



Educational Design Research

Volume 4 | Issue 1 | 2020 | Article 28

Contribution Practice Illustration

Title **Case Studies and their Epistemological Potential in Design-Based Research – A Practice Illustration¹**

Author **Petra Frehe-Halliwel**
University of Jena
Germany

Tina Emmeler
University of Paderborn
Germany

Abstract Researchers in DBR projects create various text products, such as interview transcripts, scientific reports and sometimes a case study². Usually, case studies are only considered to be by-products created during DBR to give the stakeholders of the project, including university students of vocational education and training, an insight into the development process and the underlying practical challenges. In this context, case studies mainly fulfil a didactic function for the stakeholders. However, we believe that case studies do not only serve as an instrument for communicating project content to others (outside the scientific community), but are a medium for the researchers themselves to ascertain their own learning processes that take place in the exploration of the field of research.

In that way, we are emphasizing a process-orientated perspective on DBR. We assume that the process of creating a case study has its own epistemological value. As we will show and try to illustrate with practical examples, creating a case study applies to very different criteria in contrast to creating scientific text products. For instance, the researcher creating a case study has to pay attention to details, the use of language and ways of communication as well as to try to capture the overall atmosphere of the organization, social groups etc. We consider this a 'creative act' and see many parallels to Walter Benjamin's

¹ This article is linked to our methodological contribution in this EDeR special issue 'The Epistemological Relevance of Case Studies as Narratives in Design-Based Research' (Emmeler & Frehe-Halliwel 2020). In order to enable our readership to enter both articles independently, some main passages of our argumentation will be represented. Within the article, we will mark these passages as direct quotes "...". (Emmeler & Frehe-Halliwel 2020) to ensure comprehensibility.

² In this article, we are focusing on instructional resp. didactical case studies addressed to university students in the field of vocational education and teacher training.

theory of translation³: In DBR it is the world of science on the one hand and the field of practice on the other that make a translation necessary: The languages applied in both fields differ, although the people working there might all belong to one and the same nationality which might allow them to communicate with the people from the other “world”. However, this does not mean that researchers *understand* the practice and the emerging phenomena per se. A translation between the worlds is necessary. For this, the case study is the first step.

³To learn more in detail about the underlying theory, see Emmler & Frehe-Halliwell (2020, this issue).

We are convinced that this approach opens up a different perspective on the DBR project and focused research interests. Developing a case study can be helpful for an overall and deep understanding of practice – which is one of the main goals for DBR conducted in the tradition of a paradigm consistent with the humanities.

This (additional) paper aims to illustrate how a case study can derive from the background of a DBR context. We would like to provide insight into the concrete usage of a case study approach in a DBR project. In order to structure the case study description, we use the criteria of Reetz (1988), a German professional in vocational education and training whose ideas on case studies go with Benjamin’s idea of writing narratives.

Keywords Practical illustration
Case study
Process-oriented perspective on DBR
Phenomenological understanding
Walter Benjamin
Writing in Research
Reflective Writing

DOI dx.doi.org/10.15460/eder.4.1.1556

Citation Frehe-Halliwell, P. & Emmler, T. (2020). Case Studies and their Epistemological Potential in Design-Based Research – A Practice Illustration. *EDeR - Educational Design Research*, 4(1), 1-18. <http://dx.doi.org/10.15460/eder.4.1.1556>

Licence Details Creative Commons - [Attribution 4.0 International \(CC BY 4.0\)](https://creativecommons.org/licenses/by/4.0/)



Case Studies and their Epistemological Potential in Design-Based Research – A Practice Illustration

Petra Frehe-Halliwell, Tina Emmler

1.0 Introduction

As shown in our methodological article (Emmler & Frehe-Halliwell 2020, this issue), we draw upon the following theoretical basis:

"DBR projects provide various text products deriving from both practice and researchers (Sloane 2014; Emmler 2015). Researchers' text products are based on scientific criteria, strongly linked to the underlying research objective and methods. Hence, the researcher tends to illuminate possible irrelevancies, uses supposedly precise language and keeps necessary distance. Members of the scientific community constitute the main target group of those scientific texts usually published in journals or book chapters and then read and (mostly) understood by the scientific community who is familiar with the complex scientific terms, methods and concepts (Sloane 2018, 358). However, further stakeholders of the research project are usually not considered to be relevant recipients of these texts although they are expected to be able to read these texts and apply them in their daily routines. In DBR projects, it is (among others) often teachers and school administration, who are interested in the project's results. They are hoping for advice, suggestions, alternatives etc. to cope with the practical problems faced by the project. In addition, DBR projects might provide valuable knowledge that is worth being included into teacher training and education. Sometimes, researchers generate special text products for this (non- or not yet scientific) target group like manuals and case studies, which they use in university courses. Often, these kind of text products are considered as 'by-products' of DBR projects with highly practical but apparently low scientific value or outcome. This paper aims to turn the spotlight on these 'non-scientific' text-products."

This article aims to show *illustrating* excerpts of case studies derived from different DBR projects. This means: We do not intend to present an ideal-typical case study as a kind of 'recipe' to be followed. Nor are we intending to verify, if and to what extent criteria of developing case studies are met. Rather, we want to highlight the particularities of case study development and give examples for details that suddenly become important when creating atmosphere and describing situations.

We consider the development of a case study a ‘creative act’ and see many parallels to Walter Benjamin’s theory of translation and narration⁴: “In DBR it is the world of science on the one hand and the field of practice on the other that make a translation necessary: The languages applied in both fields differ, although the people working there might all belong to one and the same nationality which might allow them to communicate with the people from the other “world”. However, this does not mean that researchers *understand* the practice and the emerging phenomena per se. A translation between the worlds is necessary. For this, the case study is the first step.” (Emmler & Frehe-Halliwell 2020, this issue).

⁴ To learn more in detail about the underlying theory, see Emmler & Frehe-Halliwell (2020, this issue).

