Chapter 8
Issues in "Individualized" Teaching Practice in Germany: An Ethno-Methodological Approach

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Introduction: Individualized Teaching and Learning

In the 1990s and early 2000s a paradigmatic change in the pedagogical thinking can be observed in many European countries. This change is often referred to as *shift from teaching to learning,* prominent not only in higher education (Barr & Tagg, 1995) but on other levels of the educational system as well (Carlgren, 2011). Progressivist thinking promoting a "child-centered" pedagogy contributed to this shift as well as psychological cognitivism and the program of "Self-Regulated Learning" (Zimmerman & Schunk, 2011). A consensus was reached that learning could not be *made* through teaching, but teaching could only *offer* opportunities for learning. At the same time there was a growing knowledge about the variety of learners and the heterogeneity of students. The traditional idea of one setting of teaching addressing a whole group of learners became problematic. The classical principle of *differentiation* in comprehensive schooling was taken further to the *individualization* of teaching (Carlgren et al., 2006). Under this view, classrooms became *learning environments* and teachers became *tutors*. While this shift seems to be quite obvious in theory it is far from clear what it means in practice. How do teaching practices change and what does this mean for learning? How are class-rooms organized so that students can learn individually? What does this mean for the work and self-conception of teachers?

The overall move from teaching to learning was shaped differently in different parts of Europe. Especially in the German speaking and in the Northern countries of Europe "individualized" learning has been a wide-spread trend. Carlgren et al. (2006) compare changes in the pedagogical discussion and in the patterns of teaching and learning in five Nordic countries. In Sweden "own work" became popular

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when in 1994 a new national curriculum "created a stronger pressure to develop tools for keeping track of every pupil" (Carlgren et al., 2006, p. 307). Within "own work" students have individual timetables, planning and evaluating their own work and monitoring themselves. From Norway, Denmark and Iceland evidences for substantial changes in the patterns of teaching towards work plans and individualized learning are reported as well (Dallan & Klette, 2016). Only in Finland, maybe surprisingly, traditional teacher-centered patterns of classroom discourse were apparently more persistent. Carlgren et al. (2006, p. 319) interpret the trend to individualized teaching and learning as part of a neo-liberal educational agenda and they suspect a "hidden curriculum of late modern schooling" where "self-mobilizing and flexible learners (…) put themselves to work and evaluate their results" and where "the pupils are treated as entrepreneurs".

In the German discourse on primary school teaching, the ideas of progressive education are traditionally rather influential, and they were even strengthened by the constructivist move in didactical theory. Meanwhile there is some controversial debate (Rabenstein & Wischer, 2016); but the mainstream of German pedagogical discourse is characterized by a strong belief that schooling must move away from teacher-centered lessons and move towards an "open education" as well as towards the "individualization" of learning. This is considered to be the best way of acknowledging the heterogeneity of learners: Each student should be able to learn on his or her own pace and follow his or her own way of learning (Klieme & Warwas, 2011; Bohl et al., 2012; Rabenstein et al. 2018). After the "PISA-shock" of 2001 in Germany, standards and national testing were implemented, following the trends developed in Anglophone countries. Learning outcomes are now described in terms of *competencies* instead of *knowledge,* which in effect adds to the described move to the individual learner.

The idea of "individualizing" teaching and learning is additionally supported by the current discussion around "inclusive" schooling and the integration of children with special needs, which is very prevalent in Germany these days. Germany does have a strong tradition of special schools for children with special needs – a tradition which is now heavily debated. In inclusive schools, didactical thinking and didactical practices have to change: It seems obvious that it is no longer possible to teach all members of a school class in a whole group manner, instead it is considered to be necessary to teach in much more differentiated or even individualized ways (Huf & Schnell, 2018). Within this discussion, some schools in Germany provide mixed aged school classes insofar as they seem to be suitable to welcome the heterogeneity of learners, for example, by enabling children of different ages to learn from each other. This is an interesting aspect for international comparison as well (Huf & Raggl, 2016).

