Chapter 11

Good Practice in Inclusive Education: Participatory Reinterpretation of Already Existing Elaborate Classroom Practices Under a UDL Perspective

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Abstract This chapter presents well-established educational practices implemented at a school in Vienna with two decades of experience in school development in the context of inclusion. It elaborates on how these existing teaching practices can be interpreted from a UDL perspective. Furthermore, this chapter aims to underline the importance of engaging with teachers' perspectives in research efforts regarding the design of learning environments. Findings point to the advantages that the emphasized consideration of localized and societal backgrounds of students could add to the purposeful application of UDL.

Keywords Participatory action research · Reassessment of practice · UDL localization · UDL

11.1 Introduction: UDL from an Established Pedagogical Perspective

Considering Universal Design for Learning (UDL) as a strategy to supply individual approaches to facilitate teaching and learning environments in regard to specific learning needs (see Chap. 3), it is important to assess its local contextualization. As appropriate individualized ways of learning already existed before the development of UDL, the authors aim to use UDL-based perspectives to reassess the existing pedagogical and instructional practices. All of the above will be elaborated on and discussed in order to underline the importance of teacher engagement (also related

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to research processes as well as theory-practice-transfer) and the individualized design of learning environments that considers the societal background of students.

The main questions guiding the research process are:

How can existing elaborate practices in inclusive education be reinterpreted under a UDL perspective?

How can UDL enrich these existing practices?

How can contrasting perspectives help to highlight gaps in current teaching and thereby add to an even more child-centered practice?

The principles of UDL are rooted in empirical education research, developmental psychology, and cognitive neuroscience, and stem from the history of school research in North America. On the other side of the Atlantic, the European reform pedagogy movement of the twentieth century was a source of numerous developments for innovation in school teaching (Flitner, 1992). Especially in German-speaking countries, reform-oriented pedagogues referred to these theories and practical suggestions for inspiration and further development. The introduction of integrated education of children with and without disabilities was combined with the rediscovery of reform pedagogy at the beginning of the twentieth century. Reform pedagogy (with differentiated instruction [DI] as a current term) as opposed to UDL is embedded in different educational traditions. Both applications address the same phenomenon in existing school practices with different scientific terms. In line with this, this chapter highlights the fact that some of the underlying ideas of UDL already form part of well-established teaching practices, which have other historic and/or systematic roots but might hint toward further ideas for innovative developments. Thus, it will be used to reinterpret current teaching practices and contrast them with established perspectives in order to promote child-centered holistic approaches.

History and Present of the Austrian Education System with a Focus on Schooling for Children with Special Educational Needs and a (Forced) Migratory Background

Selected historical background of societal and school-related development in Vienna is important for an understanding of this chapter, as the roots of reform-oriented schools in German-speaking countries differ from the scientific foundation of UDL. Nevertheless, similarities may be found in certain fundamentals of teaching and learning.

The Dual Monarchy united a number of linguistic groups in Middle and Eastern Europe and the Balkan area. Though the official language in the capital Vienna was German, a number of other languages, including Hungarian and different Slavic languages like Czech, were colloquial as well as official languages in different parts of the Austro-Hungarian Empire. Among other factors, this linguistic influence has been a driving factor behind Austria's culturally diverse population. Vienna has seen

several phases of the migration of large groups from other countries in its recent history. With respect to the last phase of immigration, forms of emergency education even had to be rapidly setup in a question of months, as described by Proyer et al. for the years 2016 and 2017 (Proyer et al., 2019).

The first education models for deaf and blind children were developed at the beginning of the nineteenth century in Vienna. There were also a few experiences with children with so-called intellectual disabilities in the middle of the nineteenth century.

A number of remedial education schools were established in the 1920s, especially in Vienna and some other Austrian cities (Gstach, 2019, 27). In the same period and during the early 1930s, new concepts of remedial education emerged which influenced the whole region as well as neighboring countries like Hungary (Zászkaliczky, 2008).

The time of National Socialism brought a dramatic halt to the development of school support for children with disabilities and 7 years of destruction for the educational structures that had emerged in the 1920s and early 1930s. Most of the persons with intellectual and severe disabilities were murdered by the National-Socialist which finally collapsed in 1945 with the invasion of the Soviet army.

After this abrupt halt to all efforts concerning the education of children with disabilities, a historical fast forward leads us to disability activists and with them the disability rights movement, but also parental movements for the integration of disabled students surfaced at the beginning of the 1970s (Biewer, 2017, 227). In German-speaking countries, reform-oriented teachers and researchers joined the parental movement and provided them with ideas as to how schooling with highly diverse classrooms could be implemented. It was a time of rediscovery of the international reform pedagogical movement, which arose in the first few decades of the twentieth century through the conceptual ideas of Maria Montessori and Peter Petersen and continued with contributions from Celestin Freinet and others. The first integrative classrooms for children with and without disabilities, which were established in large German cities such as Munich, Hamburg, Berlin, and Cologne, referred to this reform pedagogy heritage. This reform process and the references to reform pedagogical ideas by teachers have been well documented in a large number of scientific studies (Biewer, 2001).

Nevertheless, in Austria, the first official integrated classroom for children with and without disabilities was established only in 1984 in the small town of Oberwart in the province of Burgenland at the frontier with Hungary. An oral history research study conducted with the actors of this process revealed the roots and sources of this process (Bundschuh & Polster, 2012).

The Austrian school organization law was in fact modified in 1993 and introduced some significant changes for the special educational system. Parents of children with special educational needs (SEN) in primary schools (grade 1 to 4) in Austria were given the right to decide whether their children should attend special schools or integrated classes. Three years later, integrated classes were established for grades 5 to 8 of secondary schools through a follow-up law. In 1997, the first integrated classes were setup.

Importantly, and besides the still existing system of special schooling, two integrative models were implemented: “integrated classes” with permanent double-staffing by one regular and one special schoolteacher, and so-called “support teacher classes,” which are attended by special educators only for a limited number of hours per week. The latter model is now widespread in urban areas. The model of support teacher classes was particularly suitable for schools in rural areas with few children with special educational needs, while in cities the model of integrated classes dominated. In the city of Vienna, more than 300 classrooms with this form of double-staffing exist in primary schools (grade 1 to 4) and 350 in secondary schools.

In the years after the new legislation, integrative models expanded across the country, albeit maintaining the previous special school structures to varying extents (Biewer, 2017; Biewer & Proyer, 2017). In 2004, Austria had a 3.6% rate of students with SEN in grades 1 to 8, half of them attending special schools and the other half educated in integrated or support teacher classes. At this time, 2% of children were attending special schools. As a result of this legislation, most children with SEN attend regular schools. Since 2004, the rate of children with SEN in compulsory education has increased slightly to 4%, with less than 2% still in special school settings.

The large number of students with a migratory background is an important factor when considering teaching in heterogeneous classrooms, especially in Vienna. The legislation of the 1990s focused on children with SEN, without contemplating the intersecting backgrounds of disability and migration (Luciak & Biewer, 2011). In Vienna, where most schoolchildren have a migratory background in their family (when including second and third generations), this approach is problematic.

Current trends toward inclusion in school point to different local variations in Austria (Nationaler Bildungsbericht Österreich/National Education Report Austria, 2018). Federal structures lead to different levels of schooling in specialized, integrative, or so-called inclusive or hybrid settings, while mirroring similar tendencies common in Europe. Integration at primary level is widespread, whereas a number of individual, social, and institutional factors compromise the development of elaborated classroom practices for inclusion at secondary school level (Biewer et al., 2015). Recent efforts in education policy aim to further establish inclusive structures, while at the same time maintaining special educational expertise. Teacher education in Austria has seen stark changes (Buchner & Proyer, 2020), with training in developing inclusive teaching materials being one of the cornerstones of the curriculum.