In order to structure the case study description within the following chapters, we use the criteria of Reetz (1988), a German professional in vocational education and training whose ideas on case studies go with Walter Benjamin’s idea of writing narratives.⁵

⁵ Walter Benjamin’s theory of narration and translation is the theoretical core of our contribution linked to this article: ‘The Epistemological Relevance of Case Studies as Narratives in Design-Based Research’ (Emmler & Frehe-Halliwell 2020, this issue).

At this early point of the contribution, we would like to point out a challenge of our article and proceed accordingly: Here, we are emphasizing a **process**-orientated perspective on DBR as we assume that the process of developing a case study opens up a different perspective on the DBR project and the focused research interest(s). We believe that developing a case study can be helpful for an overall and deep understanding of practice and therefore has epistemological potential. At the same time, we are only able to show the case study as a **product**. Furthermore, it is not possible to reconstruct the direct impact of the case study development on the research results. Nevertheless, one could think of applying self-reflection methods and instruments during this process like research portfolios etc. (Gerholz 2009; Zoyke 2012). Here, we are confronted with the well-known challenges of interpretative text work (Soeffner 2004).

2.0 Criteria of Developing Case Studies (Reetz 1988)

The world (of work) contains many very complex situations and problems. Therefore, students – as future teachers – have to be prepared to cope with such complex situations. The structure of real life problems is different from the structure, which students are learning at school/university with their separated subjects and highly developed but also distinguished disciplines. This is seen as one of the core issues why students have problems applying their knowledge to real live problems. Coping within more complex environments requires more complex occasions of learning and learning processes. As has been proved, case studies can meet these requirements (Reetz 1988, 148).

The case study method originates from the Harvard Business School (HBS) in Boston. Inspired by the casuistic approach of law schools, they developed a teaching method that draws on discussing authentic cases from the economic/business life (Kaiser & Kaminsky 1999, 137). Case study methods are hugely popular and therefore theoretically discussed on an international scale. Hence, as a writer of a case study you

are applying theory and there is a wide selection of theories to choose from. Hereafter, we are drawing on the work of Lothar Reetz, a German professional in vocational education and training, for the following reasons: First, the work of Lothar Reetz with regard to didactical case studies is very well respected in the field of vocational education and training and, therefore, is also an important theoretical orientation for trainee teachers in this sector. Second, Lothar Reetz' theory, especially with its focus on the relevance of situational adequacy and subjective relevance, contains reference points to Benjamin's theory of narration and translation.

Bearing in mind the background of this contribution, we will not focus on explaining single methodical steps while applying case studies. We prefer to focus on existing criteria towards developing the case study. Lothar Reetz' work from 1988 outlines relevant criteria of the case construction. From his perspective, case studies do not only contain the 'realistic event', but also additional information and learning material to support the process of problem solving. Reetz states that the chosen and further developed cases need to be exemplary for *something* as well as *somebody*. This is what he calls the 'Principle of the exemplary'. On the one hand, he distinguishes criteria that refer to the learning object: They have to be representative and adequate with regard to both the (1) situation and the underlying (2) science/domain. On the other hand, he distinguishes criteria with regard to the (3) subjective relevance and (4) subjective adequacy (whether or not the learner has the opportunity to learn and to grasp the situation, event, problem and so on). We will explain the single criteria as well as their relation among each other in the following chart.

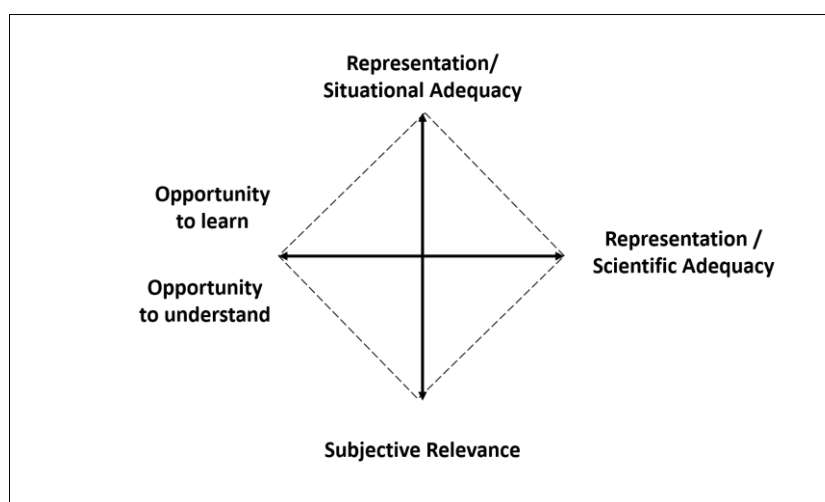


Figure 1. Criteria of developing case studies and their implications (Reetz 1988, 151 translated by P. F.-H.).

(1) Situational Adequacy

This criterion claims that the case needs to represent a relevant section of reality with regard to the future vocational field of the student. The reference to reality has to be both plausible and authentic. Accordingly, the practice's features have to be considered. It is the (university) teacher's task to reconstruct the situational context, which is

the basis for learning about relevant terms, concepts and rules. This emphasizes the inductive approach of case studies. This 'modelling' process requires the use of media (signs/system of signs). In general, the (university) teacher uses language for the coding of case-inherent events, problems, techniques and so on. They emerge as texts, diagrams, statistics, pictures etc. To put together the consecutive parts of the event, problem etc., an adequate form of literature is necessary: This can be a description, narration, report, exchange of letters, dialogues, role play, play or a film. It is relevant that the case's 'plot' includes actions of involved persons.

(2) Scientific Adequacy

This principle requires ensuring the case's connectivity to science. It ought to be possible to extrapolate from the case study to representative and general knowledge. Furthermore, the case has to include theories that cannot contradict scientific findings. Therefore, case studies should also contain theoretical models, concepts etc. In this manner, the case study confronts the students with technical terms and text(s).

(3) Subjective Relevance

This principle means that the case's scenario should affect the student personally. From the student's point of view, the case has to be relevant for both his or her current (professional) life and future (professional) life. It also has to meet the student's interests and personal strengths. To achieve these objectives, on the one hand, the case should contain persons (roles) to confront the student with. On the other hand, it can also be helpful to include persons (roles) that the student can identify with. Reetz assumes that this kind of involvement entails the student's desire to solve problems.

