make high but realistic demands on the pupils.

One of the aims of the ILE project is to analyse best practice examples of innovative learning environments in order to identify potential for development for other schools. There are several elements of the learning environment at the Beatenberg Institute that lend themselves well to be transferred to other schools, which is proved by the fact that a number of schools have already implemented several of these elements and by the trainings and cooperation offers that aim to support the adoption of such elements (cf. section F.3).

Basic questions on the transferability of the Beatenberg model

If the qualities of innovative learning environments such as the Beatenberg Institute are to serve as points of reference not only for single schools but for the educational system as a whole, there are some basic aspects that need to be considered:

- a) The Beatenberg Institute has a special, compensatory function within the educational system of Switzerland in that it provides intensive support to youths who are dissatisfied with the public school system and who are usually unwilling to learn when they enter the private boarding school. It is therefore obvious that such a compensatory function does not have to be part of the core business of the regular educational system. Moreover, costs could be reduced by offering less intensive support, which in turn would benefit this model's transferability.
- b) The educational system as a whole does not only have the function to enable each individual's development and qualification, but it also has the duty to ensure the continuity of culture and society beyond the generation change, e.g., to pass on fundamental interpretive models (i.e. enculturation; cf. Fend 2006). From this perspective one might ask just how much weight should be given to the transfer and fostering of basic knowledge and experience in each of the four areas natural science, society/economy/history, arts, and philosophy/religion, in addition to language skills and mathematical skills for all youths (Fend 2008: 53). Such questions regarding educational goals are not addressed by the ILE criteria for innovative learning environments, with the exception of a reference to key competencies.
- c) The teacher's role has been redefined at the Beatenberg Institute, and many of the traditional educational structures have been abolished, like, e.g., the traditional schoolroom, age-based grades, tests, marks and 45-minute lessons. The pupils' learning time has instead been organised with the help of structures and tools many of which relate to the planning and evaluation of the learning process (cf. section B.9). Three more aspects result from these changes:
 - c1) In contrast to the considerable individual leeway in the choice of learning content, the use of these concrete planning tools is mandatory at the Beatenberg Institute. These tools and structures might in principle be misused for an overly strict control of the pupils' learning. If such structural elements are to be transferred to other schools it is therefore important not just to adopt isolated elements but to incorporate the educational concept of the learning environment as well as the teachers' role as learning coaches.
 - c2) Tyack und Tobin (1994: 454) referred to the regular structures and rules that organise the work of instruction as the "grammar" of schooling". It seems that the Beatenberg Institute has

developed a 'grammar of schooling' that differs fundamentally from that of the public school system (cf. c) above). If the Beatenberg model was to be widely adopted, it would have to be carefully considered how essential aspects of its particular 'grammar of schooling' can be taken over and how they can be combined with the existing grammar to form an integrated whole.

- c3) The relative stability of these grammars is also one of the reasons why educational systems are remarkably resistant to reforms (Tyack & Tobin 1994; Fend 2008). Whoever dares to initiate an educational reform has to deal with this kind of resistance. Since such a reform is essentially about educational concepts and the teachers' role(s), it cannot be successfully implemented top-down.

Supporting the adoption of the Beatenberg model

Despite these considerations it is still possible – and has already been done – to adopt certain elements of the Beatenberg model in other contexts. There are a number of essential elements for such a successful adoption, e.g., teachers need to perceive themselves as learning coaches at least to a certain extent, and the pupils need to have learning time at their disposal which they can organise autonomously. For a more advanced adoption of the Beatenberg model, schools might also want to use skills matrices and to introduce mixed-age classes. Of course it is also possible to adopt further elements, e.g., with regard to the assessment of the pupils' educational achievements.