German Primary School classrooms these days often look like workshops, since there are students working by themselves on workbooks, as well as an assortment of other materials and learning devices (Reh & Berdelmann, 2012). The students are not actually working on the same tasks but are occupied with different activities. These classrooms rely upon the idea of "self-directed learning" (Wagener, 2010) based on the self-management of the learners. Although these concepts are rather

popular in German pedagogical literature, empirical research is rare. The lack of detailed empirical analysis of individualized teaching practices may be at least partly traced back to the methodological challenge of this kind of research: The complexity and diversity of the ongoing activities within "open classrooms" require methods of observation, which get close to these activities (Breidenstein, 2008a). It is not enough to follow the overall classroom discourse as in established classroom research but the researcher has to sit next to the students and observe them conducting their particular work.

This was the starting point of our research project "individualization and control" (see Breidenstein & Rademacher, 2017). Our research aimed at analyzing on the level of practices and practical demands: What does it mean for teachers as well as for students when school lessons are organized according to the ideas of self-guided and self-regulated activities? How does the "pupils´ job" look like in this setting (Breidenstein & Jergus, 2008)? What is the teacher's work in these lessons? These research questions predominantly refer to the pragmatics and daily routines of teaching and learning, but, as I will show, the analysis as well tells us something about the handling of subject specific contents in the individualized classroom.

The contribution will first give a concise sketch of our field research which was mainly classroom ethnography for more than 20 weeks in three different schools. The main part of the paper then presents two case studies on the micro-level of classroom interaction. The first case study discusses an observation of a student working with a learning device called the "pharmacy", a complex learning tool for divisions developed by Maria Montessori. The second case study refers to the transcript of a teacher-student-interaction on learning to read. The discussion points to the structure of individualized teaching and learning: For "open-classrooms" there seems to be a strong tendency to settle standards and routines when it comes to *organizing* the autonomy and self-reliance of learning.

The Research Project

The theoretical framework of the research is settled by the "studies of work" (Garfinkel, 1986) and the "theory of social practices" (Schatzki et al., 2001) which enable the analysis of situated practices in their own logic and effects. This means, not to ask for intentions or motives of actors, but to look at practices as an object of investigation in itself. Our research methods originate in the tradition of ethnography (Atkinson et al., 2001). The most general ambition of ethnography is the reconstruction of the participants´ perception and handling of their everyday life *from within* – not interpreting and not judging from a point of view from outside.

"Ethnomethodological indifference" (Garfinkel, 1967) is the most important principle of this kind of research. This principle stands in a particular tension to a *didactical* point of view which asks for the conditions and 'quality' of learning. Of course there are different traditions of didactical research in Europe (Klette, 2008; Hudson & Meyer, 2011; Pace et al., Chap. 5 in this book; Ligozat, Chap. 3 in this

book). Especially the German discourse is characterized by a big gap between the tradition of "general" didactics, which was never really connected to classroom research, and subject matter didactics, which are involved in classroom research more or less. But regardless of the differences every form of didactics has a normative and prescriptive bias in observing classroom activities. Didactics, in either version, includes an *idea* of teaching and learning and this idea constitutes the point of view for research which necessarily evaluates from this point of view. The didactic perspective *grosso modo* reveals deficiency when it comes to classroom research; real classroom interactions very seldomly fulfill all the expectations we may have in lessons. With an interest in the 'quality' of teaching and learning we need this kind of evaluative stance – not at least to look for the problems in the factual teaching and learning practices. Ethnomethodology, in contrast, does not evaluate the practices under investigation. It operates with the assumption of "order at all points" (Sacks, 1984) and it asks how this orderliness is built and maintained. In the famous definition of Garfinkel (1967, p. 7): "Ethnomethodological studies analyze everyday activities as members' methods for making those same activities visible-rational-and-reportable-for-all-practical-purposes, i.e. 'accountable', as organizations of commonplace everyday activities."

For classroom activities we must assume that their orderliness, the "interaction order" (Goffman, 1983) and the daily routines may stand in tension to the quality of teaching and learning which need not be a problem for the participants themselves. If we are interested in exploring the nature of this tension, this is the thesis I want to discuss, we need both: the reconstruction of the participants' doings and sayings with ethnomethodological indifference *and* a reflection and evaluation of these doings and sayings with an interest in didactics (Breidenstein, 2008b). I will come back to this discussion at the end of the paper.

Against this theoretical background the research project aimed to analyze the practical demands and practical accomplishments of "individualized" teaching and learning environments on an everyday level. To grasp as much variation as possible in the practices we were interested in, we conducted field research in three contrasting schools. All of them were characterized by mixed-aged grouping of students (first and second grades or first to third grade, typically age 6 to 9 in Germany) and all of them were using "self-regulated" styles of teaching and learning, although in very different ways.