(4) Opportunity to learn

In the sense of a learning instrument, case studies have to consider the students' prior knowledge and experiences. The case has to refer to situations/problems a student could be or already could have been confronted with. With regard to the comprehensibility of the case by the student, the complexity of real life has to be simplified in the case study. However, the case cannot simply be shortened. Rather, it is about carving out the case's points/core.

The case-immanent information and the way of its presentations are supposed to stimulate the student's imagination. Embedding 'cognitive conflicts' (Piaget) is a valuable learning opportunity. Additionally, we see a relation to the criterion (1) Situational Adequacy as real life is far away from always being rational, logic or free of errors. From our point of view, case studies can also help to reflect critically on rules, cultures and veracity apparently applying in real life.

From a global point of view of these four criteria, Reetz states that they somewhat compete with one another. He assumes that an ideal con-

stellation of all criteria (being fulfilled to 100 %) is not possible. However, Reetz emphasizes the importance of the criterion (1) Situational Adequacy.

To achieve this, Reetz recommends that (university) teachers should do research in practice:

“Um [in Fallstudien; PFH] zu realistischen Ergebnissen zu gelangen, sind genaue Praxisrecherchen erforderlich. Deren Ergebnisse sind dann in eine episodische Ebene mit Konflikt, Handlungsfolge und Lösungsaufforderung zu transformieren. Je gründlicher die Praxisrecherche, je klarer die Vorstellung von den zu erlernenden Begriffen und Regeln, desto erfolgreicher die Reduktionsarbeit und die Umwandlung in einen Handlungsablauf“
(Reetz 1988, 151).

Summarizing Reetz' work from our point of view, the basic condition for developing case studies is that their development needs to be in accordance with the real-life context. However, this is not a condition easily accomplished. The remaining and nontrivial question is: Which 'source' do (university) teachers draw these cases from? We believe that being a researcher involved in a DBR project constitutes an enormous advantage for teaching or rather developing case studies: It is a constitutive requirement of DBR that the researcher immerses himself or herself in the field of practice (for example in vocational schools), where he or she gains very valuable impressions and perspectives. Primarily, it is of course about choosing the appropriate practical problems and legitimating them by answering questions such as 'What is worth being learned and why?' In addition to this, the researcher also gains information that is very important for developing authentic case studies: Researchers in the field of vocational schools have the possibility to learn about the schools' culture, about what oppresses school administration, teachers and students. He or she might gain an impression of language used, metaphors, social cooperation, individuals' hopes and fears. Due to the researcher's capability of perception, he or she gathers a very detailed and complex knowledge base. Putting this into the frame of a case study requires a phenomenological process of thinking.

3.0 Case Studies drawn from DBR Background

In the following we want to present illustrative (not necessarily exemplary) sections of case studies that have been developed with reference to different DBR project(s), the latter one(s) carried out with vocational schools in North Rhine-Westphalia. Due to the limitation of this contribution we will not present case studies as a whole. Rather, we want to point out possibilities of the case study development with reference to Reetz' criteria (see above). This requires a short introduction to the underlying DBR project(s) and the university class for which the case studies were constructed.

3.1 Project Background(s): Personalized Learning within the Field of School-Based Prevocational Training

The background of the developed case studies is a DBR programme⁶ focusing on the challenges of personalized learning within the field of pre-vocational training at vocational schools in North Rhine-Westphalia. Students in these classes are very heterogeneous (educational and cultural background, students with special needs). They often have to cope with different social and personal problems (at the same time). In addition, many students are (directly or indirectly) affected by violence, unemployment and/or consumption of alcohol/drugs. Furthermore, most of them failed to manage the transfer from school to work life. This again leads to frustration and the ongoing challenge of vocational orientation (Frehe 2015, 20).

Accordingly, teachers face the challenge to encourage and motivate these students to attend school in the first place. In addition to this ongoing task, teachers need to point out possible and achievable learning paths and occupational careers. Having in mind the students' various conditions and needs, this becomes a major challenge. Both personalized and subject-orientated curriculum development as well as the design of instructional instruments are required. Within conducted DBR projects, the researchers discovered and suggested particular strategies and instruments to cope with these challenges. For instance, the researchers came across a very popular practice phenomenon called 'Tageslernsituationen' – an innovation developed by teachers for teachers (Frehe-Halliwell & Kremer 2020). Another example are 'Qualifizierungsbausteine', an instrument anchored in the German Vocational Training Act (BBiG), that seemed to hardly play a role in the teachers' everyday teaching (Frehe-Halliwell & Kremer 2018).

It becomes obvious that one teacher on his or her own cannot cope with this conglomerate of challenges. Rather, it is necessary that the teaching professionals from different backgrounds (school subjects, professions in the field of social and special education etc.) work together in teams. Teacher cooperation on a level underneath school administration on the one hand, and below single classes on the other hand is called 'Bildungsgangarbeit' (Buschfeld 2002, Sloane 2010a). On this level, teachers make decisions and define competence profiles in a discursive process. Furthermore, they develop school-based curricula tailored to the students' needs. Afterwards, the contents which were decided upon are planned down to details in terms of time and organisation throughout the school year. Single learning situations in lessons are built on this preparatory work and provide categories for an overall evaluation of the 'Bildungsgangarbeit'.

⁶ DBR programme means that a number of DBR projects have been conducted consecutively, which were all facing the same overall practical challenge (here: personalized learning within the field of school-based pre-vocational training), but with slightly different substantive focus. We are focusing here on the projects InBig and QBi. To find more information about the projects, see Kremer & Beutner 2015 (InBig) and Frehe-Halliwell & Kremer 2018 (QBi).