Swiss law allows state schools to decide autonomously on the introduction of many such innovations. In other words, this kind of reform can be initiated bottom up. In addition, if the central administration of the educational system and important educational providers like teacher education institutions feel that it is in their interest, they have many ways in which they can substantially support such reforms, e.g., by

- securing the cooperation between participating schools;
- making explicit their appreciation for innovations (e.g., by awarding a prize);
- developing skills matrices that are applicable to several schools;
- collecting, documenting and making available such learning materials that facilitate working with the skills matrices (e.g., checklists or examples of appropriate learning tasks);
- offering support, counselling and further education to schools and their teaching staff;
- including coaching elements in basic teacher training courses – especially with regard to the corresponding educational attitudes – and offering advanced trainings as learning coach;
- supporting a creative handling of the sometimes conflicting relationship between the supportive role of a learning coach and the assessment according to external standards that is still expected of them;
- objectively evaluating the innovation;
- supporting day schools that allow for informal learning and for a diverse relationship between the learning coaches and the pupils;
- gearing the schools' quality management systems towards essential educational goals: tests must be designed so as to be in accordance with the skills matrices and the transfer of sustainable knowledge (i.e. 'teaching to the test' must result in a meaningful learning experience), and supplementary tools like pupil and parent surveys must be employed in those areas where skills and attitudes cannot be measured;
- adapting legal conditions, school structures and the system of student assessment to the needs of learning environments that foster individualized and self-directed learning.

If an educational reform is supported both from above and below in the way just described, it has the potential to result in a considerable improvement of the educational system and in the provision of an optimal education for each individual pupil.

F Appendix

F.1 Methodology

Survey methods

- *Interviews*: Between December 2010 and February 2011, two informal and eight semi-structured interviews of roughly one hour each were conducted. Guidelines for the semi-structured interviews were developed on the basis of the specifications of the ILE project, methodological literature (Fatke, 2010; Flick, 2002; Mayring & Brunner, 2010), and the results of previous interviews (cf. list of interviews below). All interviews were digitally recorded and were transcribed in standard German instead of the Swiss-German dialect. For analysis and interpretation, the transcripts were thematically coded and subdivided into numbered sections. The case study includes many references to such specific sections of the interviews. These references include the shorthand symbol for the interview (cf. below) and the number of the interview section. For example, (I2: 35) refers to section 35 in Interview 2.
- *Observations*: On six occasions during one week (cf. below), a member of the research team observed the teaching and learning in different learning arrangements at the Beatenberg Institute and recorded the observations in a written protocol. To this end, an observation form was used where basic data on the learning arrangement, the course of events, and observations of predefined aspects such as, e.g., the intensity of the learning, or the use of tools and media had to be recorded.
- *Document analysis*: Several internet sources on the Beatenberg Institute, additional internal documents and video material (cf. section F.2) as well as the numerous publications of the headmaster (cf. section F.4) were analysed for the study.

Interviews

- I1 Interview 1 (informal): December 12, 2010; interviewee: grade 9 pupil
 I2 Interview 2 (informal): December 12, 2010; interviewee: headmaster
 I3 Interview 3: January 25, 2011; interviewee: learning coach (subject settings German and French, 'outdoor' *Aktivs*)
 I4 Interview 4: January 26, 2011; interviewee: member of the governing board of the school and learning coach (subject setting English, sports *Aktivs*)
 I5 Interview 5: January 26, 2011; interviewee: learning coach (subject settings mathematics and German, sports and science *Aktivs*)
 I6, I9 Interviews 6 and 9: January 27, continued on January 31, 2011; interviewee: member of the governing board of the school and learning coach (subject setting English, craft and history *Aktivs*)
 I7 Interview 7: January 31, 2011; group interview with three pupils of the learning team *Bärnermutz*
 I8 Interview 8: January 31, 2011; group interview with four pupils of the learning team *Talblick*
 I10 Interview 10: February 12, 2011; interviewee: headmaster