Schulzentrum Donaustadt: The Institutional Development of the School

The research on which this chapter is based has been conducted in “Schulzentrum Donaustadt” (henceforth referred to as SZD), an inclusive secondary school for children and youths between the ages of 10 and 15 in Vienna. The school is located in “Donaustadt” (equivalent to “Danube City” in English) in a part of Vienna east of the main arm of the Danube river. This part of the city is not an area where socially privileged families with high incomes live, but it is also not a region with concentrated multiple problems. It is typical of the mixture of different groups we find in most parts of the city as a result of long-standing urban planning measures. That is to say, earlier urban planning measures are relevant for the description of the educational environment.

The school has a number of students with SEN, but even more students with a migratory background and/or from socially disadvantaged contexts. The school has a long history of teaching heterogeneous groups and developing appropriate teaching methods. By analyzing the existing teaching and education methods, the study shows that many of these can be reinterpreted using the UDL framework, though the theoretical background of their development is different. Elaborating on this perspective is at the core of this chapter.

Prior to 1997, the school was a center for special needs education, consisting of special education classrooms (Abels, 2015). Now it is a mainstream school, consisting of inclusive classrooms without special classes. The 20-year period that has elapsed has therefore been a time of school development and of transformation of the school’s structure. In 1996, the school began with its first integration classroom. Within a few years this had advanced to being the structural model for all classrooms.

In the school year 2019/20, the school had 200 students in grades 5–8, in 11 classes. Nine of these were recognized as integrated classes with students with and without special needs. The two other classes, called “Aufbaulehrgang,” were for students who temporarily needed more support in their learning activities than others.

In 2015, SZD received the status of a cooperation school of the University of Vienna (“Kooperationsschule +”). This status is given to a small number of schools which collaborate in teacher education over several years and develop sustainable structures in this area. In these years of cooperation, a number of common activities have been arranged between university and school staff, and university students and students, as well as various research activities between university students and lecturers. Working at eye level is of high importance in this collaboration, as both parties (university and school) take the view that sustainable change for educational practice can only be realized together.

One example of prior explorations of research activities related to learning environments will be briefly introduced in the following: Spaces for inclusive instruction in the sense of Universal Design depend on the existence of different activity zones. Children with disabilities need retreat areas as well as activity zones and areas for contact and social development. A Master’s thesis from the Department of

Education of the University of Vienna analyzed social space in the process of inclusion in this school in the years 2018 and 2019 (Sikorskaya, 2019). Its core question was: Is there a connection between space and the way people perceive themselves? Based on the assumption that spaces are regarded as catalysts with effects on social space and disability, the author found that the school provides spaces for preparation of students and arrangements which generate regulations regarding placements. Differences become irrelevant and disabilities are no longer visible in the social arrangement of the school.

Plans to follow-up on this research in an established research context to gain longitudinal results and work on sustainable improvements to learning environments of students with disabilities and/or a migratory background have had to be delayed, and this has also affected the process and depth of data analysis for this specific data set. This is why this chapter focuses on the analysis of data related to parents and teachers.

SZD symbolizes the end result of this process. It started as a school for children with special needs and developed into an integrative school by reducing the number of students with special needs and replacing the school population with children without special needs. This also takes time and can only be successful if the pedagogical approach of the school is elaborated in such a way that it is attractive to the children in the area. That is, the focus should be on pedagogical and instructional approaches which involve each child and transform the school into a place which parents want for their children, and where students want to be and learn.

Methods of Collaborative and Individualized or Diversified Instruction at SZD

The current pedagogical practices in the school are the result of the specific institutional development described in section “[Schulzentrum Donaustadt: The Institutional Development of the School](#)”. School practices will be presented as described in documents of the school. Most were written for public presentation of the activities; others arose through the internal school development process. This shows the lack of academic documentation of inclusive school development. In the documentation, the school development team describes the didactic concepts that they use in relation to twentieth century reform pedagogy, with references to, among others, Montessori, Petersen, and Freinet (source: internal school documents).

Simone Abels, a researcher in the didactics of natural sciences, described the experimental forms of learning at SZD in her subject (Abels, 2015). As Abels reported, research-based learning is implemented in two organizational forms called “box lessons” (“Schachtelstunden”) and “learning workshops” (“Lernwerkstatt”) (ibid. 141). During “box lessons,” students can choose from a number of exploration and learning settings. More than a hundred materials are prepared for an overall topic, e.g., water, insects, or light and color. The boxes contain instructions,

materials for activities, and self-directed control of solutions. The students choose the actual topics in the given area and whether they want to work alone, in pairs or in groups depending on the topic. At the end of an activity, the students write a protocol. In regular sequences, activities of the past months are reflected on with the teacher and an evaluation sheet is written by teachers and students in a collaborative manner. The materials recall the type of material used in the area of “cosmic learning” in Montessori pedagogy and the teaching interactions recall the well-known interactions found in the pedagogy of Peter Petersen and Celestin Freinet.

The “learning workshop” enables days-long, research-based, interdisciplinary, autonomous explorative learning on the actual school premises. The whole class works on one topic for 4 days. The room where the “box lessons” normally take place, referred to as the “learning workshop,” is a room fully equipped with free accessible materials to inspire students to develop their own questions (ibid.). Each of the activities forms part of one of the overall topics as described above which can be from either the natural or social sciences. Again, students choose whether they want to work on these topics alone, with a partner or in a group of three or four persons. Teachers supervise the work of the students and help them to find appropriate questions and projects. The students might work for several days on a topic, using a research diary and presenting their results to the other students at the end.

11.2 Methodology and Database

The following section will introduce the methodology used to collect and analyze data, a specific facet of Action Research – (Critical) Participatory Action Research – will be presented as our approach for the collaborative collection of data. This section will be followed by the introduction of methods from Constructivist Grounded Theory as our chosen approach to analyze data gathered from the action cycles. Finally, the research ethics – which are of particular importance for every participatory approach – will be discussed.

(Critical) Participatory Action Research Cycles

Research activities in Austria were guided by applying Participatory Action Research (PAR, see Chap. 4 for details), as it is particularly suitable for the transformation of school cultures and the empowerment of both teachers and students (Armstrong & Moore, 2019). This is particularly significant when it comes to the paradigm shift from segregation and exclusion toward inclusion. Armstrong and Moore (2019, 7) therefore suggest drawing together a “manageable piece of research which increases understanding about the barriers to inclusion and challenges exclusionary practices, and in which collaboration with others is possible.” PAR in educational contexts promotes democratizing research through fundamentally valuing

and incorporating the perspective of people forced to deal with exclusion – regardless of whether they experience it on the receiving or on the (re-)producing end (ibid.). Against the backdrop of our research topic, it is therefore no surprise at all that we opted for this approach. SZD consequently is in the process of extended transformation into an inclusive school, even though the school system in Austria may not be described as an inclusive one at all (see section “[History and Present of the Austrian Education System with a Focus on Schooling for Children with Special Educational Needs and a \(Forced\) Migratory Background](#)” for more detailed information). In Critical PAR, “the reciprocity between practitioner–researchers and others in a setting is amplified even further: responsibility for the research is taken collectively by people who act and research together in the first person (plural) as ‘we’ or ‘us’. Decisions about what to explore and what to change are taken collectively. In this case, however, people explore their work and lives as socially constructed formations that may need to be transformed if their work and its consequences are irrational, unsustainable or unjust” (Kemmis et al., 2014, 16).

The final plan that was implemented consisted of the following phases and elements:

1. *First cycle – Analysis of barriers for learning and good practices (school year 2018/2019)*: In this step, barriers for learning, as well as examples for good practice, were analyzed based on data stemming from students as expert learners in the 8th and 5th grades, their teachers, and (some of) their parents.
2. *Second cycle – focus on social interactions, intervention, and reflection (school year 2019/2020)*: Based on the results from the first cycle, we decided to continue collecting data from the “new” 8th graders as (potential) school leavers as well as from the “new” 5th graders as newcomers at SZD but also from the “old” 5th (and now 6th) graders to have follow-up data from an already known group.