3.2 Teacher Training at the University

The researchers of the DBR programme (as referred to above) were also responsible for a Bachelor seminar in teacher education for vocational schools. The main learning content contains two aspects and their relation to one another:

- a) Getting to know different target groups of vocational orientation, particularly sensitization for the target group in classes of the pre-vocational field
- b) Introduction to the concept and process of 'Bildungsgangarbeit'

The university module contained three elements: lecturing, tutored literature studies and a workshop. While lecturing and literature studies built the theoretical basis, the workshop was supposed to offer a complex learning environment where students would have the possibility for problem-based learning and deepening their knowledge through working on a case study (inductive approach).⁷ The case studies are paper-based. This coherent document enables the students to immerse themselves gently into 'their practice'. They contain background information, samples of communication, descriptions of situations and feelings but, also irrelevancies. Additionally, the document contains advice on structuring work, keeping timelines and splitting subtasks among the group.

⁷ Within the last semesters, different case studies have been developed. We will refer to their particular illustrative sections within this chapter without being able to present all case studies as a whole.

3.3 Case Studies as Narrative Originals in a Scientific Setting

Over the years, different case studies towards similar practical problems have been developed within the framework of 'personalized learning' and 'pre-vocational system'. At this point, we will only sketch these practical problems. More detailed, we will illustrate ways of developing authentic case studies. Therefore, we draw on Reetz' criteria of developing case studies. However, we will not work through each single criterion, but rather present 'examples of realization' and relate them to our theoretical basis.

Getting in touch with a vocational school:

As pointed out earlier, it is very important that the case study addresses the students directly. It should build upon an authentic and plausible event. In our case studies, the students find themselves in the role of student teachers or young teachers who have to work as a team on a given problem. In their role they become teachers within the pre-vocational 'Bildungsgang' among others in a vocational school.⁸ However, the students of the seminar have only limited experiences with vocational schools so far. In addition, vocational schools differ a lot due to the occupational field they focus on, the school culture, the region the school is in etc. To give the students an impression of 'how their school works', they are confronted with a screenshot from the school's homepage as a first orientation.

⁸ In North Rhine-Westphalia, the Bildungsgang for the pre-vocational field is called 'Ausbildungsvorbereitung'. It has its own syllabus and can be further differentiated in classes or learning groups.



Figure 2. Screenshot Case Study (1).

This picture not only contains information about the schools' structure. It also shows at first sight what seems to be important to the school and their members (here: openness and discussion, future-orientation, regarding diversity as a valuable asset and so on).

School phenomena as starting point

As a temporal and organisational framework, we use the school phenomenon 'pedagogical day': During a school year, the school administration determines a whole day without lessons where teachers have the opportunity to work together conceptually. In general, each pedagogical day focuses on a common theme, such as 'culture of school', 'digitalization' or 'quality assurance'. This holds the advantage that the time structure in the case is congruent with the time structure of the workshop day in the seminar.

Against this background, the case study starts with the headmaster's email to the teaching staff inviting them to the upcoming pedagogical day. The email intentionally addresses very roughly the overall goal: Creating a pedagogical concept towards the subject of the 'pedagogical day' within one day. The teacher groups' results shall be presented within the next school conference. At this point, a first exchange in the student group is wanted regarding the following questions: What is our task? What is relevant for us? What is irrelevant? What further information do we need?

PÄDAGOGISCHER TAG: ‚DIGITALISIERUNG‘



...kurz vor den Pfingstferien

Gemeinsam mit einigen anderen jungen Kolleg*innen bilden Sie derzeit das Bildungsgangteam der Ausbildungsvorbereitung im Fachbereich ‚Wirtschaft und Verwaltung‘. Sie sind gerade dabei, Konzepte zur Inklusion und Integration junger Geflüchteter umzusetzen und stehen hier vor großen Herausforderungen. Aber Sie haben sich im Bildungsgangteam gut zusammengefunden, eine gemeinsame Arbeitsbasis geschaffen und sind guter Dinge, dass Sie die aktuellen Herausforderungen gemeinsam auch gut bewältigen werden. Das Schuljahr ist nun fast um und Sie freuen sich auf ein Durchatmen in den Pfingstferien, bevor die ‚heiße Phase‘ mit Prüfungen, Zeugniskonferenzen und Abschlussfeiern startet.

Wie in jedem Jahr versendet Ihr Schulleiter Herr Stroot den schon berühmt berüchtigten ‚Feriengruß‘, der in der Regel lobende Worte für das Kollegium enthält und ihnen eine schöne unterrichtsfreie Zeit wünscht. Gleichzeitig sind seine E-Mails bekannt dafür, dass sie (neue) Arbeitsfelder adressieren. Die Kolleg*innen scherzen bereits im Vorhinein, welche „neue Sau wohl diesmal durchs Dorf gejagt wird“. In der letzten Schulwoche vor den Ferien erhalten Sie folgende E-Mail von Herrn Stroot:



©Petra Frehe (2018)

Seite 1

Figure 3. Screenshot Case Study (2).

Creating atmosphere

The introducing text (see above) not only informs about the inbound email, but also illustrates the current situation of the teacher group: They have already been working together on other projects, the end of the school year with different tasks and duties lies ahead and, additionally, they have to cope with ‘the headmaster’s traditional school-holiday wishes’ that always contain a new project/task. Here, the overload and time pressure of teachers often observed in DBR projects is absorbed. Metaphors used by teachers underpin this picture. They

also transfer a certain attitude of teachers towards new features or innovations planned. A statement such as “Welche Sau wohl diesmal durch’s Dorf getrieben wird”⁹ illustrates the reluctance of teachers who observe that new challenges frequently have priority although they cannot even manage the latest challenge to their satisfaction.

⁹If you are interested in the case studies itself, please contact the authors of this paper. We are happy to share these documents with you.

Confrontation with different opinions

Students will eventually experience that real life at schools has more than just one ‘truth’. Actually, daily school life is full of different understandings, opinions and perspectives. It is the student’s task to develop his or her own positioning towards a concept. In our case studies, we confront the students with different statements. This is a way of focusing on a certain theme like ‘digitalization’. Furthermore, this illustrates the various facets of a concept. The case study prompts the students to discuss these teacher statements, to complete them, reveal contradictions, and to agree on a conceptual basis for the further process of the case study.