Observations

- P1 Observation 1: January 25, 2011; learning arrangement: *Unit*; observer: Anne von Gunten
 P3 Observation 2: January 31, 2011; learning arrangement: learning team *Bärnermutz*; observer: Anne von Gunten
 P10 Observation 3: January 26, 2011; learning arrangement: learning team *Talblick*; observer: Erich Ramseier
 P11 Observation 4: January 27, 2011; learning arrangement: subject setting French; observer: Erich Ramseier
 P12 Observation 5: January 27, 2011; learning arrangement: learning team *Bärnermutz* (weekly appraisal interview); observer: Erich Ramseier

P13 Observation 6: January 31, 2011; learning arrangement: plenary meeting of students and staff; observer: Erich Ramseier

Visual data

Miscellaneous digital pictures and films of the Beatenberg Institute are available. Written permission has been granted by the direction of the Beatenberg Institute, the teachers and the involved parents to use this material in project publications.

Project team

Project leader: Erich Ramseier
Researcher: Anne von Gunten
Translation: Lukas Rosenberger
Transcription: Kathrin Arn, Jürg Dällenbach and Anneke Ramseier

F.2 Documents on the Beatenberg Institute

The website of the Beatenberg Institute (www.institut-beatenberg.ch) contains numerous documents on the Institute. In the section *Materialien/Tools* there are examples of tools like *Smarties* (cf. figure 14) and *Layouts*, the section *Materialien/Artikel* contains several papers on pedagogical topics, and the section *Aktivitäten* contains short reports on current *Aktivs*, *Units*, *Go4it* and other events. Selected publications by the headmaster are listed in section F.4 below. Furthermore, two DVDs are available and can be ordered on the website:

Frutiger, Christoph (2006). *Erfolg macht Schule. Neue Lernkultur: das Modell Beatenberg*. Dokumentarfilm. ISBN: 3-03905-261-6. Bern: hep.

Moll, Bruno (2003). *Fit for life. Lernen ist eine Dauerbaustelle*. Dokumentarfilm. ISBN: 3-03905-262-4. Bern: hep.

As part of the Institute's school development (cf. section B.12) there are periodical surveys in which the pupils are asked to judge how well their learning coaches fulfil their tasks in the learning teams, in the subject settings, as personal coaches etc. The results of the spring 2011 survey were included in the analysis for the present case study.

SMARTY

Name, Datum: <Name, Date:>

Fach | Bereich | Niveau | Bewertung (Punkte) ○
 <Subject / field/ Level / Assessment (points)>

1 Thema: Um was geht es genau? Ziel gemäss Checkliste
 <Topic: What exactly is it about? Goal according to checklist>

2 Lernnachweis: Woran will ich gemessen werden? Tätigkeit & Form (22x33)
 <Proof of learning: What do I want to be judged by? Activity & form (22x33)>

3 Weg zum Erfolg: <Way to success:>

	Entwickeln	<Develop>
	Entwerfen	<Design>
	Ausarbeiten	<Elaborate>
	Präsentieren	<Present>

4 Termin: Wann ist die Arbeit abgeschlossen? Datum:
 <Deadline: When is this work finished? Date:>

5 Visum: <Signature:>

6 Auswertung: <Evaluation:>

enttäuscht		sehr zufrieden
 		
<disappointed		very satisfied>

Figure 14: The *Smarty* template (original size: A4)

Table 2: Skills matrix for learning skills ('learning to learn')

