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The educational technologist as a change agent for innovation at
a German school
An auto-ethnography in the form of a dialogue

MA thesis

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Abstract

The purpose of this thesis is to get to the core of the perceived stagnation of reform initiatives at German secondary schools with regard to the implementation of digital technologies as a form of innovation. As global education research and political consensus since the 1990s agree that the reform processes in educational systems can only succeed at the level of schools, the focus has shifted from forced national reforms to supporting local change agents to implement innovations. However, despite several promising research projects, there were no concise and comprehensive research results which combined the undertaking of implementing an innovation at schools and digital technologies as the innovation to be implemented. Trying to close this research gap and connecting it to the claim of needing local change agents to be successful, this research paper resorts to the auto-ethnographic approach to analyze the impact of an educational technologist as a change agent for innovation. The preceding literature research has also pointed out the special role of teachers as stakeholders, who are slowing down the process of change. However, so far research fails to provide precise conclusions about the reasons for these barriers and what changes need to be made to overcome them. Through the personal account of the educational thesis and an interdisciplinary analysis of this data, the thesis therefore offers conclusions and actions to be taken in order for schools to be successful in their responsibility of permanently adapting to change.

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1 Introduction

„I may have exaggerated somewhat in order to make plain the typical points of the old education: its passivity of attitude, its mechanical massing of children, its uniformity of curriculum and method. It may be summed up by stating that the center of gravity is outside the child. It is in the teacher, the text-book, anywhere and everywhere you please[,] except in the immediate instincts and activities of the child himself.“ (Dewey, 2017)

To everyone who has been engaged in the field of educational technology for quite a while, thoughts on traditional education like Dewey’s might not be groundbreaking or even surprising as the call for a *New Learning Paradigm* and a shift in education seems to be strongly connected to this field’s responsibilities. (Reigeluth & Joseph, 2002; An & Reigeluth, 2011; Aslan & Reigeluth, 2013; Lorenz, Kikkas & Laanpere, 2014). However, the year of the e-book’s publication is misleading, since the first edition of Dewey’s pioneer work was already published in 1899. More than 120 years later, Dewey’s description of the 19th century American public school still feels valid on a global scale and definitely bears a striking resemblance with everyday life in the majority of German public schools. But in contrast to the industrial age, which mainly asked for workers who would perform manual and repetitive tasks (Reigeluth & Joseph, 2002, p. 9), our information age increasingly demands complex “cooperation, higher-order thinking and problem-solving skills” (An & Reigeluth, 2011, p. 54), which is in stark contrast to what traditional education was originally set up to attain.

How is it possible that our students are growing up in an utterly distinct society, but have – for generations – been taught by principles of the 19th century? How come, using Dewey’s image, the gravity of education does still not lie inside the child? And how does educational technology add to the equation? These are the central questions this thesis is trying to approach.

But answering these questions is a complex undertaking for several reasons. On the one hand, even politics are struggling to find a successful path to reform schools sustainably. For several decades, from the 1950s to 1990s, they tried to force schools to implement reforms through large-scale national agendas until researchers realized the lack of success and sustainable results. (Fullan, 2015, pp. 6f; Rürup, 2008, pp.17ff) Additionally, German federalism exacerbates national reform initiatives severely as the 16 federal states insist on their independency with regard to educational laws to an extent that reforms even had to be revoked on a national scale. (Rürup, 2008, pp. 18ff) Eventually, educational research in the 1990s increasingly suggested that successful and sustainable changes could only be achieved if implemented in a meaningful and non-imposed manner on local levels within the schools themselves. However, working this individually and on such a small scope promotes its own challenges regarding broad reforms. (Fullan, 2015, p. 11)

On the other hand, the field of education consists of too many stakeholders who all have different expectations of education and rarely share the same perspectives. Politicians or researchers might feel teachers are resistant to any form of change, whereas teachers complain about the lack of insight and practicability of initiatives. (Fullan, 2015, p. 3; Rürup, 2008, p. 17)

Educational Technology is not a branch of research which has solutions to all of these struggles, but it seems to have a distinct interest in reforming education in order to come closer to the core vision of designing an education system that enables all of the students to actively and securely participate in our information age society. (Reigeluth & Joseph, 2002, pp. 9f; MoER, TU & UT, 2017, pp. 3ff). Therefore, research in this domain consequentially asks for what the barriers to educational reform are and how they might possibly be overcome. (An, & Reigeluth, 2011; Aslan & Reigeluth, 2013, p. 23; Lorenz, Kikkas, & Laanpere, 2014, pp. 293ff) An important role with regard to these issues seems to be imposed on the *educational technologist* who is considered as one of the local change agents, due to their ability to take on many different roles in the process of implementing innovations at schools and their dynamic mindset. (Lorenz, Kikkas, & Laanpere, 2014, p. 295; Corbeil & Corbeil, 2013, p. 345)

For the sake of completeness, it also needs to be mentioned that tackling the project of reforming our schools is not exclusive to the field of educational technology. (Rürup, 2008; Feldhoff, 2011; Goldenbaum, 2012) Some stakeholders might even insist on reforming the educational system first and then thinking about how technology belongs there, if at all. However, this thesis takes the stance that living in this kind of information age can only mean to integrate modern technologies and all their benefits and shortcomings into the process from the beginning. With regard to current social debates, there also seems to be a common consensus that reforming our schools is inextricably connected to the process of *digitalization* and the schools' lack thereof. (Kreisel, 2020; Wiarda, 2020; Engartner, 2020) Moreover, since the majority of research in the domain of educational technology suggests a comprehensive approach to educational reforms, instead of solely focusing on adding technology to schools' equipment, this angle seems to be a reasonable and promising access to initiate the change from traditional 19th to 21st century education. (e.g. Reigeluth & Joseph, 2002; Lorenz, Kikkas, & Laanpere, 2014; MoER, TU & UT, 2017; Herbst, Müller, Schulz & Schulze-Achatz, 2019) Therefore, when speaking of *the digitalization* throughout this thesis as the innovation to bring about change in schools, it always refers to the general agreement in the field of *educational technology* that there is a need for new ways of teaching and learning to successfully manage *the digitalization* and all its social, economic and cultural implications.

Yet, the field of educational technology also adds its very own complications to the complexity of answering the thesis' central questions as research and literature reviews still struggle to clearly

define the field of *educational technology* or the term *educational technologist*. (Corbeil & Corbeil, 2013, pp. 338f; Jenkins & Rossett, 2000, pp. 52ff) Likewise research on what the educational technologist actually (positively) contributes to reform/change processes is still in its early stages. (Budiyo, Haryono, Utanto & Subkhan, 2018, pp. 51ff; Haryono, Utanto, Budiyo, Subkhan & Zulfikasari, 2019, pp. 76ff)

Taking all of this and the scope of this thesis into consideration, a narrow focus needs to be applied, which disregards the details of politics' influence, the complexity of federalism in German education and the broader network of administration schools are embedded in. Instead the thesis is going to concentrate on Fullan's assumption of needing to change schools from within. Hence, teachers and our school's administration, as the seemingly most influential stakeholders, will be the greatest concern of this research. Due to the methodological approach a particular focus will be placed on the teachers and their respective barriers to change, which are often discussed as the main reasons for failing reform initiatives. However, this thesis argues that the perspective of most of the associated research is insufficient to explain the teachers' barriers and therefore has not provided helpful guidance yet in overcoming these constraints. By adding interdisciplinary approaches to the analysis of the data at hand, the thesis hopes to offer new, practical insights. Even though parents and students are also important stakeholders in the educational change process, the data, the thesis refers to, do not yet provide enough information for a thorough analysis. However, their data has been added to the appendix (1) and is referred to in the analysis for basic assumptions.

The thesis further excludes a comprehensive discussion of different initiatives of educational change, but, in line with the lens of the field educational technology, chooses to explore the role of the *educational technologist* as an auspicious agent for the overdue change and innovation of schools. In the context of German public schools, the *educational technologist* themselves constitutes an innovation as the roles and functions at our schools are rather rigid and rarely leave any room for new interpretations or additional duties. Additionally, the German higher education system does not yet know of a professional training for becoming an *educational technologist*. Therefore, to the best of this researcher's knowledge, comprehensive research on the impact of educational technologists in the context of German school reforms is yet to be conducted. Consequentially, at this stage of research, one of the most promising and productive methods to gain insight and to disclose starting points for further research, seems to be found in the auto-ethnographic approach.

Putting it all in a nutshell, this thesis explores the narrative of a single *educational technologist* and her attempt at initiating the innovation and change of her school, which is a public German high school for higher secondary education (*Gymnasium*) located in the federal state of Saxony.

Whereas the first part of this thesis provides the main findings of the literature review and necessary background information on the methodology, the second part presents the auto-ethnographic narration of the *educational technologist*. Subsequently, part three reflects on this narration on the basis of the literature review's findings and considers implications for the further process of innovating the *educational technologist's* school. Finally, the thesis provides general conclusions that can be drawn from this individual course of action to initiate successful reform on a broader scale.

2 Theoretical Background

2.1 Literature Review

As the overarching question of this thesis is how the process of digitalisation can be successfully implemented at public schools with the help of educational technologists (from now on ET) as acting change agents, a few sub-questions have to be posed. If the digitalisation of our learning environments is seen as an innovation, how can schools manage the transfer of this innovation? Which role do single schools and teachers play in this transfer? If they play an important role, which competences and attitudes are enhancing a transition? And what are barriers to a successful adaption of an innovation? How can these barriers be overcome? And how can an ET help with all this? These sub-questions are also necessary as the extensive literature research has found no all-encompassing studies or comprehensive manuals/handbooks which solely focus on the implementation of digitalisation as an innovation for schools and the implications for all the stakeholders. Thus, the following literature review displays the results to the sub-questions and will be subdivided accordingly.

2.1.1 Managing the Transfer of Innovation at Schools

Starting the research the search string soon had to be broadened from the terms *the digitalization process at schools* to *innovation in educational institutions* as the results came back negative for the German context.

However, since the approach to reforms at schools has changed in the 1990s extensive research has been conducted on innovation cycles and their implementation processes in an educational context. Despite the diverse nature of educational systems, the global literature generally agrees that reform processes at schools have gone through an immense change since the 1950s. Whereas governments for several decades have tried to induce change through national reforms and initiatives (top-down, external process), they acknowledged their failure in the 1980s and agreed in accordance with educational researchers that the reform process only works in the hands of the schools themselves

guided by national recommendations (bottom-up, internal process). (Fullan, 2015; Goldenbaum, 2012; Berkemeyer, 2007; Jäger, 2013; Koch, 2011; Rürup, 2008; Idel, 2008) This is why research is now focused on the innovation process itself to grant schools guidance and increasingly focuses on the teachers as the actual change agents.

During the research it became clear that Michael Fullan is a well-established pioneer in this field, having contributed to this research area of change in education since the early 1990s and being cited in global literature as the main source for theoretic models for educational change. (cf. Koch, 2011; Rürup, 2008) Fullan (2015) points out that change is brought about by an innovation and proceeds in three phases which are initiation, implementation and institutionalization. He provides detailed insights into all of these phases and even the different stakeholders and their motivation such as the *school district* administration, school leadership, teachers, students and parents.