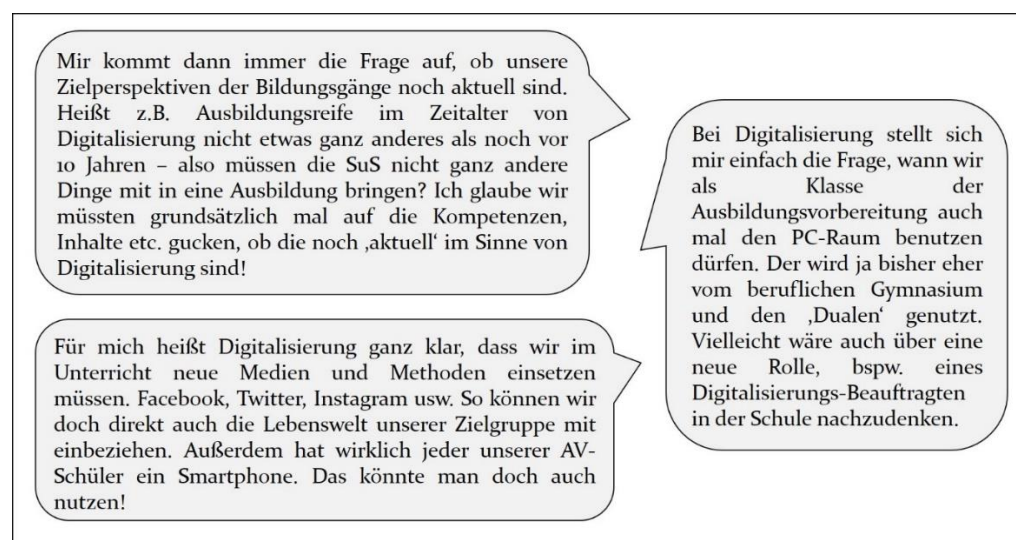


Figure 4. Screenshot Case Study (3).

So far, we could offer you an insight into the case study as a product (of the researcher’s thinking as a university teacher for vocational education) and its reflection based on the criteria of Reetz (1988). What we now would like to focus on is the idea that each narrative text product implies a history of development. The case study therefore is to be seen as a (still ongoing) process of narration. We cannot know how this process is going to be developed in the future. But what we can turn towards is its development so far. Here, we would like to address the researcher’s perspective and ask how the development of a case study was entangled with the overall DBR project. Thus, we will show that the case study is of methodological relevance, too.

3.4 The Case (Study) as a Central Element for Epistemological Understanding in DBR

What we would like to point out here, is the relevance of case studies on a structural level of design-based research. For this, we once again turn towards the concrete case study mentioned above and look at it from a process-related perspective:

The monitoring research group together with the practitioners of the school found out that the didactical approaches normally used in the VET school system did not fit the needs of the pupils in the “Übergangssystem”. In several workshops researchers and practitioners adapted the usual didactics to the special needs and thus the “Tageslernsituation” arose. At the first glance, it just seems to be a new instrument for teaching developed by practitioners, but at the second, it tells you a lot about the people who invented and applied resp. implemented it, the pupils it is developed for, the VET system in Germany and so on. It marks the starting point of a phenomenon (1) without revealing it at this point.

The researchers, not only being researchers, but also teachers in higher education, asked themselves to what extent it would be possible to use this newly discovered instrument in order to teach their students, or in other words: to allow the students to get an insight into the VET school system, its structures, working techniques, ways of communications, and so on. Bearing this in mind, the researchers/higher education teachers underwent a reflection of the “Tageslernsituation” focusing on the educational implications for the VET students (2). It was then decided to use the instrument as the linchpin in a case study which then should be worked with by the VET students at the University of Paderborn (3). Although the case study was traditionally designed as a didactic by-product in the DBR project, it soon became apparent that the researchers themselves got involved into a learning process when developing the case study. They not only had to think thoroughly about what they had experienced at school (as their field of research), but also about what of it was worth becoming part of the case study and how it had to be verbalized. The latter point was not that easy to decide upon as it seemed important to find a balance between the language used at school, the one they expected the students to understand and also to be able to connect this with the scientific language and standards. Interestingly, the researcher in their role as higher education teachers had to re-think their experiences under a new perspective which required from them to focus on the student’s learning perspective. Through this, they needed to find other ways of expressing themselves and their experiences than the ones they had been using in the research process so far as they now had to cope with a group of students who had not been part of the ongoing research process. At the same time, they felt obliged to the practitioner’s field of action wanting to allow the student to get an authentic insight into the research experience. The necessity to think about ways

of expression and at the same time being authentic led to the researchers re-thinking about the most important situations they had experienced so far during the research process. They thought about the details that accompanied these situations, the atmosphere, how people interacted, what they said and what not. At the same time, they also had all their findings in mind from the interviews, the surveys, and the workshops conducted so far. In this way, two things happened: First, they found a way of writing a case study. It contradicts the “usual” way of saying things in research in a manner that the situations verbalized for the case study rather tried to get a grip on the atmosphere experienced than on factual information. Second, through re-verbalizing their experiences the researchers got a new perspective on what had happened in the research process so far (4). The phenomenon “Tageslernsituation” became “richer”: Whereas in the research process details of the *context* are analysed in surveys and interviews or through other research methods applied, it is the getting-it-all-together in the case study which opens the researcher’s view on the phenomenon as a whole. It is also here that details are under observation, but the details themselves differ. It is the *subtext* which accompanies each and every context, but which is not as easy to get a grip on as this usually describes what is not there, what cannot be explained through the context (like social status, matters of biography, hierarchical structures, etc.). In this way, the case study can be interpreted as a narrative of the original field of experience. Everything that allows a foreign person to understand the atmosphere also helps the researcher to enlighten his view on the phenomenon. The plea here is: Be in love with details, use pictures and everything that illustrates the environment, and what should be told! Or: Do not set limits! Everything is possible! This shows that a narrative in this sense can certainly be fictitious, but is always in relation to the experienced lifeworld, the “Wirklichkeit”, and is therefore not invented, but experienced history. In the end, the phenomenon will just show itself, will just get into life, through the researcher’s ability to verbalize it in an original narrative. Naturally, its meaning beyond the single case is of the highest interest for the researcher. But here another story starts: the narrative’s translation which we could give hints to, but shall be in the centre of interest at another time. The message of this article thus is as follows:

Researchers who are interested in the development of structural knowledge must be both narrators and translators, but first and foremost artists, because the language will hardly reveal the magic of the word without the ability to produce pictures and create atmospheres¹⁰.