LEARNING SKILLS				
	A	B1	B2	C
Orientation skills	If I have to solve a task I can work out a procedure "on the go". If I'm given a few hints I can recognize similarities with previous tasks ("I see, isn't this like...").	If I'm faced with new tasks and topics I can explain to myself what exactly they are about. I can arrange things in my mind, for example, with the help of sketches. And I can tell which of the things I'm already familiar with this task is related to. For example, I can assign tasks and topics to the relevant skills matrices.	I can relate new tasks and topics to skills matrices or other reference values. I can arrange things in my mind and structure them (e.g., in the form of sketches or Mind Maps) so that I know where and how I can approach a task. I can also recognize what relevance a topic has for me.	I can explain to myself what a topic is all about. To this end I can pre-structure things, arrange them in proper order (e.g., with sketches, Mind Maps, Advance Organizer) and relate them to the skills matrices. I can activate my previous knowledge and relate the new topic to known facts. In other words, I can establish diverse relations between myself and the topic at hand. Accordingly, I'm aware of my own mental state as well as of the relevance and value of a task.
Planning skills	I can outline a learning goal and in so doing develop a rough idea of what is expected of me.	If I concentrate or check with someone, I can imagine what a result will look like and how I could go about to achieve it. This helps me to describe a potential goal.	I can usually get a picture of what it is I need to do. I can formulate the next steps as a goal in such a way that I know how to proceed and what to expect as a result. In my planning I often manage to account for possible stumbling blocks.	I can develop a concrete idea of the intended results, and I formulate this idea as a <i>Smarty</i> learning goal. I can describe by what criteria it is possible to discern that the learning goal has been achieved. I can also establish such reference standards by means of examples. I can outline the felicity conditions, i.e., I can anticipate potential obstacles and organise the necessary resources.
Information management skills	If someone tells me how I should proceed I'm able to learn things in such a way that I remember them for a long time.	I know different learning methods that help me to better understand things. And if I remember them, I can apply these methods [...] to better retain things in memory.	I can gather missing information (e.g., from reference books) and combine it with existing information. Using different methods I can apply various learning techniques in situations and with topics I'm familiar with, in such a way that I have the feeling that I really understand things. [...]	I can gather information in many different ways. I can compare the gathered pieces of information, assess them, and combine them. I can get the gist of the information using the most effective out of a range of processing techniques [...]. I can secure my learning results so that I'm able to reconstruct, reproduce and contextualize them even after a longer period of time.
Problem solving skills	If I'm stuck with a problem it usually takes only a little hint for me to find a way of solving the problem (e.g., making a sketch or asking others).	If I'm faced with a problem (e.g., if I have difficulties finding an appropriate approach or if I get stuck) I can usually find a solution on my own. If I'm still stuck I ask others how they would go about it.	If I'm faced with obstacles or if I'm not happy yet I can think about it and develop ideas whether and how I could approach the task from a different angle. In doing so I can rely on approaches that have helped me in other situations. I reflect and explain to myself various options, and I deliberately choose the most promising alternative.	I can usually find inventive ways and approach things creatively because I always think about what alternative approaches there are. In this process I can apply strategies and methods that I have acquired by deliberately observing how others go about things. This repertoire of ideas also helps me to run through different approaches in my mind („that might work, too") in order to overcome the impasse. I'm also able to adapt the methods to the progress of work.
Evaluation skills	I can check the result of a task and make corrections if someone tells me what to pay attention to.	I can check a task (and indeed I usually do) in order to examine if there is anything I could do better or differently. I usually manage to find shortcomings or mistakes that I can correct.	I can compare the results of my work with reference standards (e.g., goal formulation, checklist, examples) and find discrepancies. I can improve the things I'm not happy with so that the result of my work is as good as possible. I can also ask others for advice in order to achieve impressive solutions.	With the aid of different reference standards (goal formulation, checklists, examples, my own demands) I can identify the criteria that need to be fulfilled for something to be "good". In my work it is a matter of concern for me to continuously achieve improvement. When in doubt, I check up or ask someone. I always check my results for quality and use the feedback of others to improve things even more.