Focusing on these three age groups was based on the decision to not only collect barriers and good practices (as during cycle 1), but rather to focus on social interactions in, during, around, and outside class as important factors that may hinder or foster learning. Interviews with teachers and workshops with students as well as the so-called “Buddy Books” (see next segment for details) turned out to be valuable resources for the second cycle. Additionally, teacher trainees interning at SZD from October 2019 to February 2020 supported the data generation. Based on a joint decision with teacher teams from all grades, these teacher trainees were asked to observe, but also to plan and to implement UDL-based lessons and to present, discuss, and reflect both their approaches and their observations with teachers at SZD. In doing so, teacher teams were able to gain insights into their daily job routines from an outside perspective and subsequently enabled to reflect on potential “blind spots.” Furthermore, teacher teams learned how to use UDL in their classes by observing the teacher trainees.

The two research cycles with the actors involved in the research routines can be illustrated as follows:

The classical model of an Action Research Cycle tends to depict each step as a separate process. However, as can be seen in Fig. 11.1, specific activities were more

Fig. 11.1 Implemented action research plan at SZD and actors involved

interlinked and ongoing exchanges with the three collaborating teachers led to some overlapping layers that present a more holistic picture.

Data Material

Stemming from the Critical participatory action research approach as described above, we – all team members including the practitioner-researchers as well as academic researchers and research assistants (that is teacher trainees employed in the project) – collected a wide range of data with an initial focus on barriers for learning. In order to get the broadest possible picture, data from all the parties involved were collected. Certain settings such as parent–teacher meetings provided opportunities to reach large numbers of parents at the same time, while other situations called for written interviews or structured notes taken from team meetings to meet the needs of the teachers involved. Understandably, teaching teams could not afford to spend a lot of time on oral group-based interviews. Nevertheless, oral interviews with three teachers were conducted regularly to gain in-depth insights into the daily work of the teachers. Student-sourced data was collected in workshops, in which students were divided into four groups. Additionally, 6th grader Buddy Books were (and continue to be) analyzed.

Table 11.1 shows an overview of all the data collected.

Due to the extensive data set and the continual exchanges with the collaborating teachers hoping to get immediate feedback, the authors focused first on an analysis in reference to the parents and teachers. At the time of writing, a detailed analysis of

Table 11.1 Detailed description of data material

Name	Content	No.	Date	Grade
Notes from a conference with students, parents, and teachers	Barriers for learning from students, parents and, teachers' perspective	6	October 2018	5th, 8th
Notes on talks with parents (from a conference with parents and teachers)	Barriers for learning from parents' perspective	3	December 2018	6th
<i>Buddy Books</i>	<i>Barriers for learning from students' perspective, social interactions in, around, and outside class</i>	28	<i>Unspecified; winter term 2019</i>	<i>6th</i>
Notes from a conference with parents and teachers	Barriers for learning from parents' perspective, social interactions in, around, and outside class	3	November 2019	6th
Observation protocols	Observation of situations in class (focus on barriers for learning)	3	November 2019	5th
Interview with teachers 2 and 3	Barriers for learning from a teacher's perspective, social interactions, challenges, and opportunities through the implementation of UDL, already existing good practices	1	November 2019	6th and 7th
Notes from teachers' team meetings	Barriers and opportunities for learning from a teacher's perspective, social interactions, and implementation of UDL	3	November 2019	5th, 6th and 7th
Interview with teacher 1	Barriers for learning from a teacher's perspective, social interactions, challenges, and opportunities through the implementation of UDL, already existing good practices	1	December 2019	5th
<i>Workshop with 8th graders</i>	<i>Barriers for learning from a student's perspective</i>	4	<i>December 2019</i>	<i>8th</i>
Questionnaires with teachers	Approach to UDL	3	January and February 2020	5th, 6th, and 7th
Interview with teachers	Already existing good/best practices; approach to UDL, opportunities and challenges with the implementation of UDL	1	March 2020	5th, 6th, and 7th
Interview with teachers	In-depth insights into already existing good/best practices; history and current developments and (potential) future of SZD	2		

student-sourced data – marked in italics in the table above – is still underway but will not be referred to.

In the first Action Research Cycle in the school year 2018/2019, the aim was to find out as much as possible about barriers for learning as experienced by students, teachers, and parents. This constituted the first phase of data collection but can also be considered as a first approach to sensitize students, parents, and teachers in terms of a careful and detailed reflection on what students might need to learn best and how their learning environments should be designed.

In a first step, parents, students, and teachers from all three 8th grade classes were asked to write down what they considered as barriers for learning on forms provided in the context of a parent-teacher conference in October 2018. The project team decided to focus on this grade due to the particular challenges reported by one of the teachers: namely that as the students left school after this school year pressure on the students and teachers (and indeed the parents) was extremely high.

The project team also decided to collect at least some (although not extensive) additional data from 5th graders and their teachers and parents. These students had just started in SZD and their teachers were just getting to know them. We decided to collect these perspectives in order to have a group of students and parents to follow over two consecutive years.

One year later, and now in our second Action Research Cycle (school year 2019/2020), this same group was now in the 6th grade. Again, in the context of a parent-teacher conference (in November 2019), parents were asked to write down the barriers which hindered their children from learning. Particular focus was also put on social interactions in, around, and outside the classrooms.

The perspective of students was not captured using paper and pencil (as for their parents), but via an analysis of the so-called Buddy Books (Perkhofer-Czapek et al., 2018). Selected classes at SZD are using these books to plan, track, and provide both student and parent feedback on their learning progress. Grades 5 and 6 use the same edition, while grades 7 and 8 have a specific version for older children.

Buddy Books serve as a data source to learn about perspectives not only on barriers, but also on helpful aspects for learning progress. In total, 28 Buddy Books from 6th graders (former 5th graders, see above) were screened. An in-depth analysis, including of the capture of the actual words of the children, is ongoing. Additionally, workshops were held to assess the perspectives of 8th graders as school leavers. These took place in two different 8th grade classes in December 2019.

In addition to the data collected as described above, teachers of the “new” 5th graders, but also of 6th and 7th graders, were asked to share their perceptions of barriers for learning and factors which might improve learning. They were also asked to focus on social interactions in, around and outside class. This data collection took place during teachers’ team meetings in November 2019 and had the additional aim of allowing teachers to reflect on their perceptions. Furthermore, one team member undertook school observations in 5th grade to complement the data and – as is intended when implementing Action Research – to give feedback to teachers. The school observations took place in differing settings: one in a special needs class with two students only, and another two in “regular” classes with 9 and

11 students. These observations were used to identify given settings that were reassessed from the UDL perspective.

Interviews with all three practitioner–researchers were conducted to provide in-depth insights into teaching styles and perceptions of barriers for learning as well as of factors that improve learning but also on social interactions in, around, and outside classrooms. Particular focus was put on reflections on challenges and/or opportunities through the implementation of UDL. Each teacher is responsible for one grade only: one is a 5th grade teacher, another one is responsible for the 6th grade, and the third person teaches 7th graders. Even though this data (interviews supplemented by written statements) offered extensive insights, it proved to be increasingly necessary to ask even more in-depth questions. Therefore, all three teachers were requested to attend a second round of interviews which took place in March 2020, followed by two follow-up interviews in summer 2020.

It is important to point out that the specific impact (such as adverse effects) of the COVID-19 pandemic and the corresponding preventive measures on the implementation of developed practices is still being monitored. Nevertheless, it must be noted that a general impact of the pandemic on inclusive practices at SZD as such can be observed. For example, the restricted options for a physical mixing of different groups of students have taken a toll.

Constructivist Grounded Theory

In the context of (Critical) Participatory Action Research, a flexible approach to organizing and analyzing data is key. We decided to utilize Grounded Theory methods for this purpose, as those methods match our chosen approach (as will be shown in this subsection). However, it should be noted that we only apply Grounded Theory methods in the context of the corresponding design and analysis of our (Critical) Participatory Action Research project.