This concept from the late 1990s was then adopted or used as reference in German research throughout the 2000s and early 2010s. Basically, German scholars tried to trace the ways of innovation in the German education system to point out which part of the system is the strongest change agent. Whereas Rürup (2008) provides general conclusions about institutional paths, other researchers look at specific examples and their ability to support change such as *establishing broad networks* (Koch, 2011), *using coordinating teams to develop schools* (Berkemeyer, 2007 & 2009; Feldhoff, 2011), *colleagueship and cooperation among teachers as a means to encourage progress* (Baum, Idel & Ullrich, 2012) or *the school as a learning organization* (Jäger, 2013; Feldhoff, 2011). The last concept, which was also first introduced to the field of educational research by Fullan, shows the tendencies to implement *theories of economy* into the educational context. Other prominent examples are the *diffusion of innovation theory* by E. M. Rogers, which basically is used in all German literature on innovation in schools (Rürup, 2008; Rürup & Bormann, 2012; Prasse, 2012; Burchert, 2012; Koch, 2011; Goldenbaum, 2012), and *concepts of change management* (Berkemeyer, 2009; Feldhoff, 2011).

Finally, this general literature on change in schools is complemented by national recommendations of different institutions with regard to the present and desired state of digital technologies at schools (Revermann, Georgieff & Kimpeler, 2007; Herbst, Müller, Schulz, & Schulze-Achatz, 2019; Wetterich, Burghart & Rave, 2014).

What all these publications have in common are two aspects. On the positive side, they all are successful in theorizing the process of innovation at schools and thereby grant several leverage points for further (research) action. On the negative side, there is a lack of explicit guidance in case of actually managing the change process and its constraints successfully with regard to digitalization and the increasing focus of teachers as the main change agents.

2.1.2 Stakeholders

Even though the aforementioned studies have also pointed out the important role of the principals or the school leadership in general, the significant responsibility of the teacher is evident. Koch (2011) for instance refers to the principal as the supporter of the teacher, which makes clear, that although the principal's behavior is crucial, it all comes down to the profession of the teaching staff. Other stakeholders such as parents and students will, due to the methodological scope of this research, only be reflected through the lens of perception of the teachers. Therefore, my literature research focuses on innovation or digital technologies in connection with teachers and excludes school leadership and administration except for Fullan's (2015) and Feldhoff's (2011) comprehensive works on educational change.

The research area which deals with the teaching profession is a vast field tackling the idea of innovation and digital technologies from various points of views. In an attempt to categorize the results of the research four different foci can be deduced:

- (1) *Studies which ask for general determiners of the ability and readiness to innovate*, focusing on institutional, personal or work related facilitators or constraints and thereby assessing the validity of theoretic models and instruments for measuring. (Burchert, 2010; Prasse, 2012)
- (2) *Studies which focus on two aspects that are associated positively with the successful implementation of an innovation*. The first aspect is life-long learning in the form of advanced vocational training. These studies are pointing out to the immense correlation of successful change and the willingness of teachers to attend further training, evaluate reasons for the lack of attendance in such trainings and the desolate state of further training options. (Eickelmann & Drossel, 2020; Richter, E., Richter, D. & Marx, 2018) The second aspect focuses on cooperation as the vital requirement for managing complex tasks in our present society and how teachers seem to have a special relation to cooperation due to organizational conditions such as the lack of hierarchy and lone warrior mentality. (Baum, Idel & Ullrich, 2012; Eder, Dämon & Hörl, 2011)
- (3) *Studies which indicate psychological or personal aspects of avoiding or resisting tendencies among teachers*. A special focus is set on uncertainty (Dillon, et al., 2019; Howard, 2013; Howard & Gigliotti, 2015; Howard & Mozejko, 2015; Reinders, 2018; Sugandini, et al., 2018) and disengagement (Schmitz & Voreck, 2011) or the general *habitus* of teachers (Blume, 2020).
- (4) *Articles and reports of surveys which present an overview of the cultural perception of digitalization and digital technologies*. These provide an idea of the German skepticism which surpasses the European average significantly (AcaTech & Körber Stiftung, 2019; Kirchner, 2019; YouGov, 2020) and the consequentially influenced skeptical attitude of German teachers

towards ICT (Revermann, Georgieff, & Kimpeler, 2007). Moreover, some articles indicate the problems arising from that skepticism and the increased social and economic demands by parents and companies (Schmitt, 2019; Petrich, 2017; Wiarda, 2020; Engartner, 2020; Kreisel, 2020).

All of this literature provides meaningful and enlightening insight into the complex aspect of teachers as stakeholders and potential change agents for innovation, especially with regard to the importance of cooperation and qualitative continuous training. They also point out certain weaknesses of teachers in this respect or structural constraints which impede successful cooperation and training. However, all of these studies tend to remain descriptive instead of asking for causalities or deeper reasons, which could offer conclusions for proactive and practical solutions. There always seems to be a distance to the teachers as the subjects of the research (Pröbstel & Soltau, 2012; Richter, Richter & Marx, 2018) or even an accusing tone with regard to how teachers are behaving without showing empathy (Blume, 2020). Both approaches do not seem helpful to attain meaningful tools for overcoming constraints and barriers within the teachers. The solution to this seems to be left to a different field of research.

2.1.3 Overcoming Constraints

In need of helpful and effective guidance the research was extended to the field of *organizational development*, *corporate* and *change management*, and *positive psychology*. It seems that companies have long felt the pressure of digital and social changes and needed to act more urgently in order to prevent economical damage. The structural changes in modern companies have led to new ways of managing businesses to create workplaces of the future which need to offer benefits for their employees and need to encourage life-long learning and cooperative teamwork. Along with these changes came new handbooks by successful cooperate managers or business consultants which offer many useful reference points for schools as well.

Four monographies seem to be particularly beneficial for a prospective analysis of the role of the teachers in the change process as they focus on cooperation and all its psychological pitfalls in the context of dependencies on the individual as a part of a tribe.

To begin with, *Tribal Leadership* by David Logan (2009) and Simon Sinek's *Good Leaders Eat Last* (2017) focus on the natural essence of human team building. Whereas Logan points out the stages of team work and the individual development each person needs to go through, Sinek refers to biological aspects of successful teams such as the evolutionary need for trust to be able to cooperate. Both authors provide so many details of how teams work that it facilitates the analysis of cooperation of teachers immensely by looking deeper at what the structures of the school system

actually do to the mental state of teachers. Stefan Merath (2017) combines such insights to a precise action plan for establishing and maintaining successful teams. Finally, Daniel Pink's approach completes the references with a focus on the individual and how they actually can thrive to add something valuable to a greater cause.

Of course, all four monographies lack the perspective of educational systems, but seem to be applicable anyway as educational research increasingly recognizes schools as organizations (Jäger, 2013; Feldhoff, 2011; Berkemeyer, 2009) and therefore they might work similarly to economic organizations. Hence, they might also respond similarly to tools which have been proven successful within the economy.

2.1.4 The Educational Technologist as the Change Agent

Educational technology as a distinct academic discipline is a rather young branch and therefore still struggles to define its associated terms and to assign competences. (Corbeil & Corbeil, 2013) Likewise there is still some lack of defining what the ET actually is and does (Corbeil & Corbeil, 2013; Budiyo, Haryono, Utanto & Subkhan, 2018).

However, early on in the discussion of educational technology and its stance on education, it was pointed out by researchers in the field that educational technology is more than integrating technology, but rather about equipping schools with the competences to face the challenges posed by the digitalization and the social changes induced through it. (Reigeluth & Joseph, 2002) This notion has been evolved into an educational concept that focuses on student-centered learning, creative problem-solving skills, collaboration and self-regulation to educate and grow self-directed and creative problem-solvers, who can work in teams to effectively solve complex tasks and are willing and able to constantly adjust to environmental changes. This concept is widely known as the *New Learning Paradigm* (Aslan & Reigeluth, 2013; Lorenz, Kikkas & Laanpere, 2014; MoER, TU, UT, 2017) and in the course of this thesis will be addressed as such.

Due to the complexity and perceived urgency of this overdue shift, the field of educational technology has put increasing value on the role of the ET as the change agent of this process. (Aslan & Reigeluth, 2013; Lorenz, Kikkas & Laanpere, 2014; Mayes, Natividad & Spector, 2015) Similar to the complexity of the process of change itself, the list of competences, skills and character traits assigned to this profession is extensive. But they all agree that the educational technologist is the advocate of the *New Learning Paradigm* and kind of a multi-talented handyman, who is responsible for analyzing the status quo, defining and designing a practical vision and identifying the constraints within the process to then present the tools to work on these constraints. (Corbeil & Corbeil, 2013) Thereby the pedagogical aspect is just as important as technological competences of the profession.

However, research has indicated that ETs can be a helpful asset for any kind of school within their change process induced by the digitalization (Budiyono, Haryono, Utanto & Subkhan, 2018), but their position also needs to be clearly defined within the school to be most effective (Lorenz, Kikkas & Laanpere, 2014).

2.1.5 Summary

As I have pointed out in the beginning the topic requires a rather complex and extensive research across various fields of study. Not a single study or research project has asked for how digitalization as a form of innovation shall be successfully implemented by teachers who have been indicated as the most important stakeholders with unique barriers to change processes. With regard to this last fact educational research so far has not come up with convincing solutions. This thesis therefore tries to add four new elements to the existing research: (1) It wants to combine the matter of digitalization and the available findings on the innovation and change processes at schools. (2) This process will be viewed from the angle of the educational technologist as a potential change agent. (3) Constraints and barriers will be analyzed according to results of research in the field of organizational development, corporate and change management and positive psychology. (4) As more traditional methods used in research on teachers such as surveys, interviews or literature reviews have only provided blurred accounts of teachers and their mental barriers, the methodological approached will be the auto-ethnography as described in the following chapter.

2.2 Methodology

As the course of this thesis so far has pointed out, getting to the core of the constraints and barriers in the process of change and adapting innovations as ambivalent as the digitalization, is a complex and eclectic undertaking. While it is important to understand the structures and dynamics of such processes from the outside, they pose their real challenge on the inside with regard to the human nature of their stakeholders.

In the case of the teachers it has to be said that schools and all their components are a highly researched field of interest, be it the history of all the institutions (Klemm and van Ackeren, 2015), learning theories (Pritchard, 2018), teaching methodology (Mowla, Rao & Sarojini, 2012) or the impact of students' emotions (Immordino-Yang, 2016) or their social status on their educational success (Gehrmann, 2018). Yet, teachers' attitudes, emotions and mindsets have barely been the objective of scientific research except in relation to students' achievements (Gershon, 2018). If teachers are the objective, researchers often try to shed light on their behavior and attitudes from the outside, by applying traditional qualitative or quantitative research in the form of surveys,

interviews or literature reviews. (Pröbstel & Soltau, 2012; Richter, Richter & Marx, 2018; Blume, 2020) This thesis, however, argues that this outside look at teachers does not do them justice as it does not provide concrete solutions or lacks empathy which is needed in the analysis of such a complex profession.

Therefore the methodological approach of this thesis is to compose an autoethnography in the form of a dialogue. According to Anderson (2006, p. 385) this approach allows the researcher and the prospective reader to go to “the depths of personal feeling, leading [them] to be emotionally moved and sympathetically understanding” and to “deepen [their] capacity to empathize with people who are different from [them]” (Ellis, Tony & Bochner, 2010, p. 2), while at the same offering the chance “to develop and refine generalized theoretical understandings of social processes.” (Anderson, 2006, p. 385) Consequently, the auto-ethnography might be able to meet the emotional needs of teachers in an analysis of their struggles with the digital turn of their schools while also drawing general conclusions which will help the educational system to be successful in this digital shift.