Our first field site was a Montessori-School with "Freiarbeit" (free work) in the core of teaching and learning. "Freiarbeit" where children plan their own learning activities, in consultation and agreement with the teacher, took place every day of the week from 7.30 to 10.00 a.m. This type of learning is mainly based on the learning materials or devices designed by Maria Montessori,[1] which cover aspects of

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[1] Maria Montessori was an Italian physician living in the first half of twentieth century who developed a child-centered educational approach based on observations of children. Montessori's methods and especially her idea of a learning environment have been used for about 100 years in many parts of the world.

language learning as well as mathematical learning or sciences. I will present an example from the observation of this kind of learning in the next section.

Secondly, we conducted field research in an "alternative" or "free" school which had been growing out of the anti-authoritarian movement of the 1970s. In this school the teaching style is very much characterized by negotiations: Which child is occupied with which kind of learning activity is debated every single day. Even the timing of the schedule and the breaks are object of negotiation. Most of the time, most of the children are dealing with worksheets or other learning devices on their own, while the teacher is coaching or supervising small groups of students or single students. I will present the transcript of an audio-recorded teaching conversation between one teacher and one student in this paper.

The third school which is not represented by an example in this paper was a regular neighborhood school and not shaped by a special pedagogical program, but instead by a more pragmatic stance in dealing with the standard of mixed aged grouping in the first two years of schooling in this part of Federal Germany. The layout of our research was not so much interested in the differences between the single schools, but in the potential of generalization: Findings which occur in all the three contrasting schools would plausibly be of more general relevance. In this way the examples I present in this paper do not so much stand for specifics of the particular school. It is argued that they do represent more general patterns of the practice of individualized teaching and learning. Montessori-like learning devices were used in all three of our schools and dyadic teacher-student interactions took place in all of the schools as well.

We conducted ethnographic fieldwork with two researchers in at least two groups in each of our schools. Ethnographic fieldwork means in the first place to get as close as possible to the situation of the "participants" (teachers as well as students) in the "field" (the classroom) to be able to retrace and understand *their* way of dealing with *their* situated tasks. "Getting access" in ethnography does not only mean the formal admission to observe but it means, beyond that, gaining the trust of the participants and becoming familiar with their normal course of life (Hammersley & Atkinson, 2007; Breidenstein et al., 2013). We spent several weeks in doing participant observation in each of our field sites. We audio-taped numerous teaching conversations, conducted interviews with the teachers as well as students and collected data from altogether 20 weeks of fieldwork.

With this corpus of data, we were able to explore the practices of child-centered teaching and learning in its variability and to look for overall structures of this kind of organizing classrooms (see Breidenstein & Rademacher, 2017). For the purpose of this paper, I will focus on two case studies, which offer insights into the structures of individualized learning as I want to argue at the end.

Case-Study: Working with the "Pharmacy"

I have chosen, as an example, the observation of an eight-year-old student working with a Montessori learning object, called the "Great Division".[2] The well-known Montessori materials (Fig. 8.1) are paradigmatic in enabling students to work on their own, to solve tasks and control the results by themselves. The "pharmacy", as the "Great Division" is called in everyday terminology, is designed to solve mathematical tasks and is implemented for dividing large numbers.

The functioning of the "pharmacy" is far too complex to explain it in detail. The operating consists of several activities like putting certain numbers of pearls with certain colors into little bowls, distributing pearls to the holes in the wooden boards, changing pearls of one color to another color and counting pearls. In effect, the user is able to divide numbers with seven digits through numbers with four digits by the means of this instrument. Seeing the young student doing this impressed the observer. Yet, the operations of the pharmacy are far too advanced to be understood by the operating students – or the observing ethnographer. The fabrication of the result of the division of big numbers is made possible by a complex algorithm which is built into the "pharmacy" materials. The young students learn how to *handle* it but they don't *know* what they are doing, could be argued. So, in terms of didactics we must ask if pupils really understand the division of numbers or if they simply have the ability to solve impressive looking tasks.

Fig. 8.1 The "pharmacy" Montessori materials

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[2] The official name of this learning material is "Great Division" but students as well as teachers call it "pharmacy" – probably because the ensemble of things reminds them of an (old fashioned) pharmacy.