Considering these analytical steps, it is clear that (Constructivist) Grounded Theory and (Critical Participatory) Action Research are a perfect match, particularly when considering the simultaneity of data collection and analysis. Our second Research Cycle was planned and implemented on this basis only (see Figs. 11.2 and 11.3 for details). Charmaz' approach to Grounded Theory specifically meets the chosen approach of our project when she calls for observational data to be additionally fed into the analysis of interview material because “what people say often differs from what they do” (Charmaz, 2004, 982). This clearly is of utmost importance when practitioner-researchers are searching for insights into their teaching practice: it may be easy to describe and explain inclusive teaching practices in a face-to-face interview, but this does not necessarily mean that such practices will be observable in daily work routines. Accordingly, both in-class observations as well as workshops with students were planned as emerging needs after the initial data collection and analysis in the first Action Research Cycle.

- Strategies
 - Reflection of teaching goals_T
 - Individual strategies (and structures) for better learning_T
 - Strategies (and structures) for good learning environment_L
- Strengths
 - Methods and Tools to strengthen competences_T
 - Diversity as strength_T
 - Consideration of pupil's strengths_T
- Barriers
 - Individual barriers for learning_T_Pa
 - Barriers for learning in general_T
 - Barriers for learning at home_T
 - Barriers for learning_what can teachers do_T
 - Barriers for learning in class_T
- Additional actors and living environments_T
 - Role of T for students_T
 - Contact with parents_T
- Resources: time, space, teacher education_T

Fig. 11.2 Clipping from initial coding process of teachers' data

Fig. 11.3 Illustration of findings applying Grounded Theory Methodology

According to Charmaz (2003, 2004, 2014), coding data via Constructivist Grounded Theory means to start with initial line-by-line coding to examine each line of data and to define actions or events therein. In doing so, we start to build ideas inductively and “are deterred by line-by-line coding from imposing extant theories or our own beliefs on the data” (Charmaz, 2003, 258). It also helps to

sharpen the use of concept sensitization. In this step, the background ideas that inform the overall research problems will be carved out. In a next (and – specific to Grounded Theory – also parallel) step, constant comparisons need to take place: all data has to be regularly compared in terms of:

1. Different people (their views, situations, actions, accounts, and experiences) occurring within the data (which we did by collecting data from all the groups represented at SZD)
2. Data from the same individuals but at different points of time (which we collected from the same group of both teachers and students from certain grades)
3. Comparison of incidents (which we did by focusing on specific yet comparable incidents such as the learning workshop or the Buddy Books)
4. Comparison of data within a single category (as illustrated in the findings section, Fig. 11.2)
5. Comparison of data from different categories (as illustrated in the findings section, Fig. 11.3)

For our project, different kinds of coding were applied. Since it was not a single person who worked on our data but rather a team, we decided to code the data via MaxQDA, a software specifically developed for qualitative data analysis. MaxQDA facilitated our collaboration as a research team by allowing the digital sharing of both (coded) data sets as well as memos (see Fig. 11.2 as an example).

Research Ethics

In accordance with our methodological approach, a wide range of ethical considerations had to be considered. Even though every research project should carefully reflect on ethical considerations, this is of particular importance when participatory approaches are being applied due to the close collaboration with practitioner–researchers. Kemmis et al. (2014) show the importance of this issue by dedicating an extensive chapter to research ethics in their book *The Action Research Planner: Doing Critical Participatory Action Research*. Research ethics in the context of Participatory Research are also intensively discussed in Kremsner (2017) and Kremsner and Proyer (2019), among others.

First and foremost, it has to be stated that every research study should consider the following general principles as described in Kemmis et al. (2014, 159):

1. *Respecting Persons* means that research should always respect participants’ “integrity and humanity as persons – as people whose rights and whose physical and psychological and cultural integrity must be protected, and not damaged, in the research process.”
2. *Avoiding Harm* is defined as “not only avoiding physical harm or hurt, but also psychological harm (for example, stress or anxiety) or other harm like depriving participants of esteem, or taking them away from educational activities they

would have been occupied in had the research not intervened, or in any way damaging their reputations.”

3. *Justice* in research “requires avoiding injustice in the process of the research, for example, by processes that oppress or dominate participants.”
4. *Beneficence* “requires that research be undertaken in the interests of the people involved and affected, in the interests of the whole human community, and in the interests of the sustainability of the Earth.”

Taken these general principles into account is of particular importance when children are involved in research contexts, as is clearly and unequivocally pointed out by, amongst others, Greig et al. (2013).

Informed consent is (or at least should be) key to all research projects (McClimens, 2007). Participants have the right to know all the information available about a research project and its process before they can agree or not to participate. Concerning our project, informed consent was obtained in differing ways from all the participants:

1. Practitioner-researchers constantly gave their consent for using and utilizing their data both orally (taped in the context of interviews) and in written form.
2. Students – or rather their parents – signed an informed consent form at the beginning of each school year. Even though constant and repeated informed consent is specifically preferable when working with children (Greig et al., 2013), we were requested by the school to avoid the repeated filling in and signing of forms by parents. Instead, all parents were provided with written information about the project at the beginning of each school year (when they were asked to sign informed consent forms) and were presented with further information at the teacher–parent conferences (if they attended) where all three practitioner-researchers were present. Even though they were not asked to fill in forms, the students themselves nonetheless received constant information about the project, its aim and progress through the three practitioner-researchers, who regularly discussed UDL-related issues with their classes.
3. The parents themselves were asked to participate in the project only in the course of the teacher–parent conferences, where they were asked to answer questions in written and anonymized form only. In other words, we did not specifically ask the parents to again fill in informed consent forms, but to anonymously fill in questionnaires. Those who did so effectively gave their consent by placing the filled-in questionnaire in the boxes prepared in advance.

Anonymity is widely guaranteed for all research participants except for the three practitioner-researchers. As key members of the research team, they play a crucial part in the research process and its outcomes and therefore need to be cited by name. Direct citations later in this chapter are still anonymized in order to guarantee some basic levels of privacy for the three highly involved teachers. For all other participants, full names have no importance for the project and were therefore only documented in the context of informed consent. For the academic part of the research,

neither the students nor the parents' names are even known: their data was mainly collected by the practitioner-researchers and student assistants.

The chosen research approach asks all involved parties to engage and invest considerable time and energy. Openness and transparency among the research team proved to be of utmost importance. Examples of the practitioner-teachers' valuable contribution to making this research possible include the ongoing reflection of practices and involving colleagues as well as providing access to their own teaching practice.

11.3 Research Process, Results, and Discussion

The following section will describe, in detail, the results of the process undertaken in the application of the (Participatory) Action Research approach and the role the collaborating teachers played in enabling access to the field and shaping the data collection. In essence, it presents the outcomes of the process and related questions. The theoretical and practical implementations that derive from these findings will also be discussed. In view of the fact that it has not been possible to conclude the final Research Action cycle (and thus the implementation steps and the discussion of the findings, especially with students), the following will focus solely on data concerning the teachers and parents.

Applying Participatory Action Research to Reassess Teaching Practices

As suggested by Armstrong and Moore (2019), setting up a small group of practitioners and researchers which will work on all stages of the project may be the most important early step. In our case, the team was already in place due to a pre-existing collaboration in the Erasmus+ – project “TEP.” Hence, three academic researchers (Gottfried Biewer, Michelle Proyer, and Gertraud Kremsner) worked closely together with three female practitioner-researchers from SZD (Gudrun Messenböck, Katrin Krischke, and Beatrix Wagner). These six people were fundamentally supported by three research assistants (Sophia Baesch, Johanna Grath, and Susanne Prummer). The application of a Participatory Action Research approach in our project meant that we tried to share as much power over the research process as possible with all team members irrespective of previous research experience.

For our project, all three practitioner-researchers were clear from the very beginning about their expectations from the TEP project and indeed from us as academic researchers. Aware of the many challenges that they have to face on a daily basis (and always at the risk of self-exploitation) to reach their goal, they wanted SZD (and with it their own teaching) to become (more) inclusive, or at least as inclusive

as possible. The collaboration provided a space for reflection upon their ongoing teaching practices and enabled shared nonjudgmental spaces to discuss ideas and problems. Their hope was that the UDL-centered reinterpretation process might not only serve as a strategy to attain their individual goals, but also to motivate their teacher colleagues to join them and, thus, guarantee a sustainable implementation of – or reference to – UDL. Both Action Research cycles were developed according to this goal in close collaboration with all three teachers. Additionally, researchers supported them by translating English academic material (such as the UDL guidelines) into more comprehensible and easy-to-digest German texts suitable for everyday school life. At this point, it has to be mentioned that the research team as well as the three involved teachers were well aware of the challenges of sustaining or, even more so, implementing UDL at school. This is especially true as change in a dynamic field such as school tends to appear slow and is hard to implement.