Defined as “highly personalized accounts that draw upon the experience of the author/researcher for the purposes of extending sociological understanding” (Sparkes, 2000, p. 21) auto-ethnographies constitute the exact opposite of the premise of traditional scientific research to aim for objectivity and distance (Mendez, 2014, p. 280). They found their way into scientific research when the dogma of objectivity was increasingly challenged in the 1980s (Ellis, Tony & Bochner, 2010) and was exposed as an approach that was just as flawed:

“Several researchers have highlighted the presence of the researcher’s rhetoric, prejudice, and experience in the interpretation of observations and numbers and the way in which they simply construct one interpretation from among many that could be consistent with their numerical data analysis. They have also revealed how data can be socially constructed.” (Wall, 2006, p. 2)

Its harshest critics even speak of “advocating a White, masculine, heterosexual, middle/upper-classed, Christian, able-bodied perspective” if researchers are insisting on the supremacy of traditional scientific methods. (Ellis, Tony & Bochner, 2010) Ellis and Bochner, as two of the researchers who have excessively promoted auto-ethnographies as a qualitative method of scientific research, also argue: “Autoethnography, on the other hand, expands and opens up a wider lens on the world, eschewing rigid definitions of what constitutes meaningful and useful research.”

In addition to being a personal account, autoethnographies are method and product at the same time and exist in various forms. Basically, they are referred to as a combination of autobiographical and ethnographical components. (Wall, 2006)

However, still being a rather young discipline of research and being open for a vast range of inquiries and stylistic options, it is quite difficult to find specific instructions on how to compose an

effective autoethnography (Wall, 2006, p. 6). Anderson (2006), though, indicates that there are two subcategories of autoethnographies that can be differentiated, namely evocative and analytic autoethnographies. Whereas Ellis and Bochner (2010, Anderson, 2006; Wall, 2006) promote the evocative approach which knows almost no boundaries, Anderson has defined five key features of analytic autoethnography. The first of these features is the “complete member researcher (CMR) status” which requires the researcher to be part of the cultural entity that they are doing research on. Second, “analytic reflexivity” refers to the necessary awareness of the researcher’s ties to the observations (p. 382f). By being an active part of the observed entity the researcher is permanently influencing their environment but is also influenced by it. This awareness also needs to be transferred to the third key feature which is the “narrative visibility of the researcher’s self”. By this, Anderson refers to the “auto” in autoethnography and indicates the need to constantly point out the researcher’s self in their narration. The challenge imposed by this is not to be “self-absorbed” and “lose sight altogether of the culturally different Other” (Anderson, p. 386). Personally, this seems to be the greatest challenge when being exposed to and doing research on very emotional matters. One option to avoid self-absorption is to make good use of the fourth key feature Anderson points out: “dialogue with informants beyond the self” (p. 385). This dialogue is the imperative of ethnography and also the main difference between autobiography and autoethnography. The interactive and intercultural exchange is the autoethnography’s essence and a necessity, otherwise all the findings will be an autobiographical comment on personal experiences. Finally, Anderson concludes his features with the “commitment to theoretical analysis” which wants analytical autoethnographers to draw general conclusions from their findings in order to contribute to a theoretical framework on the topic matter.

With regard to these key-features the following autoethnographic chapter fulfils the condition of being conducted and analysed by a complete member of the observed cultural group as the researcher is the narrating ET and teacher alike. Furthermore, the subsequent analysis and conclusion will take the mutual influence of the researcher and the observed environment into consideration. The narration itself also constantly uses the personal pronoun “I” to clearly indicate the personal account that is presented by the researcher. To avoid “self-absorption” two measures have been taken. On the one hand, the data of the autoethnography has been gathered over the period of 22 months in the change process of the researcher’s school so far. The data, which according to Ellis, Tony and Bochner (2010) can basically be anything creating meaning to cultural interaction, are provided by dialogues, team sessions, interviews, school protocols and general experience in the interaction with colleagues and are now presented as a recollection. On the other hand, this recollection is presented in the form of a partially fictional dialogue in order to add a

reflecting entity to the narrative, which assists in refocusing and not becoming too self-absorbed. Finally, the autoethnographic account will be analysed and commented on in order to retrieve general conclusions for further research, as indicated by Anderson.

Coming back to the presentation of the findings, the biggest challenge is the writing itself since the author needs to face the tasks of combining theoretical and methodological background with compelling storytelling. Consequently, the author can use and has to be familiar with all the tools of classic narration and poetry such as narrative perspective, character development, dialogues, emotive and figurative language and showing versus telling. The goal is to visualise the events to engage the reader. (Ellis, Tony and Bochner, 2010) This constitutes another reason why the form of a dialogue was chosen. “Dramatizing the data” as Saldaña (2005, pp. 1f) has phrased it in his work on ethnodrama as a research approach, offers a more engaging narration because it allows the narrator to present more of the emotions which were involved in the process and might be lost in a more auto-biographic narration that employs more filters before being transferred into written language. An example for such a filter is trying to present yourself in proper light and therefore adjusting the data that is revealed. Even though the dialogue is also presented in written form, it still requires a more spontaneous response on behalf of the autoethnographer.

Therefore, in the following the reader is presented with the fictional setting in which the ET is asking for supervision (SV) on her case of being the change agent for innovation at her school. All the accounts that are provided by the ET are based on the actual, non-fictional developments at her secondary school in Saxony, Germany, from October 2018 till July 2020. Hence, the data also cover the period of the Corona pandemic which caused a nationwide lockdown of the schools from March to May 2020. Due to the scope of this thesis the data had to be adjusted in regard to their detail and extent. As pointed out before, the data on the parents and students can be found in the appendix as their value for analysis is limited.

3 An educational technologist’s narrative

3.1 Becoming and Being

3.1.1 Of becoming and being a teacher in Germany

SV: Okay, in your email you said you needed guidance, because you feel overwhelmed by frustration. So what exactly is the source of your frustration and how can I possibly help as an educational technologist supervisor?

ET: Well, frustration is a good term for that. I would even say I am on the verge of resignation. I feel like I am putting all my energy into battles that can only be lost. Fights in which only I see an added value and make a permanent fool of myself. I constantly see the glances of my colleagues, who can only hide the annoyed rolling of their eyes with difficulty or they make me understand that, unlike me, they really know what education is all about. And you know, I do all this

additionally in my spare time and put all my energy into it, because I wish for our students to benefit from it and because it could enrich us all. But I feel like an annoying pesterer who is on a selfish crusade that everyone wants to see fail.

SV: There is a lot of disappointment in your words, I can hear that and I want to try to help you. But I need more insight. You know, from what you are telling me I feel quite a bit of resistance against the battles you say you are fighting. And I guess you have tried all different kinds of weapons to gain control. But even though it is frustrating, there is always a reason behind resistance and you need to get to the very core of it to find out which weapons – to stick to your image of battle – you actually need. Likewise you also need to shed light on yourself. What fights are you fighting exactly and why are you fighting them. If you have your ‘why’, the ‘how’ is easier to handle. So let us dig a bit deeper and start by looking at the place you are working at.

ET: Okay, good. Well, I work as an English and history teacher at a rural *Gymnasium* in the state of Saxony in Germany. We have about 950 students and we are about 80 colleagues.

SV: Good, but I am afraid I need more facts as I am not German and not familiar with your education system. What does *Gymnasium* mean?

ET: Well, at the *Gymnasium* we teach higher secondary education and prepare the students for a potential university career. To do this, they have to take exams after a total of 12 years, which our state government issues centrally to all students. If they pass these exams, they graduate with the so called *Abitur* and can go on to university.

SV: You said higher secondary education, does this mean there is also lower secondary education?

ET: Yes, secondary education in *Germany* is divided into two levels. This is quite difficult to understand from the outside. In principle, all children attend primary school for four years, in a few federal states six years. In the middle of the fourth grade, their parents then decide which secondary institution to attend based on an explicit recommendation from their child's teachers. The lower secondary education up to grade 10 is provided at the *Oberschule*, which is more practically oriented and generally prepares children for vocational training. In theory, this secondary system is permeable and students can change between school types at any time, but it is only recommended during the first two years after primary school and is rarely put into practice. Only a few students go on to the second educational path after they graduate at the *Oberschule* and take their *Abitur* at specially designated institutions.

SV: And that system is the same all over Germany?

ET: In general, yes, but there are differences in the details. The terms are sometimes different, some federal states even subdivide the lower secondary education into two further levels. Other federal states give their students 13 years to attain the *Abitur*. And our examinations are also different in terms of subjects, amount, topics or types of tasks. Some schools are also allowed to design the exams themselves. Because of our federalism, each state has different laws, but the graduation certificates are then valid throughout Germany.

SV: Okay, so you said during 4th grade parents have to make a decision for their children based on a teacher's recommendation which has an impact on their whole life. What age is that?

ET: Most of them are 10 years old.

SV: What do you think of that?

ET: When I had to decide on a type of school at the beginning of my teacher training at the age of 19, I was an advocate of this system. After all, I had tormented myself for 12 years to get through it. For me, no other type of school than the *Gymnasium* was worth to be considered as the place where I would like to teach in the future. But in the meantime I consider the whole system to be extremely questionable.

SV: Okay, I feel like we should take a step back and have a broader look at the system if you think it is problematic. Every education system is embedded in a social context and is strongly influenced by that. So what would you say, what does it mean or rather what does it feel like to be a teacher in Germany?

ET: Phew, good question. It's not an easy one to answer. But what comes to my mind quite spontaneously are two comments that you always get to hear when you reveal your profession. "Wow, you want to become a teacher? I couldn't do that!" or "You are a teacher? So how do you enjoy all this free time and holidays?" These two statements symbolize very clearly the dichotomous tension in which you find yourself as a teacher in Germany. I have always objected to such comments, especially to the second one. As a committed teacher, you easily feel attacked by such notions. But in the last 6 years that I have been working as a teacher, I have tried to take a closer look and I think I have discovered some truths in these statements.

SV: Which truths are that?

ET: That's pretty hard to summarize. But I think the core of the first message is owed to the fact that we teachers have to meet the demands of an increasingly complex society. In our global and digital world, old traditions and lifestyles are dissolving more and more and it is becoming increasingly difficult to find one's bearings. At the same time, we are celebrating heterogeneous individualism as never before and are trying to provide all human characteristics with the best possible options for their development. Parents, who have to learn to deal with these circumstances themselves, expect answers for their children and the shouldering of responsibility from the education experts and find it equally difficult to trust them. Meanwhile, children who are overwhelmed by the media age come to a school that has been designed for a homogeneous audience long before the invention of modern media and technologies and has hardly any answers at hand.

SV: Okay, there is a lot going on in that simple expression. What do you see in the second one?

ET: Well, on the other hand, our students have been going through this same uniform, egalitarian school system for decades, which leaves hardly any room for individuality and measures and evaluates complex individuals according to standardized criteria in the form of numbers. And we teachers participate in this system and preserve it just as much. We spend most of our time in the classroom teaching frontally, because we believe that otherwise we cannot impart the knowledge

that students need to pass the central examinations. We dismiss curious questions or ideas from students because we don't have time for them or because we have to deal with the important things in life first. We tell the student that you do not meet the standard criteria in our lessons and therefore belong in a school for lower secondary education. And between overbearing parents and lethargic children, we say at 1 p.m.: "I do my service by the book, no more and no less, otherwise I wear myself out unnecessarily." And I will be honest with you, I feel like I am right in the middle of it all.

SV: How do you mean that?

ET: Well, I am kind of sitting on the fence. I am constantly wavering back and forth between innovative enthusiasm and frustrated empathy. I would love to crack open this lethargy and lockstep and I get angry when I run into walls again. On the other hand, I see and feel that my colleagues and I are left alone with too much too often.

SV: Even if it is of little comfort for the moment, but being able to show empathy for different parties is a good prerequisite for further action. But let us take a closer look at the two sides of this, as you said, tension. You said that you are being left alone. Where does that start? Do they adequately prepare you for the job?