Table 3: Glossary of the specific Beatenberg terminology

Original term	English translation	Explanation cf. section
Agenda	<i>Agenda*</i>	B.9
Aktiv	<i>Aktiv*</i>	B.7
Baumarkt	building supplies store	B.6
Checkliste	checklist	B.10
Sammelportfolio	collection portfolio	B.9
Feedbackgespräch	end-of-term interview	B.9
Go4it	<i>Go4it*</i>	B.8
Wochenschwerpunkt	key topic of the week	B.6
Layout	<i>Layout*</i>	B.9
Lerncoach	learning coach	B.3
Fachcoach	learning coaches who are in charge of a subject setting	B.3
Lernportfolio	learning portfolio	B.9
Lernjob	learning task	B.9
Lernteam	learning team	B.6
Standortgespräch	parent-and-pupil interview	B.9
Bezugscoach	personal coach	B.3
Selbstkompetenz	personal skills	B.10
Werkschau	presentation of the pupils' work	B.6
Präsentationsportfolio	presentation portfolio	B.9
Lernnachweis	proof of learning	B.9
Kompetenzkompass	skills compass	B.9
Kompetenzraster	skills matrix	B.10
Smarty	<i>Smarty*</i>	B.9
Fachsetting	subject setting	B.5
Trimesterbeurteilung	term report	B.9
Unit	<i>Unit*</i>	B.8
Bilanzgespräch	weekly appraisal interview	B.9

*Those terms that have not been translated for the case study are written in italics throughout the text.

F.3 Network around the Institute Beatenberg

Learning Factory GmbH

(www.learningfactory.ch)

The Learning Factory offers trainings and services that are based on the educational concept of the Institute Beatenberg (cf. section D.2).

UpdateNet

(www.updatenet.net; www.updatenet.net/english)

UpdateNet shows the theoretical basis and the pedagogical concepts of the Beatenberg Institute, organized as a hypertext document. A small part of UpdateNet is also available in English.

The following list contains examples of schools where parts of the learning environment of the Beatenberg Institute have been adopted:

Sekundarschulen Petermoos und Ruggenacher

(www.lela.info)

Public schools for grades 7 to 9 in the Swiss canton of Zurich, where part of the instruction time is organised as *Lernlandschaften* ('landscapes of learning'), i.e. as learning teams, with teachers acting as learning coaches.

Sekundarschule Bürglen

(http://www.schulebuerglen.ch/xml_2/internet/de/application/d227/d376/f377.cfm)

A public school for grades 7 to 9 in the Swiss canton of *Thurgau*, which offers *Lernlandschaften* ('landscapes of learning') that are similar to the learning teams of the Beatenberg Institute.

Max-Brauer-Schule

(<http://www.maxbrauerschule.de>)

A large comprehensive school in Hamburg, Germany, that is attended by roughly 1300 students. In the *Lernbüros* ('learning offices') for grades 5 to 7, learning is organised like in the learning teams at the Beatenberg Institute: the students learn self-dependently with the help of checklists and skills matrices.

Gemeinschaftsschule Lübscher Kamp

(gemeinschaftsschule-luebscher-kamp-itzehoe.de/)

A comprehensive school for grades 5 to 10 in Itzehoe, Germany, that is attended by roughly 240 students. The educational programme and the organisation of this school have been designed in consideration of the learning environment of the Beatenberg Institute. An agreement between this school and the Beatenberg Institute secures the exchange of materials and teachers.

Greenhouse School

(www.greenhouse-school.de)

A private comprehensive day school for grades 5 to 12 in Graal-Müritz, Germany. In grades 5 and 6 a third of the learning time is organised as 'Individual Learning Time', which is largely equal to the learning team at the Beatenberg Institute.