An initial assessment of what facilitated and hindered the students' learning processes was the starting point for the data collection process and was inspired by a CAST workshop (<http://www.cast.org/>) that formed part of the first project meeting. As well as allowing the three teachers to present the main ideas of UDL to their colleagues, the assessment of barriers and facilitators also initiated a discussion process among teachers, parents, and the school heads. Interestingly the main research interest – enhancing the learning environments for students – coincided with topics related to the ongoing inclusive school development process. The three collaborating teachers made it clear right from the beginning that the initial questions might necessarily have to be adapted for several reasons. First, it was hard to grasp the idea of UDL as there was no usable material in German. Although two of the teachers had majored in English it was hard for them to find time to read complex academic texts and take on board the underlying UDL model. Second, the three teachers suspected that some of their colleagues at school would not be eager to reflect on their own teaching, especially not using a complex model. And third, it was quickly concluded that many of the boxes describing UDL in practice could already be ticked for many of the practices in place. The teachers made it clear that it was important for them to work with concrete cases and further develop any good teaching practices already in place. So, even before entering the cycle of research activities, a detour to breakdown the complexity of UDL in its interpretation by CAST was necessary.

The findings of the assessment of teachers' opinions will be presented below. As the identification of what hinders and what facilitates learning was considered to be crucial, the three teachers decided that it would be better to collect the data from their colleagues themselves. Different data collection techniques were implemented among the different teams. These included collecting hindering and enabling factors in the course of teacher team meetings and leaving posters with the two questions in the teachers' room which they could fill in. The following factors were recorded (Table 11.2).

Interestingly, the teachers listed a number of factors that are related to the learning environment at the school and in the students' homes. These include references to suitable learning environments, which includes aspects such as furniture but also

Table 11.2 Selected facilitators to learning according to the teachers

Learning facilitators
1. Motivation
2. Quiet environment
3. Routines, security, rituals
4. Environment (furniture, climate, technical equipment)
5. Engagement
6. Motivated teacher
7. Praise
8. Steady environment
9. Learning strategies (learning/coaching), learning in small groups
10. Good atmosphere at home
11. Possibility to try out things
12. Freedom to think
13. Being allowed to experiment
14. Eating and sleeping
15. Reading

to the importance of silent environments. They also referred to personalized factors of the children, such as a lack of cognitive ability or a limited ability to concentrate. Many of the challenges reported are related to these personal or societal factors, while the facilitation of teaching is often referred to using technical terms such as learning strategies. Problems about staying focused and restless environments are referred to as especially challenging and were mentioned more than once. This became an even more pressing issue when the findings of the parents are considered (see below).

Following up on this initial data collection, a number of interviews were conducted over the course of the research process in order to clarify open questions and learn about current teaching contexts and the UDL perspective on them. The factors restricting and facilitating the learning environments were discussed among the teams and with the researchers in the course of four interviews with teachers and groups of teachers. These were analyzed by applying methods from Constructivist Grounded Theory. Not only did this entail the preparation of all the materials that had been collected (in terms of transcription or at least active listening to audiotapes multiple times) but also thorough discussions and exchanges of the preliminary findings among both the research team members and the extended team including the teachers themselves. It should be noted that the three main practitioner-researchers were highly critical of the researchers' findings and constantly demanded breakdowns of how the findings could be transferred into practice or made more comprehensible. This inevitably posed additional challenges to the research and analysis process. The data from the interviews were manually screened for thorough discussion with the practitioner-researchers but then also coded using MaxQDA in order to facilitate collaborative coding activities. The following illustrations – with T standing for “teachers,” “S” for “students,” and “Pa” for “parents” – offer insights into our research process by showing a clipping of preliminarily condensed initial codes:

Figure 11.2 depicts parts of an initial order of open codes along categories. Clearly, these are still impacted on by the discussion around barriers and enablers to learning and teaching. *Teachers and student's role* as well as the impact of the *living environment* (e.g., parents) were identified as relevant. *Strengths* point toward a positive take on the teaching environment, showing readiness to engage and accepting diversity as a strength. Adequate *strategies* to enable learning for all and tackling *barriers* and lack of resources were identified as being among the relevant aspects.

After an initial sorting and alignment of the relevant categories along overarching concepts, the analysis was taken to the next level through the application of constant comparison. This implies looking into the different data sources and drawing from the ongoing exchanges with the teachers with a view to extracting core concepts. In the course of two additional interviews during the analysis process, interim findings were further discussed and developed. The following figure introduces the emerging core categories and their interrelations. On this basis, an initial theoretical foundation can be established that frames further contextualization by assessing the existing teaching and learning practices under a UDL perspective. The main concepts and categories in the analysis point to a relationship between resources, strategies, strengths, and barriers that impact on an enabling and individually oriented learning context.

The references to working with a focus on enabling and furthering *strengths* of students were strong in the data material. The aim of the teachers was to identify different approaches and abilities as strengths and to work with these accordingly. In relation to the need for a continuous focus on *strengths*, one teacher pointed out that constant reflection on what functioned well with her students (also using the Buddy Books) and her colleagues was essential. Giving students the space to reflect on what functioned well was considered to be of special relevance:

Gerti: It is good that we reflect on a regular basis; this enables routines. Actually, once a week we take the time to talk about the question "What are you proud of?" In my experience many of the students say, "I am proud of nothing." This makes me gasp. It says a lot about self-worth.

Gerti stressed the importance of making the children in her classroom aware of what they are able to do and that there are many reasons for them to be proud. Specific lessons, termed "study coaching," are used to work against students' perceptions that they are incapable of succeeding and thus change how they "wander aimlessly around the world," as she described it. The teachers believe that a certain flexibility in SZD and in the specific collaborative conditions of the approaches of the teacher teams to the curriculum is essential to be able to react to students' needs without losing focus on academic outcomes. Specific lessons constituting an integral part of the lesson plan (in this case a so-called social lesson) can be used to discuss the needs of students, while others can be adapted to urgent needs. This is referred to as "emotional work" (a very specific term in German: *Beziehungsarbeit*) by the teachers, and is considered a specific strength of a reasonably open system

that allows for a certain degree of flexibility, but is also an indication of the heavy responsibilities the teachers have:

Gerti: We have a social lesson and the topic is: We are all different and that is fantastic. ... It is about acknowledging diversity and wowing the students by making them think about how things are done differently depending on specific backgrounds and how fascinating that can be. ... This may all sound a bit preachy, but in reality, it is our job to make children really tolerant and open to differences. ... It has to do with developing cultures of conflict.

Gerti reports how she uses time in her lesson to open a reflective space for the students where they can learn to appreciate who they are and how they differ from one another. She acknowledges this as one of the central features of her job: wowing children and investing in personality development. While this shows the relevance of focusing on the positive aspects of what teachers can do and how they can generate reflective spaces, the category *resources* refers to factors of potentially negative or impeding effects. Hanna refers to the rather broad concepts of time and space that are needed in addition to “the right kind of training of teachers.” Providing individualized learning environments implies a high workload for the teachers as open and flexible learning environments ask a lot of the children. Gerti reports that some of the students take a lot of “time to get started. They don’t get into the process of doing.” This implies a lot of coordinated effort and time on the part of the teachers, which often results in the need to put in extra unpaid hours. Gerti also reports that some of the students need support to realize what their learning challenges are before teaching or teaching environments can be adapted. Finding the right mode of adaptation or approach to learning is described as being “resource-intensive, you have to be close and adapt the method so that children are enabled... and this keeps my mind very occupied” (Gerti). The development and application of specific *strategies* to coordinate efforts and enable learning can help in that regard. Some children need a “specific type of guidance” as “they are overwhelmed with decision making in an open learning environment,” whereas other students are very clear about their decision-making process. This can be described as a balancing act that requires good coordination among the teaching teams but also reflections involving the students themselves. Discussions will center on the question “How can each student learn best?” (Gerti). Tackling *barriers to learning* as identified above is of central interest in this regard. The category refers to the specific roles that parents and students play in deciding upon the design of learning environments. This requires a certain eye-level approach which can be difficult to maintain. References to the home environment, parents, or other context factors also play an important role (see parents’ section below). Gerti explains that a student’s:

“social issues have to be known and understood to adapt the class so that they can learn well, otherwise it won’t work... The students know that we expect something from them, and yes, there is some sense of seriousness which is being transferred to the students, at least in the best-case scenario.”