ET: I would say no, even though we have to study for 5 years directly for this job at university and then do a one or two year practical preparatory service at a school. After all, we are going into the civil service and have to prove our suitability in several state examinations. This probably corresponds to the cliché that Germans love their orderliness and exactness. Well, the studies were an enrichment for me personally, both during and in retrospect, but many of my fellow students would not confirm this and, given my preference for learning and academic research, are probably the more trustworthy sources when it comes to assessing the quality of the studies. Most complain about the lack of practical relevance. For example, in my history studies, I never heard of most of the topics that I have to teach in school according to the curriculum. And the schools themselves, in five years of study, I have only seen from the inside for a whole 13 weeks - 13 of a total of 260 weeks of training. There are universities with different concepts and better reputation, but the average teacher relies on exactly this experience. In the *practical preparatory service*, everything is then made up for in one go. Although we receive concentrated practical experience and the trainers attach great importance to methodological diversity, almost every trainee teacher feels overwhelmed by the real demands of teaching after five years of university.

SV: And what about the contents? Especially with regard to becoming an educational technologist, have you touched any of the New Learning Paradigm topics?

ET: In terms of content, digitalization and media literacy never played a role and student-centered teaching was presented as an equivalent alternative to teacher-centered teaching, but was rarely really practiced. Above all, student-centered teaching was not addressed in the context of our social change, but only as a method that is somewhat more motivating and modern. Often our discussion tasks consisted, for example, in explaining at which points frontal teaching is always the better choice. Cooperation was a familiar concept to us in the form of group work and the importance of

strengthening social competence through cooperation was always emphasized. However, our focus was mostly on how we learn to evaluate the process of group work in a meaningful way, rather than on how meaningful teamwork is actually initiated and promoted. By the way, problem-solving skills and creativity, as two other important competencies of the *New Learning Paradigm*, were not part of the university curriculum during my studies, and self-regulation was only presented as a possible concept in the context of *open lessons*, which were mostly considered as a practice of independent project schools, not public schools. If you had a clear intention, you could always find a corresponding seminar for each topic, but there was no overall concept or vision - and as a newcomer in the field of pedagogy you simply lack the overview and experience to come up with that yourself. In addition, I must perhaps mention at this point that the training is what teachers of my age get. Many of my older colleagues often stress that their studies offered even less methodological and didactic diversity.

SV: These are difficult preconditions, but what about your employers? What do they do about the situation?

ET: The question is, which employer do you mean: My headmistress, the boss of our school or the great unknown, our federal state? Because teachers in Germany are not directly employed in the schools, but serve the federal state and are assigned to the schools by this state.

SV: That means headmasters cannot choose their staff?

ET: Usually not, until now. At the moment there are first attempts to change this, but mostly schools are not even allowed to decide for which subjects they employ teachers. This is decided by the *school districts* of the state. They see everything. They see the number of teachers, their subjects and the number of classes of all our public schools. Then they calculate on paper exactly what each school needs. For example, if our school has 10 open biology lessons, no new teacher with a standard of 26 lessons can be hired. So we look at other schools to see if there are biology teachers who still have lessons available. These teachers are then delegated and have to work at several schools simultaneously. It has already happened to me too. A school 40 km away urgently needed English teachers. The *school district* found several English teachers at our school who had single available lessons, e.g. they only taught 25 of 26 lessons. The *school district* added up these hours and said that we had an English teacher available. Our *school management* then had to take two classes away from me in the middle of the school year and reassign them to other teachers so that I had enough *open lessons* to go to the school 40 km away two days a week. By the way, I was chosen because I was the only colleague without a family of her own.

The problem is not that you don't want to help other schools and students in need, but the manner in which it happens. On the one hand, you are an arbitrary number on a piece of paper and the needs of the students are completely ignored. On the other hand, you deprive schools of their autonomous potential. For example, our *school management* cannot keep lessons open for colleagues who want to take on special tasks voluntarily or carry out projects. All these lessons are found and used by the *school district*. It is the same with class arrangements. As soon as several students leave a class, because of moving or repeating a grade, changing schools, etc., and the class falls below a minimum

number, the *school district* dissolves the class and distributes the students among the other classes of the same grade. In this way teachers and lessons are made available again for the countless problem hotspots in our federal state. Project groups or smaller classes for integration and inclusion are therefore completely impossible.

SV: This leaves little room for the school management to do anything outside the minimum standards.

ET: That's right. Not to mention what it does to students and my coworkers. We have classes that are separated and regrouped three times in six school years and change teachers every year. You don't have to explain to anyone what this does to trust and a sense of belonging. And even as a teacher this does not fail to leave its mark on you. One of my saddest days as a teacher so far was in my second year of teaching, after two years of putting a lot of energy and love into the first class I served as a class teacher. The parents, the students and I had grown together in a great way and I had to announce to them that we had to dissolve the class. Many students cried bitterly that day and I myself still had to come to terms with that in the following school year when I could no longer teach them. For me it was the first time, but many of my colleagues have experienced this so often that they say they had to get themselves a protective shield because at some point you cannot bear it anymore. The social vein in most teachers is probably naturally too strong for that.

SV: This all sounds like a very bureaucratic system, much more than it sounds educational. Is there still more with which you and your colleagues feel left alone or overwhelmed?

ET: I guess there is, but in the end it all breaks down to the same core problem: the mismanagement of the last decades. Almost all state governments have failed to train enough teachers for the right subjects and types of school, and this in times when classes are becoming more and more heterogeneous. We have more and more refugee children or other immigrants who have a registered *DAZ status*, which means they have the right to special assistance and have to be integrated into the classes at school despite their poor knowledge of the German language. There are more and more physical or mental impairments that need extra attention; from ADHD and reading difficulties to affective behavioral disorders, or emotional breakdowns due to divorce of parents or acute bullying. The spectrum is varied and colorful and the total range of this spectrum is the case almost always in every single class. Professional school assistants are rarely approved, and the process is often gruelingly long. School psychologists are often working for 40 schools at the same time and social pedagogues are so rare that they can usually only be employed at the *Oberschule*, as these have an even more heterogeneous student body. And here we are, only talking about integration. We have not talked about internal differentiation yet or other tasks that society asks of us.

SV: You are talking about the digital turn and how that matters to school?

ET: Right. Again, there is hardly any support for this except for rough guidelines that have been drawn up by the EU Commission. Large amounts of money are being spent, but no one knows what it is supposed to be used for. Our state government is disguising the whole matter under the guise of autonomy and wants to leave it up to the schools to decide for themselves how they position themselves in terms of media education and digitalization. However, funds for this must then be

applied for with painstaking effort over several years and through various levels of authority, professional staff may not be hired and there are no *open lessons* for willing teachers with the necessary know-how.

I know that we do not have a nine to five job, but rather a lot of personal initiative and idealism belong to our tasks. However, this initiative and idealism is often just enough to somehow do justice to the many little humans we teach every day, but not to iron out the mistakes in the system. We have not even talked about the fact that the job is really exhausting without all these additional challenges.

SV: Okay, so I can feel you are taking the side of your colleagues now. But in the beginning you talked about fights with them and later on about their annoying lethargy. So let us have a look at the other side of the tension. How do your colleagues frustrate you?

ET: Well, I do not really know where to start.

SV: Why don't you start with how your colleagues are keeping up the system themselves as you mentioned earlier on?

ET: Alright. So I think there are two aspects that stand out in particular which frustrate me and are somehow connected to one another. It concerns the grades. Sure, they are also part of the system. It is even required by society. For example, when I take the time for project work, in which the students can engage with the English language as authentically as possible, I like to not put a lot of attention on the grades and instead give the students room to explore. Either the parents show up after some time and complain about where the grades are, obviously their children are not learning anything if they do not bring home any grades; or the students show no commitment at all, because they have adapted to our system and use their energy efficiently. But one can hardly blame the parents and the students, in Germany we are all socialized on the fact that school grades make up a large part of our identity and this beginning at the age of 8.

But we teachers ourselves could take countermeasures in many places and, together with parents and children, reassess the value of grades. Instead, I have the feeling that our school years revolve exclusively around grades year in, year out. It is constantly a matter of having an overview and managing to give enough grades in a semester. It is exactly specified how many grades have to be given and with what value. Project and group work must be postponed or omitted because certain topics have not yet been examined. Students ask with each exercise, no matter how small, whether it is graded or not. We continually calculate in our heads whether the weeks are still enough for all grades and better not have an excursion, a sports competition or a performance by the theatre group come in between, so that students or whole classes are missing and we have to additionally take care of making them resit the tests. It is all a question of fairness and comparability, every student has to pass all the tests. And if the grades are not entered in time in our handwritten grade books, there is often little tolerance. For example, I had finished entering the final grades for the report cards of a colleague's students which I teach in English. But, after having consulted her, I had not yet entered the individual grades, because I was simultaneously running a fundraising campaign with the students for the Australian bush fires. We even skyped with an Australian native and the

students were intrigued, but my colleague officially complained about me because I had not entered the individual grades by the official deadline. Her words were, "You are taking care of all that nonsense, but can't get the really important stuff done."

SV: Well, that hit home, didn't it?

ET: It sure did. And that is the basic tenor with the majority of our colleagues. I feel that students are only measured by this grading system. One colleague came to me after 12 weeks in the new school year and explained to me regarding the first class test she had written in my 5th grade that there was no mathematical potential whatsoever in the students and she hoped that their strengths lay elsewhere, otherwise she felt gloomy about their future at the *Gymnasium* - mind you, 12 weeks after the students had moved from the primary school to our new school at the age of 10. Another example are project days which are part of the curriculum but which have been reduced to a minimum at our school because teachers have so much work to do to prepare these days and in the end they do not even come up with something usable in form of grades. Similarly, and this is the second connected problem I spoke of, many colleagues take these grades at the end of the school year like an inventory list and fully depend on it with their decision whether or not to recommend the student to stay at the *Gymnasium*. I explained the two-level secondary system earlier. I cannot tell you how often I have heard the sentence in the last 5 years that the student does not belong at the *Gymnasium*. I do not want to deny that some students might like the *Oberschule* better, but I rather perceive the problem to be that many of my colleagues are unwilling to help the students or take a holistic view of them. If the student fails to reach the teacher's benchmarks, then they have to leave. Only a few of my colleagues try to help the students to actually get over the threshold. As soon as students become difficult, *Gymnasium* teachers often only recommend the student to attend the *Oberschule*.

SV: This sounds like a very contracted conception of students. Is this reflected in other behavior as well or just with regard to these grades your politics tell you to apply?

ET: Well, yes, although I do not know if the whole behavior is simply a consequence of this system. If the benchmarks that we are supposed to check constantly tell us that the students are not good enough, then a negative view on the students is probably logical. There is hardly a day that goes by that I do not encounter negative vibrations somewhere in the teachers' room. How often do my colleagues say that the students of today are a disaster, show no more commitment, have no more social competence and adopt a service-me-please attitude. Fun activities, which are common during carnival season or on the last days of school for our graduates, have been boycotted by my colleagues for years and are discredited as nonsense. And quite a few of them constantly tell me that they have to detach themselves from the students in order to put up with all of this.

As I said earlier, there are many reasons for this resignation and exhaustion. But when I, as a trained educator, see my survival strategy in distancing myself from the children, then something is seriously wrong. And sometimes I believe that it is simply easier for them to blame the students, the parents or the system than to question themselves. In the end, many colleagues have become alienated from their students' world and only a few are willing to actively engage with it. As I always

say, when I try to educate the children for what was my own future, instead of preparing them for their future, conflict has to arise somewhere.

SV: I sense a lot of emotion there.