¹⁰ Here, reference is made to the poem “Magic” by Rainer Maria Rilke, which uniquely emphasizes the importance of art and its ability to create an atmosphere in which things become possible that are doomed to failure outside artistic practices.

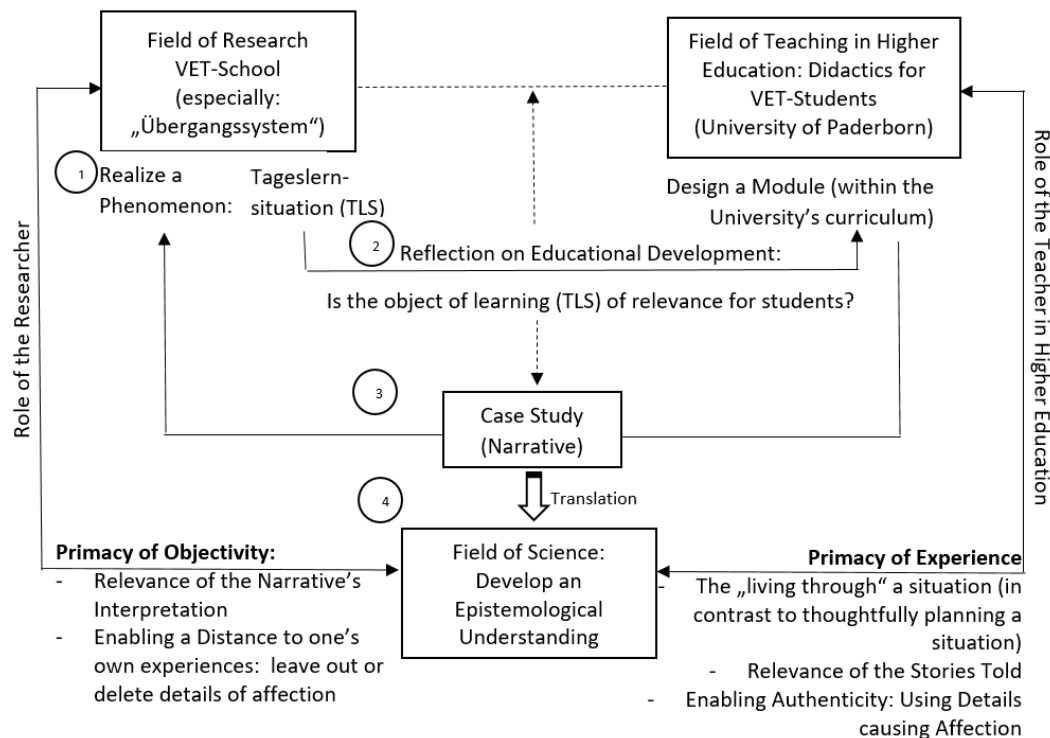


Figure 5. The Central Position of the Case (Study) as an Original Narrative in the Process of Epistemological Understanding.

This chart (5) is not to be understood as a recipe telling you the exact steps when to work with or think about a case study in DBR. It is an illustration showing the relevance of case studies on a methodological level of DBR. Of course, it now would be interesting to think about the type of knowledge which is developed here focusing on the question what is actually meant when we speak of “structural knowledge”. But, this again, would be the starting point for a new article.

4.0 Summary of Conclusions

In this chapter, we try to exemplify the realization of case studies drawn from underlying DBR projects. However, we only consider selected sections of case studies. This of course makes it more difficult to comprehend the structure and progression of a single case study. Still, we choose examples that show typical elements, milestones and methods that condense in most of our case studies. It was our objective to illustrate how the involvement in practice as a researcher (simultaneously being a university teacher) represents tremendous progress in the process of creating authentic case studies. We rather neglected the instructional implications of case studies, as it was not in our interest to present an example of a good (high quality) case study.

To paraphrase Benjamin (see Emmeler & Frehe-Halliwell 2020, this issue), it is very important to sense the underlying atmosphere and subtext: It seems very important to pick up things apparently irrelevant and to adapt them to the language of the case study's context in order to create atmosphere, to transmit feelings and so on. This is quite a

creative process. The developer reflects on the underlying DBR projects in 'another direction'. This is an opportunity to gain different perspectives, to generate alternative impressions and interpretations of situations and behaviour, to make the overlooked visible. This again can be of crucial benefit to the researcher's knowledge and maybe professionalization in order to understand the world of practice.

Therefore, we included and applied Benjamin's theories from the field of arts and creativity on the one hand (see: Emmler & Frehe-Halliwel, this issue). With this it was possible to get an overview of the actions and competences connected to writing a case study as an (original) narrative and to get also an idea about what it means to translate this case study in the process of knowledge making. Applying Benjamin's work on the writing of case studies in DBR is to be understood as a reflection on the methodical work of the researcher. Therefore, our contribution is not to be understood as a method, but a methodological idea on a conceptual basis. On the other hand, we presented parts of case studies to illustrate ways of authentic case study development. Here, it becomes obvious that our methodological approach by all means has an impact on the researcher's actions as such, though not proclaiming to be a method. Yet, this is not a surprise if one keeps in mind the correlation between methods and methodology as such (Sloane 1992).

Against this background, we are now developing further assumptions as a starting point for a methodological discussion towards the role of 'creative development processes' within DBR projects.

In the tradition of research on vocational education and training under a humanistic paradigm, there are different figures of argumentation (Sloane 2010b, 368 ff.). They describe the process, direction or focus of thinking about the research objective.