With respect to providing *adequate learning environments*, Hanna points out the following: “I have the feeling that the students need a positive atmosphere, an

appreciative climate. This is first and foremost. And then there is the silence and the different channels in order to digest teaching contents.”

This suggests that providing an adequate learning environment goes hand in hand with adequate teaching and learning. Quiet learning conditions are among the factors considered most relevant in the list of learning facilitators as they are closely associated to the capacity and need to concentrate. Nevertheless, the factors for an appropriate learning environment can differ depending on the individual, ranging from the need for the availability of specific tools to the requirement of a tranquil and steady environment. Gerti illustrates the diversity of needs when arguing that “many students effectively need space, an empty space with a wall in front of them, for them to stick to a task. They are flooded by other influences, which makes it really hard for them to remain focused.” Finding ways to create enabling individual learning environments was identified as a core topic in the interviews.

Interestingly, the understanding of the concept of UDL was already referred to at early stage of the data collection phase with regard to finding solutions or being inspired to further investigation. Sabine described UDL as a source of orientation: “It provides answers and strategies, methods and tools to strengthen students’ competences.” Thus, the introduction of the concept of UDL through project collaboration seems to have had an impact. It enabled the teachers to reassess their teaching practices and further develop them through a growing awareness of what works and which aspects in relation to a specific area of teaching (as in, for example, the learning environment) need to be questioned and adapted.

One major factor that will be addressed below is related to the role of parents and additional areas of life worlds beyond the school context. With some students, the gap between the school and the home environment is large. There might be no opportunities to learn in a quiet environment at home or any support structures to help maintain or advance their knowledge. The effects of the extensive use of social media platforms and a lack of sleep are associated with low levels of self-esteem and a lack of ability to concentrate. Keeping in touch with parents sometimes can also pose a major challenge to the teachers. Asked to collect data from parents, our practitioner-researchers came back with a long list of hindrances to learning collected in different contexts of parent–teacher meetings. Again, the teachers felt that they were the ones who should collect the data as their relationship with the parents was closer and the process of getting in touch with them was easier. They also considered that direct data collection through them was a more effective way to gain insights.

Parents Some of the findings above already highlight the role of the out-of-school environment, especially in relation to the parents. More often than this aspect is missing from discussions surrounding the effectiveness of teaching and learning practices. Considering that parents are a main resource for the learning process, involving their insights seems very relevant but not easy in the context of decision-making when working with UDL. The main hindrances to learning were gathered using lists; a concept in bold again illustrates that more than one parent referred to it as being relevant (Table 11.3).

Table 11.3 Selected barriers to learning identified by parents (random order, aspects mentioned more than once in bold)

Hindrances to learning
1. Lacking Concentration
2. Language barriers
3. Dyslexia
4. Noise
5. Lacking interest
6. Lacking impulse-control
7. Lacking structure in school
8. Learning disability
9. Not interested in school, wants to work
10. Spelling
11. Structure vs. Chaos
12. Self-organization
13. Inability to learn
14. Little stamina
15. ADHD

Again, many of the concepts listed refer to inabilities or pathologies of the children: inabilities (cannot learn) and perceptions of lacking coping mechanisms (little stamina). Nevertheless, there are some aspects that refer directly to the learning environment: class climate and noise are among the factors affecting learning. Other aspects focus on the societal backgrounds of the children (impact of father, reaching one’s limit, being overwhelmed, and being afraid or simply unwell). Knowledge of these contexts is relevant to the teachers’ decision-making in terms of learning contexts.

What is quite striking is the language used by some of the parents to describe the abilities of their children that are lacking, which was also discussed in the data collection follow-up interviews. One of the aims of the Buddy Books is to engage parents in continuous interaction with their children and keep them informed and involved in the learning outcomes. The lack of involvement of parents is one of the main barriers identified by the teachers and therefore an issue that needs to be addressed. This aspect, which is often only regarded as a side issue (if it is mentioned at all in the context of designing successful learning environments), shows the need for further development of UDL applications in the given context.

Students’ perspectives on barriers were assessed from a more positive angle by asking them to share what helps them to learn well. The two pictures below illustrate the process of data collection in two 4th grade classrooms. As these students were about to transition away from the school, their perspective proved especially interesting as they had high levels of experience with this particular school setting (Pictures 11.1 and 11.2).

Students were invited to express their ideas on aspects that enable a good learning process by writing them on the board or sharing them verbally in two workshops.

The main factors that were uncovered range from the need for a quiet environment to, contrastingly, learning best while listening to music, and from issues of motivation (being interested in the topic) to different modes of learning (with support and group work being mentioned as important). Applying the right modes and

implementation of UDL and children's voices is still ongoing, but points to the relevance of democratic learning. This resonates with elaborations on holistic approaches that will be described in greater detail below (see Fig. 11.6).

Results

UDL enabled the questioning as well as the enhanced development of already established teaching practices in the given research context. Indeed, the mere introduction of the concept of UDL sparked a lively debate among the team of teachers (see Fig. 11.3). Examples will be used below to elaborate on the findings of the introduction and reflection process, applying UDL as related to the research questions. Considering that this research focuses on a reassessment or reinterpretation of already existing good practices, some of these practices (which were observed and discussed with the practitioner-researchers) will be expanded on below.

In order to elaborate on *how existing practices in inclusive education can be reinterpreted under a UDL perspective*, the following two examples will now be analyzed in greater depth. These teaching practices were identified by teachers when asked to nominate the most relevant and characteristic practices at SZD and were also identified as such during the observation phases. The following sketches of classroom settings were derived from observations that took place in early November 2019 (Figs. 11.4 and 11.5):

Fig. 11.4 Classroom observation, math (L marking teacher's location)

Fig. 11.5 Classroom observation, box lesson (L marking teachers' location)

Box 11.1 Box Lessons

Depending on the grade, students attend an average of two sets of box lessons each week where they go to a room called the Lernwerkstatt (“learning workshop”). The size of the room is around 50 m² and offers all manner of possibilities. From this obligatory skeleton, each school can fill the room as they desire, from endless types and colors of paper to tableware, stuffed squirrels, and loads of soap suds. In this room, students can choose from more than 230 boxes that all feature a different topic: from animal-related ones (the camel, types of cats) to more broader topics covering questions such as “Where do my jeans come from?” The topics cover a wide range of subject matters and each box has a specific layout with an overview of the materials it includes, an instructional manual, different exercises, and a piece of paper with solutions to the exercises that the children can use to track their progress and outcomes. It is up to them to choose a topic and spend the following 2 h (or even more if combined with the following week) on it. The process of arriving in the room, choosing a box, working in an autodidactic manner, and reflecting on what follows is ritualized. The lesson is opened and closed with music, and a gong is sounded to start and conclude the work phase.

Interestingly, both settings point to already alternative approaches to typical classroom settings, with the layout of the concept of box lessons underlining the fact that individual student engagement is supported by two teachers, an open setting and significant space. The concept of box lessons will be elaborated on further in Box 11.1.