ET: Yes, I know that I get emotional very quickly when I talk about this topic. But this negativity is exhausting and difficult to escape from. You would not believe how fast you can get consumed by this kind of constant nagging. I actively try to counter it, but it often leads to distancing from my colleagues. But after all, the solution lies within us. No matter how much we curse the system, it will not change. However, we can work on our attitude. Instead, my colleagues complain during the breakfast break about how unfair it is that primary and teachers at the *Oberschule* now earn as much money as we do, considering that we have so much more responsibility with the *Abitur*. There is complete ignorance of the fact that the other teachers' work entails much more pedagogical responsibility. Or everything that needs to be changed is declared the young teachers' task. I can no longer count how many times in the last 5 years I have been told: "New visions, methods and technology, that's your responsibility! I do not need to deal with this anymore 7 years before my retirement." But at the same time our initiatives are hampered by comments like: "Once you reach our age, you'll see that we're right."

I have great respect for the age and performance of my colleagues, but I think stagnation in education is a massive problem and I also wonder if they could afford such an attitude in the free economy.

SV: Okay, I think the whole story is starting to add up. I'll try to summarize it for us at this point. Being a teacher in Germany means being exposed to a huge field of tension. You provided many examples of how the education system is very rigid and bureaucratic, but society is giving schools more and more responsibility, to which their colleagues cannot react at all because there are no guidelines and they are overburdened. On the other hand, your colleagues attach themselves to questionable pedagogical principles and too often blame external circumstances for the problems instead of remaining optimistic and adjusting the screws on their educational mindset.

ET: I think that's a pretty good description.

SV: Well then, you will have to tell me next, what made you decide to start your journey as an educational technologist in this system. Because it seems to me that this journey may last a while.

3.1.2 Of becoming and being a change agent for innovation

SV: Okay, so where did the idea to become an educational technologist stem from?

ET: I would say it was a fortunate coincidence and perhaps that little bit of attention to recognize it as such. I must also admit that everything I have described so far has, of course, somehow already gone through the filter of the educational technologist that is in me now. Before I started that journey though, I myself was caught in this unreflective hamster wheel as we say in German for monotonous and depressing daily routines. I was tired and often annoyed by colleagues, students and myself after only three years in the job. I even thought that being partially delegated to another school was a relief to escape from my colleagues and the rut for a while. Then I finally filed an appeal for part-

time work in order to relieve myself from a few lessons and to look for career alternatives in my free time, because at the age of 29 I no longer wanted to accept this situation. By chance, my own employer, the state of Saxony, advertised a position at its Media Education Centre, a state institution that was supposed to support schools and teachers in the digitalization process, but was not well known in the schools. Until then, I had not even thought of committing myself to digital media and technology. But suddenly it seemed to be a perfect fit for me and I realized that, unlike my colleagues, I was supporting pretty much everything in my teaching with modern technology. And I did this, not because I saw added value for the students, but because my own world was so digitalized that it was much harder for me to come up with lesson plans that did not include any technology. Suddenly it struck me that several colleagues had already asked me for support and advice here and there and that I had even offered in-house courses on individual learning apps for them. Unfortunately, my application for this Media Education Centre then fizzled out for various reasons, but the fortunate coincidence that I have just mentioned emerged at the very moment I was about to develop an idea of what my mission might be.

SV: What did that fortunate coincidence look like?

ET: Our headmaster, whom I always appreciated, retired and along came our new headmistress, 41 years of age, full of visions and with the digitalization on her personal agenda. Right in the first few weeks she conducted personnel interviews to get to know us all better and in my file she had of course seen that I had applied for another job and was obviously ready to leave school. At the same time another young colleague had registered our school for the ERASMUS project and asked which colleagues would be interested in Europe-wide advanced training. She had even found a training course in Estonia in a catalogue, which she suggested directly to me and it sparked my interest. I had already heard of Estonia's affinity for digitalization and the idea of being able to look at other schools and ideas in another country intrigued me. Moreover, the course promised to provide ideas on how to help schools to take the digital turn. So there I was, sitting in my personnel interview and being asked by my new boss how I imagined my future career. I honestly replied that I did not know, but that I wanted to attend the course to find an answer. She supported my request strongly, not without firmly telling me that she wanted someone for our school who would promote exactly this process together with her. This is how I ended up at Tallinn University, where my journey began in a 10-day course led by Mart Lanpeere.

SV: So you needed a supportive boss and meaningful in-service training in a different setting to grant you new inspiration?

ET: Exactly! I seriously doubt that something like this is possible being stuck in the same routines. But you also have to recognize and seize the opportunities.

SV: In summary, what would you say are the most important keynotes you took back home with you coming back from that training in Estonia?

ET: A lot, but most of all I had finally found a vision of education that felt holistic, logical and in touch with people; and on top of that, I had been given tools to initiate a process of change back home.

SV: I guess you are talking about the New Learning Paradigm?

ET: Right, I understood for the first time that the digitalization is not about the technologization of schools, that technology is just a means to an end. I understood that it is about a change in society as a whole that will determine the future of our students and that people who did not grow up with technology and need to educate themselves accordingly are responsible for these students' education. I understood that we did not have the answers to this change and therefore excluded it from school in order to hold on to what we already knew. I saw that our students had tried to find answers themselves and the results were now sitting bewildered in our classrooms or frustratedly stormed our parents' evenings. It was suddenly completely clear to me that for the future professional world we did not need people learning by heart, but creative, independent problem solving and, surrounded by permanent change, a lifelong willingness to learn.

SV: This sounds familiar and quite convinced. What tools did they provide you with to bring this conviction to life?

ET: We discussed the innovation cycle or the diffusion theory of innovations according to Rogers. This helped me to understand at which end I actually was and that the reactions of my colleagues to me according to the distribution on that standard scale were only too logical. I began to discover more and more empathy for them within me, because in the Design Thinking approach they explained to us how important it was to get the majority of the teaching staff onboard the same boat and how it would actually be possible to achieve this. They also showed us practical examples from schools. This was the first time I met an educational technologist, Ingrid Maadvere, and got to know about her tasks. I talked to teachers who let themselves be guided by their students in finding topics for their lessons, who helped to realize the students' own ideas and encouraged them to found student companies. Other teachers told me that there were no grades at their school or that they decided together with their *school management* on what or whom they would spend money, that they even designed their school building and the classrooms together. I was fascinated by how participation and autonomy can work and have a positive impact at a school.

SV: And with all of this you went back to Germany to do what next?

ET: Well, I did not fly back until I had asked Prof. Mart Lanpeere what I could do to further professionalize myself in this field. I was hooked and wanted more in-depth knowledge, partly because in Germany certificates, degrees and grades still determine whether people trust and listen to you. If you have a degree in something that has to do with education and technology, then you have to be proficient in the subject and have some knowledge. So as long as I would not have anything of value on a piece of paper, people would not listen to a young woman like me who speaks of technology but is actually trained in teaching English and history.

SV: So he recommended you to study educational technology?

ET: Yes, he recommended the online study course at the University of Tartu, which could be well combined with my job and would only take 12 months. I was thrilled! Back in Germany, in the office of my headmistress for the evaluation of my trip, I had already formed a condition in my head for the answer she still was waiting for: "I'm staying, but I want to study for the degree in Tartu

and I am hoping for support." And I got more than that. She wanted me to let the school be part of my studies and to initiate the processes of change together with her.

SV: She seems like a true supporter and more than ready to take action. But before we look at that course of action, I would like to know a few more details about the general setting of your position as the educational technologist at your school now.

ET: Yes, I applied to study in Tartu with the idea of helping our school in the innovation process of digitalization and to get to the bottom of the problems of resistance. Fortunately, I was admitted to the university, but apart from my headmistress I did not receive much support. I was not granted any *open lessons* by the *school department*, although many individual people involved thought this idea to be great and even sent letters of support to the decisive body. But the study program was not to be found in any of the official further education catalogues and therefore could not be supported by officially releasing me from some of my lessons. They only told me to do it on top of my normal workload or do without a part of my salary. I do not know exactly how my *school management* did it, but despite the bad bureaucratic conditions they somewhere found a contingent of lessons out of which they could at least give me 4 of the 6 weekly lessons that are usually given to teachers who want to study. For the task as an educational technologist I could not get any additional lessons or financial incentives. The position is not intended at German schools. Therefore there is no hourly budget, no office or extra money. The only position similar to the task of an educational technologist is that of the IT coordinator or *PITKO*, as we say, which was already taken at our school and would have required technical skills that I do not have. However, as I was able to somehow link all my additional tasks at school to my studies, I was very grateful for what my *school management* was able to offer me on the quiet, even though our educational system revealed its weaknesses again at this point.

SV: Okay, give me a minute here to pin it down. So it took a dead-end for you in your job and a totally new setting with inspiring input to recalibrate yourself and find your vision of education. The support of your headmistress and the attentive thoughtfulness of a colleague empowered you to put your ideas into practice. Is that about right?

ET: It sure is.

SV: Now, I can sense the change you felt was necessary and I can already anticipate your colleagues' reactions to you trying to advocate this change. In a way we had a look at the educational part of your tasks, but quickly give me an idea of the technological preconditions at your school.

ET: Well, I would say our equipment is very simple and not very well planned. But other teachers at other schools would envy me for this equipment. Not even our school's basic equipment is German standard. That is why the *Digital Pact*, which provides 5 billion Euros for the digitalization of all German schools, was celebrated with a lot of ballyhoo two years ago. And now most schools are wondering where to start? In any case, we have already been able to resort to a basic equipment that is determined and managed by the IT department of our local *school authority*. In the four years between my hiring in 2015 and the point where we actively initiated changes in 2019, our school

building was equipped with broadband and simple WLAN and all classrooms were equipped with a media station. This consists of a digital projector and a computer connected to the Internet. There are also a few laptops for the individual *faculties* of our school. In a few rooms of the natural sciences and computer science there are also interactive panels, for the other subjects there is one single freely accessible room with such a panel. We also have a Windows-based school network and a private homepage with student and teacher access. But at many points you can see that everything was pieced together over the years, or that it was not well set up from a pedagogical point of view due to a lack of will or knowledge. For example, we have ultra-modern projectors with HDMI connections, but pull VGA cables from the ceiling that do not fit the school's laptops or those of our students, who want or need to deliver presentations with their own equipment. Our language lab is also a product of this policy. The IT department has only agreed to this lab on the condition that it is not integrated into the school network. Accordingly, our language laboratory can only be controlled by the teacher and is only minimally interactive for the students, as it is not equipped with a computer and software for each student, as is usually common practice today. Those computers all would have had to be connected to the network.

SV: Okay, I guess we will get back to the IT-department of your school authority eventually as they seem to play an important role. For now, to complete the image of you as the change agent of your school a little, can you already point out or even summarize the main tasks you had and still have in that change process you are aiming for?

ET: That's actually not so easy, because it feels like we are still in the process of figuring out what we actually need for this process. But probably this is one of my most important tasks, on the one hand to have an overview of the whole process right up to our goal, which is in the distant and partly futuristic future; on the other hand to always have a feeling for the smallest, often interpersonal details that could disturb the process and to know how to solve these details. Broken down to concrete actions, this means that I have initiated a team at our school, which we jokingly call the *DigiTeam*. In our team we lead and control the process of our change together. At the same time as this team was founded, the state commissioned all schools to develop a media education concept in order to apply for the funds of the *Digital Pact*. Coupled with the idea of Design Thinking, we designed an action plan that should lead us to that concept together with all our other colleagues. The next key task is certainly the supervision and further training of my colleagues in the use of the technology. Speaking of technology, another task that emerges is to research new technologies and to check whether and how they can be meaningfully embedded in the classroom. For half a school year, I worked on the use of iPads, inspected various interactive boards and classroom concepts together with my headmistress or tested different learning apps, video conference tools and learning platforms, especially during the period of the Corona lockdown. In order to do so I took part in many different workshops, onsite or online in form of webinars. One final task of my work is the communication of our vision and technical ideas to the IT department of the *school authority*.