This skepticism (which evolved from my discussions with specialists in didactics of mathematics) is enforced when observing a pupil working with the pharmacy in situ. My field notes are altogether characterized by the admiration of the young student's routine and experience in the handling of an apparatus, which I, as the adult observer, hardly understood. Vincent, as I call the student, did not hesitate or contemplate at any point, but solved the eq. 7,762,929 divided by 3 by using pearls, little bowls, test tubes and holes in wooden boards. To my surprise, having found out the result, he did not even check if it was correct. He did not turn around the task card where the correct result was noted for the purpose of self-control.

What does this indicate? The detail that Vincent did not check his result is clearly due to his lack of interest in the answer. Vincent uses the pharmacy like a calculator: You would not check the results of a calculator either, because you simply trust it. And besides, even if he would have noticed a wrong result, he would not have known *where* he went wrong in the complex procedure. He would have had to try again right from the beginning. Vincent explained to me that he likes to use the "pharmacy", to "play" with it, as he calls it, but reflecting on his practice didactically (in terms of the quality of learning), we cannot be sure about the nature of his mathematical reasoning. And besides from the perspective of mathematics, it should be noted the "pharmacy" represents the task of division as an act of allocation – but not as an act of partitioning which would be as important as representation of division.[3]

In contrast to this legitimate doubt from a didactic perspective the teacher was enthusiastic about Vincent and his handling of the pharmacy. After she noticed me watching Vincent, she praised him as a role model for his self-guided work with the learning material. But, what is it that fascinated the teacher so much about Vincent's work? It seems to be the experienced and independent manner of his handling of the pharmacy. He didn't need any help or assistance and this is the desirable constellation for a classroom where students are occupied by various activities and the teachers are only able to assist one or two of the children. This organization of teaching and learning therefore relies on pupils like Vincent and on the primacy of doing. The *practical demands* of organizing individualized learning prioritize the 'being busy' of the students over the questioning and construction of conceptual knowledge (also see Dalland & Klette, 2016).

Case-Study: Learning to "Read" in a Dyadic Teacher-Student-Interaction

Let us now have a closer look at a situation where a teacher helps a single student in a reading sequence. This kind of interaction occurs regularly within an open classroom. The teacher is asked for help and assistance every now and then by numerous

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[3] Without the idea of partitioning you cannot estimate the approximate size of the result e.g. – a competence which is rather important in daily life.

students with different problems. During the time she turns to one student, she has to reject or to put off all of the other requests. But in the long run the teacher has to be fair and divide her assistance equally among the students in the classroom, so every single interaction with a single student has to be valuable.

In the following case the ethnographer observes a teacher, who is called Anja, helping a student named Sören, to "read" his first words. Assisting children when they learn to read is a multi-layered task, as Fisher (1997, p. 194) shows: "teachers were both concerned about children learning to read and did address literacy learning in their interactions with children *while they were working.*" As well teachers are "also concerned about affective aspects of the children's development: that children should enjoy reading and that they should feel confident as learners" (ibid., p. 193). How are these complex tasks dealt with in practice? The transcript below (Excerpt 8.1) is an audio-taped dialogue between the teacher and her student.[4]

Excerpt 8.1

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Anja: Wir lesen jetzt mal. Lies mal. [We will now read. Please
read.]
Sören: Rock. [skirt]
Anja: Nein, das steht hier nicht. [No, that is not written
here.]
Sören: Ich kann eigentlich noch nicht lesen. [Actually I cannot
really read yet.]
Anja: Du kannst noch nicht lesen? [You cannot read by now?]
Sören: Ich kann, ich kann nur „Polizei"oder so was lesen, weil
das Papa mir schon ganz oft gesagt hat, weil ich das schon ganz
genau kenne. [I can, I can only read „police" or things like
that because my father has told me very often that because I
already know it very well.]
Anja: Und wenn man ein Polizeiauto sieht, weiß man, da steht
„Polizei" drauf, ne? Gut. [And when you see a police-car you
know that that there is „police" written on it, right? Well.]
Weißt du auch nicht, was da steht? [And don´t you know what is
written here?]
Sören: Seehund. [seal]
Anja: Aha, weil das auf dem Bild ist, denkste das steht da?
[Aha, because this is on the picture you think it is written
here?]
Sören: Mhm! [agreeing]
Anja: Hmh. [denying] Was ist denn das hier für nen Buchstabe?
[Which letter is this?]
Sören: B.
Anja: Und was ist das? [And what is this?]
Sören: A [For the English translation it would have to be an
E.]
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[4]This passage is difficult to translate because some of the confusion only works with the German vocabulary and not within English. This is the reason why I keep the German version beside the English translation.