Concept of Box Lessons

The concept was introduced to the school more than 10 years ago by an enlightened school head. The topics in the boxes even include chemical experiments, and can be related to animals, geography, social sciences, etc. The boxes enable the students to self-explore at their own speed. They choose a topic and do different exercises of varying complexity that can be found in the boxes. They learn autonomously and in the end present to the rest of the group what they have learned. The focus is on listening to each other and on what the students have learned by themselves. Each student and their learning become the center of attention. The students sometimes also need to leave the room in order to setup ropes that help them understand how far planets are away from the sun. Box lessons provide a safe, ordered environment which students can leave of their own free will. Collaboration with universities and the involvement of teacher trainees has led to long-standing collaborations and more than 100 boxes kindly generated by teacher trainees.

Box lessons tick several boxes of the UDL approach to providing rich learning environments: there are many different materials and different modes of how a topic can be approached and explored (see research question 2). The individual and active role that students assume in the specific setting can also be interpreted in UDL terms

as the teachers' role is transformed from guiding a learning process to enabling a learning process (see research question 3).

The idea of providing different options which children can choose from goes beyond the concept of UDL's prepared – tough flexible – environments. Next to family and other societal factors, the personal choice of children and the context of reflection on learning outcomes extends even further than the UDL concept. Reflection on learning is also of central importance in the second example described below.

The second well-established teaching practice (at least with some of the classes) at SZD that was reassessed using the findings described above and in the course of engagement with UDL concerns the previously mentioned Buddy Books which will now be explained in greater detail.

Buddy Books

This tool to help organize learning has been referred to throughout this chapter. The tool was introduced by some of the teacher teams and facilitates individual learning progress documentation and can be used to guide reflection. As with box lessons, the professional and personal involvement of teachers plays a major role in the introduction of a tool aimed at furthering individualized teaching and learning approaches (Box 11.2).

Box 11.2 Elaboration of the Planning and Learning Evaluation Tool Buddy Books

Buddy Books are intended to act as individual learning guides and to be shaped and created by the students themselves. They are used to document learning progresses but also to enhance competencies in social skills and in taking on responsibility for one's own learning. In the beginning, students are asked to create an individual profile and to reflect on themselves as learners. Additionally, individual learning goals for the upcoming term have to be defined. Subsequently, individual progress is documented by the children themselves without being assessed. Weekly sheets help to set small and feasible targets and milestones; progress is reflected on at the end of each week and in summary at the end of each term. The aim of this approach is for students to learn to take on responsibility for their own progress by setting their own goals and documenting their own efforts. But students are not the only ones who fill the pages of their Buddy Books: parents and teachers also contribute to each student's individual progress by recording their support for reaching learning goals. Like the students themselves, they are asked to focus on positive aspects only and to refrain from deficiency orientation. Social skills are represented by mapping the most and least liked activities with classmates, by reflecting on their learning environments, and by asking for support to reach their individual goals.

Importantly, this tool enables a reflective view on one's own learning process. By contrasting the students' own perspective and those of their peers, parents, and teachers, it enables stakeholders to keep track of developments, but it is mainly regulated by the students themselves. This process of taking a step back and reflecting on one's own learning progress is described as being a very important part of SZD's learning and teaching approach. Besides being a practical tool, the Buddy Book helps to structure learning processes.

The two examples described above were introduced into the school through the personal motivation of teachers and through an exchange of information with other schools and external teacher colleagues. The first boxes were created by the teachers in their spare time, while the Buddy Books were adapted from a learning trip to another school in Germany. The Buddy Books were introduced through a teacher exchange activity, while the concept of box lessons was also witnessed in another school context and introduced by one of the former heads of the school. In one of the interviews, one of the teachers refers to them as practices that "WE made," emphasizing the school community's joint efforts and localized urgency for suitable developments and the constant introduction of new ideas. Their ideas and further interpretations stem from the knowledge they have of their students and the specific school context, which seem essential in guaranteeing the sustainable implementation of innovative practices.

With respect to the research question "*How can UDL enrich these existing practices,*" the teachers pointed to the fact that it offers tools to broaden individualized offers and reflect on their use. Gerti highlighted this when saying that "UDL offers support to choose methods." It is perceived as an attitude and thus aligned in the center of Fig. 11.3. The practitioner-researchers pointed to the fact that there is "a lot of materials and methods. We don't have to reinvent the wheel" (Gerti).

Thus, the broadening and extension of individual teaching practices through UDL is acknowledged by the teachers, while the choice of tools and the constant reassessment of the specific needs of the students in a given context needs to be considered carefully. The specific teaching practices are embedded in a historically grown context of developments from special education to inclusive education (see section "[History and Present of the Austrian Education System with a Focus on Schooling for Children with Special Educational Needs and a \(Forced\) Migratory Background](#)"). These developments (coupled with the high levels of involvement of teachers and SZDs' autonomous interpretation of approaches to learning) reveal the importance of considering localized teaching practices and the relevance of participatory approaches in their further development.

The use of contrasting perspectives helped to highlight the fact that the teaching practices used as examples above (box lessons and Buddy Books) promote a high level of student autonomy. The children base their choice of learning content on personal interests and preferences. Additionally, to a certain degree their reflections on their learning progress are guided (or even regulated) through the frequent use of documentation.

Further aspects of importance that can be derived from the findings obtained when discussing and contrasting the approaches include the following:

1. Blind spots: Additional actors and living environments, importance of considering parents and students' voices

As has been already hinted at, one of the main restrictions identified in relation to UDL is the absence of a reference to the individual background of each student. The choice of a specific didactic tool is therefore not only shaped by the specific type of learner but also by their homelife conditions. As discussed above, these often differ considerably from the educational environment found at school. Navigating the differences between these lived realities requires contextual knowledge on the part of the teachers, as well as “emotional work.” Dealing with students that are afraid of going to school or being made fun of by other students indicates a need that extends far beyond choosing from a set of pre-determined modifications to the environment depending on a specific learning type. The idea of enabling students to choose, self-organize, and reflect on their learning seems to be outside the sphere of UDL.

2. Enabling individual learning contexts and goal orientation

Taking the findings of the Participatory Research approach into consideration, the main points of reference (identification of barriers, leaning toward strengths, talking about missing resources, and reassessing strategies) are configured in the major goal of shaping the appropriate facilitation of individualized learning environments that consider the child and its environment as a whole. Using this as a point of orientation among the teams of teachers and in shaping learning environments that suit all individual needs in the restricted environments of the school can be considered helpful. The question as to how each child's needs can be met without negatively impacting on the needs of others is an ongoing topic of debate at SZD. Didactic concepts, tools and methodologies are referred to and adapted in accordance with this goal. Hanna summarizes this when saying: “Diversified teaching methods that are orientated along learners' needs allow the learning goal to be reached by all children.”

3. UDL as – more than – an attitude

Interestingly, the reflections on the concept of UDL quickly showed that the teachers we collaborated with chose specific aspects from the concept as they understood it and applied them to broaden their idea of what facilitation of learning environments meant.

In later stages of the analysis process, the teachers were invited to share their personal interpretations of UDL. More often than not the collaborating teachers stressed that attitudes need to be considered and constantly worked on. Among the main feedbacks provided by the teachers (in relation to the process of approaching UDL and considering its potential for furthering well-established practices) were the need to collaboratively share in the realization of inclusion and in the engagement of a specific approach for that purpose. The following are highlights of the answers given by the three collaborating teachers when they were asked what UDL meant to them:

Gerti: UDL is an approach to create accessible environments that should enable suitable learning conditions for all learners. UDL provides a possible answer and provides strate-

gies, methods, and tools to strengthen the competences of students. This approach facilitates reflection on teaching goals and their adaption to enable successful learning.