SV: We are also going to talk about your colleagues in detail soon, but for me to better follow your remarks, I would like to know the basics of your action plan, so that I can better relate the descriptions of your colleagues or the school authority to the phases of your action plan.

ET: Basically, as a team, we first defined our vision and our task precisely. In order to, in terms of design thinking, get the majority of the school on board, we then developed an elaborate survey concept. On the one hand, this involved a school-wide, voluntary digital survey among students and teachers, who were asked questions about the current status of technology at our school and their own competences. On the other hand, we conducted extensive interviews with one representative from each of our *faculties* and each class of our students. We had previously asked all representatives to collect problems, ideas and wishes regarding the digitalization and modern schools in their *faculties* or classes.

In the third major step, based on the results of these surveys, we designed the content framework of our media education concept, which we presented to all parties involved in the school and advertised it. Several democratic bodies had to approve this concept before we could apply for the national funds. The last instance was the school conference, in which representatives of the teachers, the students, the parents and the *school authority* took the final vote.

After this vote, the next stage was to develop the corresponding curriculum. On the basis of the state curriculum of the individual subjects, we asked all the *faculties* to propose media-relevant topics for each grade and to classify them according to the digital competence framework set by the EU. Furthermore, we wanted them to include concrete teaching ideas. We then combined these individual media curricula into a coherent curriculum, which, in a balanced way, obliges each *faculty* in different grades to integrate certain media competences in the classroom, so that in the end, hopefully, the students can tick off the EU competence framework with flying colors.

Now we are at the point at which we want and have to move from theory to practice. The next phase therefore asks the *faculties* to draft concrete lesson plans and materials for their obligatory topics in the media education curriculum, which all responsible teachers can then use. At the same time, our team is working on an advanced training concept for our teachers and a media course for our older students that will enable them to support our teachers in developing the younger students' digital competences or even to provide workshops for parents. In a final phase, an evaluation concept will be set up to permanently evaluate and adapt our process.

SV: This sounds quite precise and like you already got a lot of the work done. But I think you need to fill me in on the timeframe we are actually talking about here.

ET: The team was founded in February 2019, three months after my first educational trip to Estonia. It took us half a year to complete and evaluate the survey and interviews, that was in August 2019, and in October we had the draft for the media education concept ready, which had made it through all democratic bodies in January 2020. By April 2020, the *faculties* had to submit their subject-specific media curricula, which we had combined into an overall curriculum and returned to the *faculties* for voting by June 2020. Now the lesson plans have to be drafted until February 2021 and we hope to complete the advanced training concept and the media course by the end of the next

school year 2020/21 so that we can start the practical implementation and training of our students and teachers in 2022/23.

SV: Well, one could say, little by little, the bird builds its nest, but it might be the pace of how processes work at school.

ET: Yes, at the beginning I also wanted to do everything at once and would have loved to set up the media course for our students within 6 weeks, including the curriculum. But this change is so fundamental that it takes time and patience if you want to embark on this journey with as many people as possible.

SV: There is definitely some truth in that metaphor. There is one final question I have with regard to you as the educational technologist. Tartu slipped our conversation a little. Could you briefly tell me which impact this kind of continuous training has had on you?

ET: Phew, it is really hard to keep it short as I feel this program has very much enlightened me. Not necessarily through the contents of the course, even though they were very helpful and meaningful, but more so because of the human interactions, so the people. In hours of interesting conversations with likeminded people from different cultural and political contexts I learned to think outside the box and recognize mental barriers within myself early on. It helped me to shed new light on the educational system and nourished my deep wish to be part of a proactive change. But my fellow students and supervisors also helped me to find empathy for my colleagues and encouraged me to dig as long as I would need to find the reasons for their frustrations and sometimes stuck mindsets.

SV: Well, well. What better way is there to use this statement then to start having a closer look at them.

3.2 The challenge of change

3.2.1 Of hesitation and annoyance – Challenging the teachers

SV: Let us recall this process once again before our inner eye. With the official support of your boss and a work order from your Ministry of Education, you have now announced the start of a change process to your colleagues by setting up the coordination group and starting the surveys in your school. At this point we want to focus on the teachers and leave the students aside for the time being. What was your first impression at the beginning? How did your colleagues react?

ET: Quite reserved, hesitant and observant. We did not even encounter the great outrage that we had expected. It was probably still too far away and an action plan was not yet in sight. For now it was just a matter of talking about it and exchanging opinions. Perhaps many colleagues hoped that, like other projects before, it would simply fizzle out. Or maybe they thought that their ignorance would make it clear that the process would have to take place without them. The interviews themselves were conducted in a friendly and open tone, without indignation. At this point we could have concluded that the starting situation was basically positive. But the fact that only one out of 80 teachers took part in the digital survey gave us cause for concern. The teachers who talked to us

in the interviews were the heads of their *faculties* and therefore had been asked to take part by the *school management*. This was a first indication that the process of taking them along with us did not work as we had imagined it would. At that time, however, we did not notice this so strongly, and also tried to give this process a positive connotation through the mode of voluntary participation. But by the time we had to agree on the concept a good 10 months later, this was bound to lead to conflicts.

SV: Okay, but before we get to those conflicts, let us focus on the colleagues who actually talked to you. What did you learn about your colleagues in those first conversations?

ET: I think the most important observation we made at that stage was that nobody really had any idea what *digitalization* meant, neither socially nor in the school context. Almost without exception, all of our colleagues understood it to mean the technologization of our classrooms in order to entertain the students more. This is why our conversations always led us to the point where our colleagues would say things like "Yes, if the technology would work or be standardized in every room!," or "I don't want classrooms in which students do everything exclusively with the tablet!" or "Surely a PowerPoint presentation can't replace a good class discussion!" In their world view, we wanted to make a clean sweep and put technology into every corner of the school for the sake of technology. They did not realize that technology, even in the EU's framework on digital literacy, is only a fraction of it all and rather seen as a means to a greater end.

At the same time, however, it also became apparent that they were unable to see the possibilities of technology at all, partly due to prejudice and unawareness. For many of my colleagues it was a revelation that it is now possible to write on tablets with pens, just like on paper. This made it extremely difficult for them to engage in visionary thinking at all. They inevitably ended up in a typical frontal-facing classroom with an interactive panel and students who, instead of a folder and a textbook, had a tablet in front of them, which they used mainly for research and typing. It never occurred to them that technology could facilitate aspects such as collaboration or internal differentiation or creatively enrich the range of products for learning outcomes. But how could it? I needed to travel all the way to Estonia to be able to think outside the box.

SV: So for your colleagues, digitalization was on the one hand a synonym for the technologization of the classroom, and at the same time, in their minds, technology could not do much more than providing the same teacher-centered instruction, but equipped with technology?

ET: Right.

SV: Well, it is not surprising that in this case you just keep doing what you have always done if you even save yourself extra work.

ET: If you look at it that way, then yes. But I have tried to dispel these prejudices by redefining *digitalization* for them, by letting them partake of my findings gained in Estonia, by explaining to them what I already tried to summarize at the beginning of our conversation. That *digitalization* refers to our social change and that we can no longer cope with it with pure knowledge transfer, that our knowledge is increasing exponentially every day, that manual work can be taken over more and more by machines which are safer and more efficient, that in the future we have to strengthen

the competences that will always distinguish us from machines, that change is permanent and that we have to adapt to it continuously. For me the consequences of this and my responsibility as a teacher are so conclusive that I find it difficult to understand why it does not have the same implications for my colleagues.

SV: This is the innovator speaking out of you, trying to get through to the early adopters and the early majority. But I experience you as someone who analyses a lot and looks for reasons behind everything. Surely you already have a vague idea of the reasons why your colleagues do not follow you enthusiastically.

ET: Sort of, but I still cannot quite grasp it. It seems to be a huge conglomerate of conditions, developments and attitudes, whereby you get lost in all the details when you try to grasp and work on them. But a big core problem simply seems to me to be the time factor. We do not have enough of it, and we do not spare it enough, for example, to have detailed discussions with all those involved or to exchange ideas and concerns. Then we could get to the bottom of the rejection, which of course has its roots.

SV: Then you best describe this rejection to me. Where did you feel it during the process, or how did it express itself?

ET: Let us just say there was no singular moment which stuck with me. Instead, there were many small and everyday occurrences of rejection and resistance. That was the vehement head-shaking and eye-rolling of a colleague in my very first report on my experience in Estonia. She was obviously repulsed by the content, but also never commented on what disturbed her when I asked her about it.

These are the *faculty* conferences on their specific media curriculum, in which a productive discussion is stifled in the bud, because everyone wants to go home as soon as possible, and the actual teamwork is solved by everyone working through a single grade in the curriculum individually. Instead of discussing creative implementation ideas as suggested by the *DigiTeam*, they only copy what is in the general curriculum. My attempt to come up with a few ideas in my history *faculty* ends with the words: "I have no idea about the technology we need, so we can't include that in our curriculum since we're all supposed to be able to put into practice what we put into the curriculum." When I then try to dispel the concern about technical skills by explaining to them that our overall concept is going to provide support for precisely these cases, one colleague acknowledges it with the comment: "I won't add any complicated ideas until I see that such a support system actually works here!" And another colleague adds: "Stephanie, let's not drag this out pointlessly."

That were recurring arguments with the *PITKO*, whose function comes closest to that of the educational technologist. Even on repeated request, he has no interest in joining our team. All contents of our work must nevertheless be passed on to him through various channels, because he is the official mediator to the responsible IT department of the school authority. There is no communication with me, because he thinks I am too careless and unreflective in handling technology. In an official meeting with the *school authority*, in which I explained just in response

to an enquiry why our media education concept plans to provide a tablet for each teacher as basic technical equipment for our colleagues, he commented on my statements as my personal, unnecessary wish list. Moreover, technical innovations for which he is responsible are being implemented only very slowly and reluctantly, since he has already seen so much technology come and go that it is not even worthwhile starting something new. During the Corona crisis this led to the problem that we still could not use our social learning platform developed by our federal state for school communication and therefore had no official and binding communication tool for our parents and students. In a conversation with our headmistress and an expert, who wanted to provide us with free iPads for a limited period of time to experiment with, our *PITKO* even left the room saying that he had his own opinion on the subject and would not participate in the project. But the problem was that he had to grant the permission for the iPads to access the school's WLAN so that we could use them.

SV: So a pretty strong front has built up in someone who obviously has a key function in the process. Why is he in this position if technical innovations make him uncomfortable?

ET: This is difficult to answer. I must also stress that he is not alone with these attitudes, but as a *PITKO* and older colleague he is often the spokesman for a group of teachers who do not talk to me directly. Moreover, he has rendered outstanding services to this position, especially in the 1990s when it had to be created overnight to keep up with all the changes after the German reunification. He took care of the school's entire technical network far beyond his normal hours for years. Actually, the *PITKO* position was originally designed in a holistic way, but in practice it was often too much focused on the technical equipment, as there was no other way of doing it in terms of time and personnel. So he did exactly what was required of him and did it very well. But if you are in a certain position in a public school, and I say this without wanting to offend him as a colleague or undermining his competence, you are there until retirement, no matter what kind of work you do. After all, there are no mechanisms for checking success or good work in this education system. Apart from that, the position would be far too technical for me personally, only to be at one of the key positions for technology at our school. But I miss a forward-thinking and optimistic communication basis with him.

SV: And good communication is a key element in change processes. Have there been problems with this in other parts of the teaching staff? I mean, have you encountered rejection in other situations as well?