- (a) In hermeneutics, the author develops and explores a concept, text, situation etc. on the basis of his or her prior knowledge. By reading the text, experiencing the situation and so on, he or she achieves a higher level of understanding. This is an ongoing circular process that is supposed to lead to deeper understanding. What, at this point, has not been considered yet, is the question what types of (structural) knowledge are developed through the application of case studies, whether there are different types of knowledge at all, and how the experience of writing case studies has an impact on the development of the prototype, possible design principles and the research results.
- (b) From a dialectic point of view, the researcher is actively looking for opposite perspectives on an object. In that way, he or she obliges himself or herself to see things differently, to formulate antitheses. In confronting a thesis with an antithesis, a synthesis may emerge as one possible solution. Thinking in contrasts becomes essential to the practice of analysis. But it should be kept in mind that this is only one thesis. It might also be possible to develop results where a synthesis is not possible

or sensible. This leads to the questions how the researcher's thinking is connected to the writing of case studies, which kind of space is opened by the development of a case study in research, and how this space can be described.

- (c) From a phenomenological perspective, the aim is to uncover the 'substantial core' of the research objective (phenomenon). The main strategy is to distinguish the relevant from the irrelevant and to neglect the irrelevant. However, it is not always clear from the beginning what is (ir)relevant. Also, the didactically motivated development of an authentic case study includes a phenomenological strategy. This becomes plausible with regard to the principle of 'didactical reduction'. Didactical reduction cannot be realized by simply shortening/reducing practical problems. Rather, it is important to maintain the situations' holistic and problematic nature and authenticity. Surely, the question what fosters authenticity has not been under consideration here. And, looking at modern theories of arts, it must be stated that this is a question which has been asked since the development of Aristotle's "Poetic". Still, the different type of writing which is connected to the production of a case study should not be ignored but be seen as a medium of learning for the researcher.

From our point of view, approaching a research process from a creative point of view could be an additional way of thinking and in this way contributes to the enrichment of the phenomenological perspective:

- (d) Thinking about a research objective in a creative way means creating. To say it with Benjamin, it is not about a one-to-one translation, but about creating something new ('original') which still relates to the experience, situation etc. which it is built on. This is what happens when creating a case study. In contrast to the clear, distanced and precise language the researcher normally uses, the case study requires the context's 'irrelevances': details, description of the 'side stage', using metaphors and practice's contradictions. This thinking in terms of 'irrelevancies and details' might also have an impact on making the relevant visible.

Summarizing, we propose to consider creative processes (as narrating and translating) as strongly connected to research processes. In accordance with that, the development of case studies would not be the only possible creative product. One could also think about creating paintings, comics, role plays and so on. Technically, there is no limitation of creative products.

We are aware that the assumptions and suggestions of this contribution might be unusual, yet quite far-reaching, but at the same time also subject to limitations:

- (1) First of all, authenticity is a concept which is hard to get a grip on. From this point of view, we do see the restriction of what is presented in a case study which can vary from what can be experienced by future teachers in their university seminars. At

this point, we have to accept that the connection between the actions of the researcher (or the teacher) to make a case study authentic and how it is received is not understood at all. We have clearly found some hints which seem to help to create authenticity like the use of language (and others). But how these aspects are connected to the idea of authenticity, let alone to understand the concept of authenticity itself, is an open desideratum.

- (2) Our discussion is embedded within a methodological level. This means that undertaking creative processes in order to gain deeper knowledge should not be interpreted in a methodical way at this point. It is not our intention to force every DBR researcher to develop a case study as a determined step of analysis.
- (3) We understand that the impact of didactical case studies on gaining knowledge within a DBR project is not directly observable. We can only assume that a creative way of thinking about the research object might lead to deeper knowledge and therefore to 'better' results of research (output of research). By the way, this also applies to humanistic strategies of thinking (see above).

Developing case studies against the background of a DBR project is like a learning environment for the researcher himself or herself. He or she gains competences in observing and understanding the world of practice. The researcher has the opportunity to learn how 'practice works'. This is a major aspect with regard to the researcher's process of professionalization in DBR projects. This again builds on the assumption that being a DBR researcher requires the *process of becoming* a DBR researcher. The learning opportunity and possible development of competence is what we summarize under the term of 'outcome perspective'. According to our contribution it might be worth thinking about the relevance of creative processes not only for DBR, but in order to be able to get an orientation in a world which, at first glance, seems to be strange as such. Creativity does not come naturally to humankind although everybody is technically able to learn to be creative. This then provokes the question how creativity could become part of the researcher's professional development.

5.0 References

- Benjamin, W. (1991). Charles Baudelaire. Tableaux Parisiens. Deutsche Übertragung mit einem Vorwort über die Aufgabe des Übersetzers. In T. Rexroth (Hrsg.), *Walter Benjamin – Gesammelte Schriften IV-I* (S. 9-21). Frankfurt a. M.: Suhrkamp.
- Buschfeld, D. (2002). Konditionen beruflicher Bildungsgänge. Theoretische Fundierung eines berufs- und wirtschaftspädagogischen Konzepts. Köln.
- Emmler, T. (2015). Rezeptive Textproduktion – Produktive Textrezeption. Die Bedeutung (selbst-)reflexiver Textarbeit im Design-Based Research und ihre Implikationen für die Entwicklung von Innovationen im sozial-ökonomischen Kontext exemplarisch an der Gestaltung eines Forschungsportfolios umgesetzt. Detmold: EUSL.
- Frehe, P. (2015). Auf dem Weg zu einer entwicklungsförderlichen Didaktik am Übergang Schule – Beruf. Eine designbasierte Studie im Anwendungskontext. Detmold: EUSL.
- Frehe-Halliwell, P. & Kremer, H.-H. (2020). Tageslernsituationen (TLS) – Ein Format zur lebensweltorientierten Didaktik in der Berufs- und Ausbildungsvorbereitung? Potenziale und Grenzen eines Praxiskonzepts. In: *bwp@ Berufs- und Wirtschaftspädagogik – online*, Ausgabe 38, 1-25. Online: https://www.bwpat.de/ausgabe38/frehe-halliwell_kremer_bwpat38.pdf (24.06.2020).
- Frehe-Halliwell, P. & Kremer, H.-H. (2018). Anschlüsse eröffnen, Entwicklungen ermöglichen. Qualifizierungsbausteine inklusiv in einer dualisierten Ausbildungsvorbereitung. Reflexionen und Ergebnisse aus dem Forschungs- und Entwicklungsprojekt QBi. Detmold.
- Gerholz, K.-H. (2009). Das Forschungsportfolio – Ein Dokumentator und Reflektor im Rahmen von qualitativen Sozialforschungsprozessen. In H.-H. Kremer & P. F. E. Sloane (Hrsg.), *Paderborner Forschungs- und Entwicklungswerkstatt. Aktuelle Fragestellungen aus wirtschaftspädagogischen Promotionsprojekten. Band II* (S. 65-88). Paderborn: Eusl.
- Kaiser, F.-J. & Kaminski, H. (1999). Methodik des Ökonomie-Unterrichts. Grundlagen eines handlungsorientierten Lernkonzepts mit Beispielen. Bad Heilbrunn: Klinkhardt.
- Kremer, H.-H. & Beutner, M. (2015). Individuelle Kompetenzentwicklungswege: Bildungsgangarbeit in einer dualisierten Ausbildungsvorbereitung. Ergebnisse und Reflexionen aus dem Forschungs- und Entwicklungsprojekt InBig. Detmold.