Sabine referred to UDL's potential to "support each student at their specific stage." The importance of individual decision-making and the responsibility of students for their own learning was emphasized and described as having an impact on the assortment and choice of preferred learning tools. The focus on strengths and the need for constant reflection with students and colleagues was also stressed. Students are assigned a vital role in the decision-making process of what kind of learning environments are provided. So, they are not only provided with support to become more self-aware and conscious decision-makers in terms of how they wish to learn and organize themselves, but they themselves are also involved in what is provided in the first place. Gerti summarized this as follows: "At the core lies the self-regulated responsibility of students for their learning and the provision of learning tools." This extends beyond the UDL idea of providing for specific learning types, as the students appear as actors who actively take part in shaping the discourse of the provision of proper learning environments. The need for differentiation when planning a lesson was highlighted when Gerti remarked: "The orientation toward strengthening children helps to differentiate aim, content and method." Hanna pointed out the need to "understand the levels of diversity of each child" by getting to know each child well and by continuing to reflect with them in order to provide an adequate learning environment. Her approach to a specific topic was shaped by the following: "By considering the individual peculiarities of each child, they experience my mindfulness which again sparks their self-organized learning." This process is fueled through: "ongoing reflection with the children which is how I learn to consider their strengths and what poses barriers to their learning." This posits a possible answer to the research question related to how practices can be developed to become more child-centered.

The above also shows that the reflection processes that arose as a result of this research project served not only to generate ideas as to how best to provide appropriate learning environments. These reflection processes also contributed to strengthening or at the very least reviving the communication between teachers and students. This aspect is expanded upon in the following section, which embeds the findings of the study in the broader context of understanding how the introduction of UDL principles has sparked an ongoing discourse in the context of school development with respect to which principles can be taken advantage of to enable the localized implementation of more sustainable school development practices in order to further inclusive education practices.

Discussion of Findings and Conclusions

With reference to the research questions posed at the beginning, it can be reported that the process around a possible implementation of UDL to further school-based practices sparked a broader discourse which highlighted the relevance of ongoing

reflection processes involving students, parents, and teachers, considerations of the living environments of children and the need to acknowledge their role in actively shaping the provision of teaching and learning environments beyond pre-determined learning types, and the stimulation of specific areas of the brain through predetermined sets of tools.

Taking into consideration that no educational approach is without a scientific or attitudinal context, it should be noted that the different approaches to providing a conducive learning environment, with their specific strengths and weaknesses, can be interpreted along a spectrum that enables a reference point for ongoing reflection on furthering a more child-centered localized approach to teaching and learning.

With respect to the contrast between UDL and existing teaching practices at SZD, which can be referred to as individualized or differentiated instruction (DI), further desk research into already existing perspectives on these two approaches has been conducted (Ralabate, 2014; Griful-Freixenet et al., 2020). Ralabate (2014, 8) stresses that UDL caters for specific predictable contexts, whereas DI can be considered as catering more toward the individual in promoting responses to specific needs:

“A key contrast between DI and UDL is that DI emphasizes responding to individual needs, whereas UDL emphasizes proactive design of environment and instruction based on predictable, systematic learner variability.”

The fusion of the two approaches proved helpful in selecting, reassessing, and thus developing specific approaches to teaching and learning at SZD. Drawing from the strengths of these and additional approaches to didactics, learning, and teaching enables a holistic toolbox for the development of specific individual (or at least local) approaches to child-centered learning environments. If SZD's approaches to providing learning are included along a spectrum which includes UDL and DI (Fig. 11.6), the relevance of contexts beyond the individual as well as the need to refer to the reflective power and involvement in decision-making of the students themselves can be incorporated.

The interrelatedness or distinction of UDL in contrast to other established approaches to didactics need to be studied further in order to broaden its understanding and its benefits in specific localized contexts.

Additional factors that need to be addressed in reference to findings from the Participatory Action research include the following:

1. Making UDL more relatable

The teachers articulated a need to be provided with a comprehensible and digestible interpretation and translation of the complex concept of UDL in order to be able to apply it in their daily teaching context without having to spend an excessive amount of time analyzing it themselves. This suggests that findings in the context of individualized instruction and the provision of adequate learning environments in the context of inclusion need to be further elaborated on and transferred into practice. Understanding UDL in CAST's interpretation demands a lot of advance knowledge. Some terms and contexts are hard to grasp for people who are not accustomed to an academic context.

	UDL	DI	SZD
Prerequisite	Design of learning environment	Response to individual	Holistic perspective (beyond specific environment)
Goal of instruction	Instruction < > predictable, systematic learner variability	Individual (learning) needs	Child/child's environment
Stance	Proactive	Responsive	Spontaneous and based on localized context and circumstances of the child

Fig. 11.6 Spectrum of approaches to learners and learning environments

2. Team effort

“It is important to recognize that both within the core group and the wider group of colleagues involved there were potential tensions and dilemmas, similar to those referred to by Elliot (1991) as ‘a clash of professional values’ between traditional pedagogy and reflective practice.” (Simpson, 2019, 66) This quote highlights the fact that in the course of this research it became clear that not all members of the school community were in favor of the research efforts and were not really interested in learning about a new approach to shaping learning environments. As previously mentioned, the mere act of engaging in a reflective discourse as such seems to have had some impact on questions related to the new direction the school is taking, and this in itself can be considered highly promising. Nevertheless, it also shows that the introduction of new approaches to teaching are best embedded in collaborative research or at least developmental processes in order to enable sustainable change.

3. Personal engagement

It should also be strongly underlined that the willingness to engage on the part of the three collaborating teachers has been truly remarkable. Considering that their own teaching practices were being assessed, such an eagerness to take on board critical reflections on these practices, albeit for their further development, does not seem very common. Ongoing support and questioning, as well as the desire to gain insights and shape the research process, are key to a properly functioning research process aimed at changing teaching practices and the way they are being researched (Armstrong & Tsovoka, 2019). Similar respect is also due to the teacher trainees who were involved in the project. Despite a rather critical position regarding UDL among teacher trainees in the area of inclusive education due to its links to

neuropedagogy and overlaps with individualized instruction (Inklusive Didaktik), they proved eager to engage in supporting the realization of inclusive education. The collaborating school also reported that it welcomed the support from the teacher trainees and the opportunity to receive guidance on how best to reflect on their teaching practices and observe examples from other countries. Likewise, the researchers appreciated the opportunity that was afforded them to work at eye level with a partner school and develop user-oriented solutions. Similar project-related opportunities for teacher trainees with respect to in-service training should be emphasized in teacher training programs.

The same holds true for the implementation of sustainable new approaches to teaching and learning at school. It seems to be essential that teachers who are involved in and knowledgeable about the respective contexts become more engaged in introducing and bringing these processes to fruition.

4. Localized practices

The need to consider localized contexts as being relevant and important has already been mentioned. Additionally, in the case of SZD, what was helpful was a specific flexibility with the curriculum which can be considered as a framework (German: Rahmenlehrplan). This implies that by the end of a particular school year specific teaching and learning goals have to be reached or topics touched upon regardless of the exact timeline and approach. Subjects can be renamed in the specific school context. This allows flexibility on the part of the teachers to focus on, for example, job coaching, social skills, etc., should the need arise. This also enables a context to discuss problems with students as and when they occur. In turn, this underlines the importance of personal engagement and the contextualization of national school system structures or even specific schools when implementing teaching approaches.

The goal behind our study was to promote (more) child-centered and therefore inclusive education and to act as catalysts toward change at SZD. This goal was developed in a joint process of the participatory research team, with teachers from SZD playing a leading role in defining the aims of the study. As previously described in the methodology and methods section, our study, according to the chosen (Critical) Participatory Action research approach, can and should be considered as political, meaning that it was not value-free in the sense that it was constantly concerned with the interests of all the actors at SZD (Armstrong & Moore, 2019). All the research questions were codeveloped by the practitioner-researchers; the primary driving force behind the research process was the interest of the teachers themselves in researching their own practices (see Kemmis et al., 2014). Our goal was to collectively change the particular social world of and at SZD by “thinking about it differently, acting differently, and relating to one another differently – by constructing other practice architectures to enable and constrain their practice in ways that are more rational (in the sense of reasonable), more productive, and more just and inclusive” (ibid, 17). And this is what we tried to do. We would like to end on a hopeful, visionary note as expressed by one of the collaborating teachers:

Sabine: Inclusion is an attitude that needs to be filled with life. If this is the case, the orientation of the institution will automatically follow.

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