ET: Yes, particularly with regards to communication, I can think of two more moments. When our teachers' conference was concerned with approving the media education concept to pass it on to the concluding body of the school conference, there was suddenly a need for discussion after months of silence. It was now clearly stated there in black and white what we wanted to approve as our concept for the future of the school. And the concept contained a vision that spans more than ten years and accordingly contained far-reaching changes. I think our colleagues noticed that we were scratching at their comfort zone and to them it felt like the changes were all supposed to be implemented within a week. At that point it did not matter that we were voting on a period which,

for most of our current colleagues, would end well into their retirement. A week and a half before the deadline for the grant application of the *Digital Pact*, they suddenly started discussions that we had wanted to have for 10 months. So we got lost in debates about how natural sciences and sport had too much prestige at our school to offer a third focus with a media course alongside it. We suddenly discussed why we would indulge in the brand fetishism of Apple by buying iPads. We would push the students into the arms of this company through this surreptitious advertising and sell our data to American servers. The feelings were so heated that nobody was really receptive when I explained that we were also advertising for an American company with our current Windows computers and that even though Google tends to support more hardware companies, it is not allowed at Saxon schools due to the data security and privacy issues. Suddenly hundreds of prejudices and fears came to light, which, on top of everything else, were commented by the notion that nobody had been allowed to have a say. Then even our diplomatic headmistress lost patience for a short moment and pointed out the lengthy interview procedure, the survey in which nobody had participated and the opportunity to discuss the concept two weeks before the conference. We had sent the concept to all teachers a month before and had invited them to an informal round of talks, in which the heads of the *faculties* had to participate, but those interested were explicitly invited to join as well. Not even all of the heads of the *faculties* were present.

With a lot of effort and some concessions we managed to save the concept, but mainly because we emphasized that we would not get any money, if we were not to adopt it. This worked because the colleagues did not want to leave any money behind which the state is giving away.

It was an extremely frustrating day, which was only topped by a conversation in the school conference, i.e. the final negotiation of the concept, when the colleague, who had shaken her head so vehemently in my first report almost exactly one year before, finally broke her silence and explained to me her rejection of the whole process. Here in this conference, in which I was only invited as a guest to answer questions and was not entitled to vote, she could no longer avoid me, because if she wanted to stop our project, she could only do so in this body. And it was not that I could not understand her reasons, but I was frustrated that, like the other colleagues before her, she had waited until the inevitable confrontation.

Our team had prided itself on having always openly asked for communication. We had made a structural effort to listen to all instances and had always emphasized that we also wanted to hear critical voices and were not the advocates of unrestricted digitalization. But we, and I in particular, had become the embodiment of everything that was uncomfortable about this *digitalization*. I had interfered with their comfort zone and they had reacted with denial right up to the point at which they could no longer ignore me or the concept. Then everything broke out of them altogether.

SV: But on the positive side, you now know better where you stand and have gotten to the core.

ET: That is true, many things become clearer with a little distance, but we could have saved ourselves a lot of resentment, because many of the motives are understandable, but nothing that could not be solved through conversation and small steps. But then there are apparently also aspects

that are so messed up and in their adjustment would probably cause too much discomfort and pain for my colleagues to find a solution in the near future.

SV: Well, we will see about that. You want optimism from your colleagues, so set a good example. If pain really is a part of this whole process, it has to be on both sides. And that frustration seems to be your pain, your task, so to speak, if you want to lead the way as an innovator. Let us try to approach these impeding causes you have talked about together. What are your assumptions as to where this resistance and rejection could have its origin?

ET: Okay, I will try to organize my thoughts a little bit, but many issues are intertwined and perhaps have not yet become clear to me in all their details. To get back to what I first noticed in the interviews with my colleagues about their perception of *digitalization*, we could go one step further than understanding it to be just technologization. Many of my colleagues have a fundamentally skeptical or even negative view of *the digitalization*. Many justify their rejection of digital technologies on the grounds that we see what it does to children and young people every day. Our students and their contemporary deficiencies in concentration, coordination or social skills are all a direct product of *the digitalization* itself. I believe that many of my colleagues do not recognize our responsibility here as adults in general, and as educators in particular, that it was our use, or rather lack of use, of these technologies that produced these results. The technology itself cannot cause such results, but only our interaction with it, and since we ourselves did not know what was happening to us in this rapid change, our students at a highly sensitive age have been left to their own devices. And unlike us, they have no experience gained in a world without this technology to fall back on. This is also often the reason why many of my colleagues argue that schools should promote the traditional values and skills that students can fall back on when in doubt. In this sense, *digitalization* is seen as diametrically opposed to these values and not as something that could be integrated and developed into something even more valuable. They see *the digitalization* as something partial, something that one can also exclude from life, something in which one does not have to participate or which one only confronts once they have also prepared themselves for a world without *this digitalization*. For me this view lacks the holistic perspective that *the digitalization* has pervaded our entire society and is an irrevocable part of our lives.

The *Gymnasium* is already being accused of teaching in a way that is out of touch with life, as our students solve differential equations but are unable to file tax returns when they graduate. Excluding *digitalization* will have worse consequences than that and I think we can already see that in the many cases of cyberbullying and various computer addictions that we have on our desks despite the bans on mobile phones and WhatsApp at our school. The fact that there are officially no WhatsApp class chats does not prevent parents from coming to the parent-teacher meeting in a state of complete dissolution because their child is sent right-wing extremist and racist memes by a classmate in their group chat.

SV: Of course I can understand your thoughts, but the fact is that we all have no idea what these developments are leading to and whether it is fundamentally a good thing at all or if we humans

are just not made for it. So protecting traditional values is perhaps also a very good safeguard mechanism.

ET: I fully agree with the last point. That is why it was so important for us to work closely with the critics in particular. Every change needs its critics, who provide impulses for thought and important adjustments of direction. But, as I said earlier, I do not believe that *the digitalization* and its digital technologies can be fundamentally bad or evil, instead our way of interacting with them determines their value and, in this sense, we need well-prepared students who are able to attach a positive value to the whole change. Moreover, even if we play through the pessimistic train of thought and the *digitalization* is fundamentally bad, it does not make it less of a reality for our students. And I want to know that my students will be able to deal with it in a self-directed and active manner.

SV: I see you have thought this argument through several times.

ET: Yes, in our team we were willing to have this discussion, but our colleagues were not.

SV: Okay, moving on. You indicated that you have discovered other issues as well. You just mentioned that you want to release self-directed and actively creative students into this digitalized world. Do you not believe that your colleagues are also committed to this?

ET: This is a very difficult question, because the answer could put many valuable things that my colleagues do every day for their students in a poor light, but I do not want to convey this impression. The majority of my colleagues have the best interest of their students in mind, but I now often have the feeling that this interest has been socialized too much by our bureaucratic and outdated school system. We educate students to comply with our standards and benchmarks, we evaluate and categorize them too often and far too strongly according to their grades, and we make the achievement of the *Abitur* our highest goal. This is what a student must achieve in order to pass our educational system with good results and to have the best conditions in the professional world in Germany, which is no less influenced by this. By this measure, my colleagues are doing everything right and a very good job. Measured by humanness and the rapidly changing professional world, I unfortunately miss the pedagogue in us more and more often. To be an educator literally means to lead a child, not to form it in order to comply with government regulations.

But where are we thinking of the child, if it is already stamped as a mathematical scapegrace after the first class test? Where are we thinking of the child if group work is not done because a bad group result could disrupt the tight schedule of knowledge transfer? Where are we thinking of the child if grades are judged to be something meaningful and a fundraising campaign a waste of time? Where are we thinking of the child, if the teacher constantly bases their way of educating on their own world and not on the child's world? And where are we thinking of the child if you have to distance yourself from them in order to get through the daily work routine?

In view of this, our understanding of our role as (*Gymnasium*) teachers seems to be disarranged or out of time. Especially if you add the approaches of the *New Learning Paradigm* to the equation, we have a problem. Student-centered learning, creative problem-solving skills, collaboration and self-regulation are diametrically opposed to our idea of a central knowledge mediator. The Corona

crisis has shown it quite clearly in Germany, as soon as the teacher is removed from the learning process, our students are pretty much doomed.

Of course, the original fault resides in the system. How often have I myself wished for more time and less pressure on grades to do justice to my students? But our school system has also left gaps and free room for us to fill in other ways. And *the digitalization* in the sense of the *New Learning Paradigm* can be implemented in such a system, albeit with much more energy and even more idealism than needed in a more open system.

SV: Interesting observations, but of course it is not easy to redefine your role as a teacher in a system which sees your role differently to that. Do you think that your colleagues' understanding of the teacher's role is connected to their use of technology?

ET: Yes, absolutely. This central role that we attribute to ourselves goes hand in hand with a high degree of authority, otherwise this kind of teaching would not work. And as I said, I hear very often from my colleagues that they would use the technology more if only it worked at all times. Some also express the fear that the children know more about it than they do. I believe these statements are based on the fear of loss of authority. They are often very disbelieving when I tell them that I myself also ask students for help and involve them, that I also curse the technology, but then laugh about it together with the students. I believe that there is far too much tension within them, which is caused by uncertainty. They lack spontaneous alternatives for action or the basic knowledge about certain chains of error in the technology. That is why perfectly functioning technology is a basic requirement for them and, quite honestly, I understand why they are frustrated about this point in our school. On the other hand, there are also teachers who do not even know how to attach files to e-mails, so it can be assumed that many colleagues lack skills which are acknowledged as basic competences in the modern world of work.

I think, however, that of all the motives for rejecting digital technologies described so far, this is the problem that can be tackled most actively and easily. Uniform and intuitive technological infrastructure is only a question of design and finances. And certainty can be achieved with targeted continuous training campaigns.

SV: Well, according to this I could now ask quite heretically as to what the problem is then. But you will certainly tell me that straight away.

ET: Well, apart from the fact that the two problem points described before that are not so easy to solve; the final aspect that I have noticed in the last few months is particularly challenging and that concerns the willingness to work. At this point I do not wish to accuse any of my colleagues of being lazy or of having no work ethic. But I have noticed that the tenor of many of my colleagues is strongly self-centered. As long as it is about working in their own classroom, many teachers are supermen and do great things. But as soon as it comes to leaving the comfort zone and the routine, quite a few become rigid or unwilling. And most often this comfort zone ends at the door of the classroom. For example, I have seen few moments of real team work so far. Tandems still work quite well, but as soon as larger groups, such as the *faculties*, are involved, the work is divided and the results are eventually assembled as a patchwork. Sitting together as a team after school and

discussing and working on a common plan has so far only been possible in the *DigiTeam*. Meetings after school are always felt to be something that extends a normal working day to a double working day. They are not the norm and are reduced to a minimum during the school year. Even collective staff meetings are always thankfully cancelled if there are no announcements from the *school management*. It would never occur to anyone to hold the staff meeting anyway, for example to finally have time for complex discussions. Many *faculties* were glad that under the pretext of Corona they were able to arrange the agreement on the specific media curricula via email, thus keeping it short and concise and avoiding lengthy discussions in actual meetings. Cooperation is therefore very difficult for my colleagues, who are autonomous in their classrooms all day long and achieve most of their necessary objectives more efficiently when done independently. This is why many colleagues told me, that team work is nice and might be inspiring, but "I get my tasks done more quickly on my own." It seems there is no need to cooperate, so they don't.