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Anja: Okay, und wenn wir das jetzt zusammenziehen? [Okay, and
if we now pull this together?]
Sören: B-A [B-E]
Anja: B-A. Ba. (.) Ba (.) [in English: B-E-] Was ist das hier?
[What is this?]
Sören: R
Anja: Mhm. Jetzt zieh mal die beiden zusammen. [Now pull them
together.]
Sören: B-a-r [b-e-a-r]
Anja: Jaha! Bar-
Sören: Bar-
Anja: Und jetzt lesen wir [and now we read]
Sören: T [D]
Anja: Ja! Jetzt ziehst es alles zusammen! [Yes. Now you pull
everything together.]
Sören: Bar- Bart. [bear- beard.]
Anja: Sag's noch mal! [Say it again!]
Sören: Bart. [beard]
Anja: Bart, was ist denn `n Bart? [Beard, what is a beard?]
Sören: Haare ämh hier oben [Hair, here above. (showing between
nose and lips)]
Anja: Und jetzt erzählst du mir, du kannst nicht lesen? Du hast
doch grad `n Wort gelesen! [And you tell me you cannot read?
But you have just read a word!] Herzlichen Glückwunsch!
[congratulations!]
Sören: Aber nicht so richtige Sachen. [But not so correct
things.]
Anja: Ach, das war doch n richtiges Wort. [But that was a
correct word.]
Anja shortly deals with other children at the table. Then she
spells out together with Sören single words from his reading
book. Sören reads with her help another word: „Löwe" ["lion"].
Anja shouts enthusiastically: Oh Sören! Du kannst lesen! [Oh
Sören! You can read!]
She hugs him and replies: Du kannst lesen! Du hast mir eben
erzählt, du kannst es nicht. Super! [You can read! You just
told me you can´t. Super!]
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So, what is going on here? How can a teacher be so excited when a student spells out a few words? She celebrates the result as a great success while Sören himself is still not convinced that he is able to read yet. And he is right: spelling out single words is not "reading". From a didactical point of view learning to read is a far more complex process which reaches from recognizing singular letters to decoding writing (e.g. Sassenroth, 1991). Compared to this lengthy process Anja makes learning to read to one single event. Sören's success in reading takes place in this situation but it has been made possible by a very close assistance by the teacher. We come to the presumption that this interaction *has* to be a success. When a teacher invests her valuable time into one single student, this has to result in this particular student's 'learning'!

This is a pattern that we observed regularly in the implementation of individualized teaching and learning: When the teacher turns towards *one* student this interaction has to end by the teacher being able to see that *this student* has learned. This is often not that easy. To realize the difficulties it is worth comparing this situation to whole-class-teaching: When a teacher interacts with 20 or 25 students at the same time, there is a very good chance that some of them will understand and be able to demonstrate their understanding of the lesson by giving correct answers. This comprehension demonstrated by some students giving right answers stands for the learning outcome of the whole group. However, when the teaching is directed to one single student it is dependent on the learning achievement of this particular student.

We have another example where Anja tries to facilitate Sören the spelling of "neun" [nine] – an interaction which turns out in a disaster (see Rademacher, 2016). After several tricks and hints, which Anja offers for "finding out", the right spelling of "neun" Sören is completely disturbed and seems even more confused than he was at the beginning. This complementary situation with Anja and Sören, which I cannot present here,[5] shows what can happen if a student does not understand what the teacher wants to explain to him – or if the teacher does not understand what the real problem of the student is. So the risks and uncertainties of an "in-the-moment-teaching" (Griffith et al., 2015) within the dyadic teacher-student interaction may be in the background when Anja celebrates her overwhelming success of "having learned how to read" with Sören. Again we note that the organization of individualized teaching demands to point to a "success" in learning which from a didactical point of view is not very evident.

Discussion: The Structure of Individualized Teaching and Learning

I would like to summarize the above arguments from the empirical observations in some short remarks which may be seen as first attempts to reach conclusions, while I am aware that further research is needed.