- Reetz, L. (1988). Fall und Fallstudien im Wirtschaftslehre-Unterricht. *Wirtschaft und Erziehung*, 5, 148-156.
- Sloane, P. F. E. (2018). Evidenzbasierte Didaktik – Das ‚What works‘-Phänomen. In *Zeitschrift für Berufs- und Wirtschaftspädagogik (ZBW)*, 114/3, 353-362.
- Sloane, P. F. E. (2014). Wissensgenese in Design-Based-Research Projekten. In D. Euler & P. F. E. Sloane (Hrsg.), *Design-Based Research. 27. Beiheft der Zeitschrift für Berufs- und Wirtschaftspädagogik* (S. 113-139). Stuttgart: Franz Steiner.
- Sloane, P. F. E. (2010a). Prozessbezogene Bildungsgangarbeit in der kaufmännischen Bildung – Ein Designprojekt zur Sequenzierung. In J. Seifried, E. Wuttke, R. Nickolaus & P. F. E. Sloane (Hrsg.), *Lehr-Lernforschung in der kaufmännischen Berufsbildung – Ergebnisse und Gestaltungsaufgaben* (S. 27-48). Stuttgart: Franz Steiner.
- Sloane, P. F. E. (2010b). Berufsbildungsforschung im geisteswissenschaftlichen Paradigma. In R. Nickolaus, G. Pätzold, H. Reinisch & T. Tramm (Hrsg.), *Handbuch Berufs- und Wirtschaftspädagogik* (S. 367-373). Bad Heilbrunn.
- Soeffner, H.-G. (2004). Auslegung des Alltags – Der Alltag der Auslegung. Zur wissenssoziologischen Konzeption einer sozialwissenschaftlichen Hermeneutik. 2., durchgesehene und ergänzte Auflage. Konstanz.
- Zoyke, A. (2012). Individuelle Förderung zur Kompetenzentwicklung in der beruflichen Bildung. Eine designbasierte Fallstudie in der beruflichen Rehabilitation. Paderborn: EUSL.

Author Profiles

Petra Frehe-Halliwell is a university professor for vocational education and training in the field of business administration and economics at the Friedrich Schiller University of Jena, Germany. In her research, she draws on design-based research (DBR) from a qualitative-reconstructive perspective. Particularly, she focusses on contemplating the development process of prototypes as an anchor point for research, but also as an opportunity to develop research interests linked to but going beyond the prototype-development. Petra Frehe-Halliwell has been engaged in several DBR-projects together with vocational schools, especially working on prototypes to facilitate personalized learning and vocational orientation for youth in disadvantaging circumstances. Currently, she is interested in the exploration and comprehension of school-based curriculum-development within teacher teams.

Tina Emmmler is a postdoctoral research fellow and lecturer at the Department for Business and Human Resource Education at the University of Paderborn, Germany. Her research is characterized as empirical-phenomenological and focuses on designing innovations and its connection to knowledge management in the context of vocational education and training. Since she conceptualizes knowledge building processes as highly divergent and creative, Dr. Tina Emmmler also conducts transdisciplinary research in which she examines the meaning of aesthetic theory for the understanding of knowledge building. Here, she draws on her expertise as actress, stage director, and coach in the field of cross-theatrical learning and teaching.

Author Details

Prof. 'in Dr. Petra Frehe-Halliwell
Lehrstuhl für Wirtschaftspädagogik
University of Jena
Carl-Zeiß-Straße 3
Germany
+49 3641 9-43332
petra.frehe@uni-jena.de

Dr. Tina Emmmler
Wirtschafts- und Sozialpädagogik
University of Paderborn
Warburgerstraße 100
Germany
+49 5251 60-3292
Tina.Emmmler@uni-paderborn.de

Editor Details**Prof. Dr. Tobias Jenert**

Chair of Higher education and Educational Development
University of Paderborn
Warburgerstraße 100
Germany
+49 5251 60-2372
Tobias.Jenert@upb.de

Journal Details

EDeR – Educational Design Research
An International Journal for Design-Based Research in Education
ISSN: 2511-0667
uhh.de/EDeR
#EDeRJournal (our hashtag on social media services)

Published by

Hamburg Center for University Teaching and Learning (HUL)

University of Hamburg
Schlüterstraße 51
20146 Hamburg
Germany
+49 40 42838-9640
+49 40 42838-9650 (fax)
info.hup@sub.uni-hamburg.de
hup.sub.uni-hamburg.de

In collaboration with

Hamburg University Press

Verlag der Staats- und Universitätsbibliothek Hamburg –
Landesbetrieb
Von-Melle-Park 3
20146 Hamburg
Germany
+49 40 42838 7146
info.hup@sub.uni-hamburg.de
hup.sub.uni-hamburg.de