F.4 References

- Bolfing, M., & Schniepper, M. (2007). *Institut Beatenberg. Vor- und Nachteile individueller schulischer und persönlicher Förderung einer unkonventionellen Schule - Evaluation bei ehemaligen Schülerinnen und Schülern*. Luzern: Pädagogische Hochschule Zentralschweiz.
- Deci, E. L., & Ryan, R. M. (1985). *Intrinsic motivation and self-determination in human behavior*. New York: Plenum.
- Deci, E. L., & Ryan, R. M. (1993). Die Selbstbestimmungstheorie der Motivation und ihre Bedeutung für die Pädagogik. *Zeitschrift für Pädagogik*, 39, 223-237.
- Deci, E. L., Vallerand, R. J., Pelletier, L. G., & Ryan, R. M. (1991). Motivation and education: The self-determination perspective. *Educational Psychologist*, 26, 325-346.
- Fatke, R. (2010). Fallstudien in der Erziehungswissenschaft. In B. Friebertshäuser, A. Langer & A. Prengel (Eds.), *Handbuch Qualitative Forschungsmethoden in der Erziehungswissenschaft* (S. 159-172). Weinheim: Juventa.
- Fend, H. (2006). *Neue Theorie der Schule*. Wiesbaden: VS Verlag für Sozialwissenschaften.
- Fend, H. (2008). *Schule gestalten. Systemsteuerung, Schulentwicklung und Unterrichtsqualität*. Wiesbaden: VS Verlag für Sozialwissenschaften.
- Flick, U. (2002): *Qualitative Sozialforschung. Eine Einführung*. Reinbek bei Hamburg: Rowohlt.
- Fuchs, C. (2005). *Selbstwirksam lernen im schulischen Kontext. Kennzeichen - Bedingungen - Umsetzungsbeispiele*. Bad Heilbrunn: Julius Klinkhardt.
- Mayring, P., & Brunner, E. (2010). Qualitative Inhaltsanalyse. In B. Friebertshäuser, A. Langer & A. Prengel (eds.), *Handbuch Qualitative Forschungsmethoden in der Erziehungswissenschaft* (S. 323-333). Weinheim: Juventa.
- Tyack, D., & Tobin, W. (1994). The "Grammar" of Schooling: Why Has It Been So Hard to Change? *American Educational Research Journal* 31, 453-479.
- Woizeschke, T. (2006). *Der (Beaten-) Berg ruft!? Zur Wirkung eines Schulkonzepts mit LernCoaching (Institut Beatenberg, Schweiz)*. Schriftliche Hausarbeit zur Staatsprüfung für Sonderschullehrer/innen an der Universität Flensburg – Institut für Heilpädagogik.

Select publications by Andreas Müller, the headmaster of the Beatenberg Institute

- Müller, Andreas (1999). *Nachhaltiges Lernen oder: Was Schule mit Abnehmen zu tun hat*. Beatenberg: pepp-Medien.
- Müller, Andreas (2001). *Lernen steckt an*. Bern: hep.
- Müller, Andreas (2002). *Wenn nicht ich, ...? Und weitere unbequeme Fragen zum Lernen in Schule und Beruf*. Bern: hep.
- Müller, Andreas (2004). Dem Wissen auf der Spur. Lernjobs laden ein zur entdeckenden Auseinandersetzung. *Grundschule*, 36(11), 8-18.
- Müller, Andreas (2004). *Erfolg! Was sonst? Generierendes Lernen macht anschlussfähig oder Bausteine für Lerncoaching und eine neue Lernkultur*. 1. Aufl. Bern: hep.
- Müller, Andreas (2004). Erziehungsziel: Selbstbeobachtung und Selbstbewertung. Mit Kompetenzrastern Lernen und Leistung transparent machen. *Pädagogik* 56(9), 25-29.
- Müller, Andreas (2006). *Eigentlich wäre Lernen geil. Wie Schule auch sein kann: alles ausser gewöhnlich*. 1. Aufl. Bern: hep.
- Müller, Andreas (2006). Lerncoaching. Ein zukunftsfähiges und wirkungsvolles Modell schulischen Lernens. *Grundschule*, 38(3), 6-15.
- Müller, Andreas (2008). *Mehr ausbrüten, weniger gackern. Denn Lernen heisst: Freude am Umgang mit Widerständen, oder kurz: vom Was zum Wie*. 1. Aufl. Bern: hep.