Objects and learning "environments" play a crucial role in self-guided learning: Not only Montessori-materials as in our case, but workbooks, worksheets and – to a growing extent – computer-based learning programs as well. These tools facilitate the "self-guided" learning of young children as much as they offer tasks and make it possible to check the solutions. Yet, these tasks often have a fixed linear outcome: there is only *one* way to *one* right solution. The challenge for students dealing with these materials often lies more in the reasonable care and accuracy of the work than in reflecting and finding new ways to solutions. Many of the activities the students

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[5] This dialogue is far too complex to include it in this paper and the misunderstanding of the right spelling of the word "neun" cannot be translated into English (but see Breidenstein & Rademacher, 2017, pp. 128–134).

carry out have the character of a routine piece of work. The topic itself may take a backseat within this constellation. The interest of students may lie more in finishing these tasks than in reflecting on the problems – as for example the observation of Vincent showed (also see Huf, 2006).

In the self-guided learning approach, the interaction between teachers and students is characterized by the fact that it is one-to-one interaction within a group of learners who have diverse needs. So the dyadic teacher-student interaction is usually short and standardized, since it consists of giving snippets of advice or controlling some easy-to-check task. Sometimes, as we saw in the example with Anja and Sören, it can be more extensive, but then the teacher is under special pressure to make it result in a success. An observable learning effort for this particular student has to be achieved which may lead to rather trivialized notions of "learning".

Summarizing the results of our observations it must be assumed that the organization of individualized and self-guided learning tends to standardize and trivialize the contents. The organizational task of providing every student with self-employing engagements seems to neglect the complexities and demands of mathematical or language learning. We have little evidence for creative and open-ended tasks in our empirical data. Tasks have clear-cut solutions which can be controlled easily. Within the "individualization" of teaching and learning there seems to be a strong tendency to settle standards and routines when it comes to organize the autonomy and self-reliance of learning (see Martens, 2018). The most important maxim seems to be that every child in the classroom is busy (see Dalland & Klette, 2016). The pragmatics of organizing the classroom seems to be more important than challenging or thought-provoking tasks.

The latter aspect, of course, is not only true for open classrooms and individualized teaching and learning practices but in many cases for whole-class and instruction-oriented teaching as well. The research on classroom management reports a strong tendency towards routines and avoiding challenging tasks: "relatively simple and routine tasks involving memory or algorithms tend to proceed quite smoothly in class with little hesitation or resistance. (…) In such circumstances a well-managed class would not necessarily be a high achieving class" (Doyle, 2006, p. 111). This tension between pragmatics and pretension with regards to content is displayed in the tension between different methodological prospects as well: To grasp the logic of these findings we do need research from an *ethnomethodological* point of view which is interested in the functioning of daily routines and (classroom) pragmatics (Breidenstein & Tyagunova, 2021). It allows to follow the actors in order to reconstruct their situated and context-specific understandings and doings. But to discuss the problematic of our findings in terms of possibilities and restrictions to learning we need the expertise and perspective of (subject) *didactics* – in our case mathematics and language learning. Relating didactics and ethnomethodology to each other in empirical research on different kinds of situated teaching and learning practices seems to be a challenging but as well promising task.

Above all we should ask, how different traditions of classroom research which have developed apart relate to each other. In this respect it seems promising to discuss how classroom research in the tradition of ethnomethodology communicates

with pragmatist approaches or with the French-speaking didactical approach "Joint Action framework in Didactics (JAD)" (Ligozat et al. 2018). In both perspectives, the pragmatist as well as JAD, the daily routines and habits of classroom activities play a crucial role in conceptualizing "learning". Especially within JAD, the core concept of the "didactic contract" (Brousseau, 1997; Sensevy, 2011) represents the practical cooperation of teachers and students in maintaining the specific norms and expectations which constitute the kind of interaction related to the transaction of knowledge. This contract remains implicit and resembles the concept of the "practical accomplishment" of the specific social order of classroom interaction within ethnomethodology and its taken-for-granted nature (Breidenstein & Tyagunova 2021). But, as far as I see, this tradition of didactic research has not yet turned to individualized teaching and learning practices. So, in the terminology of JAD we would have to explore the *didactic contract* of individualized teaching and learning. We do need to know more about the specific, situated and practical requirements as well as effects of individualized teaching and learning if we want to estimate its benefits and costs – not only in Germany.

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