But the self-centeredness is also noticeable in other areas. In relation to our change process, for example, we heard sentences such as "At my age I don't have to do this anymore!", "Why should I do this when other colleagues here shirk every task?" or "I'm fed up with the politicians up there, they've dropped me, so I'm not lifting a finger here anymore!" several times last year. In practice, in my own English *faculty*, for example, such sentences led us to cut out everything creative and innovative that the state curriculum offered us for the media curriculum, and students now are supposed to work with electronic dictionaries instead of making them design a weblog on a topic of their choice. By the way, electronic dictionaries refer to the small grey handheld computers and not to web dictionaries enriched with artificial intelligence. My remark that, as one of three main subjects at our school, this will be our contribution to the media curriculum that is planned for the period of the next ten years, was acknowledged by a colleague with the comment: "Let's first see what the other *faculties* are offering. In the end, we're the stupid ones who do all the work and there won't even be a thank you and those up there in politics let us do all the work again." She said we, but really meant I. Too often, according to her own statement, she had made the experience of taking on efforts which in the end came to nothing because no one had joined in.

This feeling of unequal treatment plays a huge role in our teachers' room, as the workload is often very unequally distributed. On the one hand, there is the sports teacher, who never has to correct written assignments, never is the class teacher or works in the upper secondary branch of the *Gymnasium* to prep the students for their final examinations, and on the other hand there is the German teacher, who has two advanced courses, is the class teacher of a bunch of overwhelmed 10 year olds and has a stack of 24 essays on his desk, of which a single correction takes one and a half hours. And the only way for our headmistress to officially show appreciation for continuous extra work is to award one teacher per year with a small bonus, but behind closed doors. It is therefore no surprise that somewhere along the line the thought comes up: "And what about me?"

But we will get into trouble if that, as a consequence, means, "I like to do further education, but only during school hours, I don't give up my holidays and afternoons for that." Or if the media curriculum is not developed by several *faculties* despite official requests from the *DigiTeam*. Or the colleagues say: "I'd love to digitize the administration of grades, that helps me a lot in my workload,

but digitizing textbooks or working with tablets for the students, no thank you.“ I mention this, because almost without exception, all teachers agreed to the digital administration of grades, because it would directly benefit them. But to include something in the curriculum that would require further training is simply not an option. Especially during the Corona pandemic, some teachers, according to their own statements, had more capacity than usual and hardly anyone used it for further training. Many of them complained, for example, that they could not complete the curriculum because they could not really continue with their lessons by using these plain worksheets that we gave the children. When I told them about my learning platform and the video conferences, they often replied: “Well, you can feel free to do this, but nobody can ask me to do something like that.” My offer of support was regularly turned down. My young colleague, who was responsible for the ERASMUS training courses, reported similar situations. Despite her dedication and commitment, there were only three colleagues besides myself who had taken part in the further training courses abroad that she was enabling us to attend, and these were language teachers who were used to travelling abroad and spoke a second language.

In my opinion, the last points show the low ambition to continue to educate themselves and the tendency to judge the future based on the status quo: "I can't do this now, so I won't be able to do it in five years." Such behavior would be fatal for many employees in the free economy, but despite the obligation for teachers to undergo further training, it is not even remotely tracked or monitored.

SV: This is a major, highly complex point that you mention here, which shows that basic working structures, such as cooperation and continuous development, do not seem to work in your school's case. But to draw attention to positive aspects - tell me at which points has your change process worked well so far?

ET: It really only worked fluently when our *school management* issued binding announcements, such as the draft of the media curriculum or when we stressed repeatedly that no subject would do too much and that we would make it binding for all of us, as there was great fear that the work would again only be done by a few.

SV: And apart from these liabilities there were no positive developments at all?

ET: Yes, there were. I guess, as you said before, little by little a bird builds its nest. And it was those little positive moments that kept me going. Through my iPad training or simply by observing my lessons or talking about them, some colleagues have asked me for advice on the purchase of their own devices. After all, three colleagues have completely re-equipped themselves in the last six months because of this. But the really great and motivating aspect is the enthusiasm with which these colleagues now tell me about their teaching experiences and in their mid-50s rejoice over their successes like little children. One colleague is now so convinced of her experiences that she as the experienced colleague often takes my side in discussions among the older colleagues to support me. In addition, our team also consists of colleagues who look forward to the whole process, so that I always have a handful of colleagues around me who support me unreservedly. Nor should I forget our headmistress, who has encouraged and supported me and our team in everything, without any ifs and buts and through many barriers.

Over time some colleagues have also started to respond to my constant encouragement and appraisal of their small steps or have gained some trust because I kept repeating to tell me about their criticism.

The Corona crisis has also played its part in this, and has made a few colleagues reflect and spontaneously ask for my support. At short notice, I was able to create Zoom training courses so that my colleagues could directly provide their students with important learning content shortly before their *Abitur* examinations. For these colleagues, the distress was so severe that their greatest duty, namely to get their students through the *Abitur*, was suddenly in danger. All of a sudden, the uncertainty with the new technology had a much less inhibiting effect and the actual reluctance could be ignored as long as the technology was useful. Among these colleagues, by the way, was also the vehement head shaker.

3.2.2 Of patronization and mistrust – Confronting the school authority

SV: So, somewhere along the lines I have already gained the impression that your school authority also plays a very important part.

ET: Yes, they do and often enough not a very good one.

SV: I guess, you first need to fill me in on their position in the system. Who are they and which functions do they have?

ET: Well, in Germany every public school has a public provider which is usually the city or the *rural district*, in our case it is the latter one. Our district is the provider of 23 schools, primary, secondary, vocational – all kinds of school. Their main task is to provide money for the buildings, equipment, maintenance and office staff, whereas the teachers and *school management* are paid by the federal state. Due to the fact that they provide the money, they are also part of the school conference, I mentioned before. In this way they also get to decide about general school wide decisions like the school's program or house rules.

In regard to the technological equipment they have assigned their own IT-department to take on the responsibility to set up, maintain and decide on all the technology in our school. But being the IT-department of the district means that they have no educational background at all. Just as a side note, every *school authority* also has the option to hire external companies to do these tasks.

SV: Okay, so a group of IT experts with no pedagogical background has the power to decide about everything related to technology in your school? What powers does your headmistress have in relation to that?

ET: None really. Of course, schools draft their budgets on their own, but if the *school authority* intervenes, there is no way around their decision. You can only try to discuss the matters and hope that they come around eventually. In most cases there is no need for discussions and we usually cannot complain about financial support with regard to new textbooks, electronic dictionaries, musical instruments, sports equipment, and so on. But with regard to technology we have had quite some quarrels these past 22 months.

SV: What did those quarrels look like exactly?

ET: Well, we have had plenty, but the most significant one was about the acquisition of iPads, which symbolizes and summarizes our charged relationship quite well. As a first small step to give the teachers opportunities to deal with interactive technologies, we asked the Saxon Media Education Centre for a small set of iPads, which we got even with the accompanying support. But we needed access to our WLAN. However, our IT experts refused to agree to the project. It even took some persistence to be told the reasons for their refusal at all. Eventually, they tried to convince us that there was a risk that the Apple devices would compromise our Windows-based school server. In fact, the words danger and damage were used several times in this context, and they wouldn't listen to anything we countered. The only way we were able to circumvent the IT experts' lockdown was to use a small trick with the help of our own WLAN access point on the LAN interface in the classroom, for which our headmistress courageously and confidently took responsibility.

SV: They told you the iPads would crash your windows server? Did you believe that to be their true reason for not letting you commit to the project?

ET: No, I could not imagine that IT experts could be so serious about something like that. In many further conversations, which then already concerned the purchase of our own iPads, the real reasons became more and more apparent and as with the teachers and their aversion to digital technologies, there were also plausible explanations for this. On the one hand, they had supervised several projects in which teachers had blindly insisted on expensive equipment without being able to summon up the personnel and topic-specific resources. In the meantime, expensive equipment was left unused in a corner at several schools and could not be bequeathed to any other school due to the allocation of the equipment to exactly these schools. On the other hand, as is the case of almost every area of administration and business, they are hopelessly understaffed so that 23 schools and the district itself cannot be adequately looked after. They are specialized and equipped for Windows. To integrate Apple products into this canon would involve a workload that they could not cope with in terms of personnel. I could understand these two points, even though neither of them were our business and should not influence us, especially since we even offered them to take over the administration of the iPads ourselves. Anyway, a third reason for their behavior should cause us more distress, as it was more profound and presumptuous.

SV: Well, now I am hooked. Please, fill me in.

ET: In a telephone conversation with my headmistress, at some point in the discussion one of the IT experts spilled that he does not understand all this hype about tablets anyway, that he does not think much of including such knick-knacks in the classroom and that he does not want his daughter to be taught like that. You have to know that two of the three IT experts send their children to our school. I never have a problem with parents expressing their opinions vehemently, but at this point he mixed up several areas of competence on behalf of his department. First, at such a powerful position as his, personal or parental sensitivities of a single father cannot decide how 950 students will be taught in the next few years. And secondly, at that moment, he arrogated a pedagogical

judgement that he, as an IT expert, was not entitled to. In my opinion, he can always tell us what does not work from a technical or financial perspective, but he has to leave the assessment of the pedagogical meaningfulness to the pedagogues.

SV: I already anticipated such a conflict once you told me they were not trained in education. Did this lack of pedagogical background also reveal itself in other places?

ET: Yes, I can think of two key incidents in particular. A few months ago, after long delays, they convened the conference for the forthcoming budgets and the *Digital Pact*. To our displeasure, the administration of these funds had not been transferred to the schools, but also to the *school authority*, provided, however, that the *school authority* and the school jointly drafted and adopted a concept for the distribution of the funds. So in January we had sent the *school authority* our approved media education plan, the IT department had checked it and now we were sitting in a classroom in our school to discuss it. This time even the head of the department was present, who seemed to be more attentive to us, but unfortunately only rarely communicated directly with us. In this conversation we were asked about each and every computer and tablet why we wanted it that way. We were then able to give pedagogical reasons for many of these points, and it was noticeable that they had never looked at the technology from this angle before. They had never thought about the fact that as a teacher it is didactically and methodologically very limiting if you do not have a second separate screen for the interactive panel at which you can prepare and do things that the students should not see yet. A super simple, tiny decision, but one that has a huge impact on teaching in the classroom.

Another point of discussion was the interactive panels themselves. We had tried to approach the *school authority* by asking which manufacturer they preferred. Based on their statement, we dealt with this manufacturer in several training sessions and selected a model for the purchase. In the conversation we were suddenly told, why it had to be exactly this manufacturer. They would prefer to do a kind of project like equipping our classrooms with different types of interactive panels to test them and we would then decide on the type after a longer period of time. Even if the idea in terms of the sheer range of options is sensible in order to reach a substantial decision, it is, as we then remarked in the conversation, not sustainable for our school situation. We explained to them that it was already difficult enough to motivate colleagues to train for such a panel and that different kinds of panels would become an insurmountable challenge that would cause unnecessary additional frustration. Apart from that, there are also hardly any consistent and sustainable training courses in this area. All these were points they had never considered before, simply because the pedagogical view was missing. But at least this conversation was enriching because it linked both perspectives.

But as soon as the boss had disappeared from the scene as the actual authority, the change of perspective was over. This became clear during the Corona pandemic, when the IT department never once asked if we needed support for the eLearning scenarios for the students. So we helped ourselves, for example by giving Zoom training to colleagues. The official option provided by our employer was delayed by the IT department for so long that it could no longer be made available

during Corona. Nevertheless, the IT experts who sent their children to us and thus learned about our Zoom project felt compelled to send us several warnings, how we dared to use a dangerous platform like Zoom. Of course Zoom had been subject to criticism during the pandemic because of data protection issues, but we had no real alternative. All the options that the IT department showed us either did not meet the pedagogical standards or were too complex to train our colleagues for during the lockdown. They themselves would not provide the training either. So our voluntary extra work and the ambition to do more pedagogically than just sending worksheets by email was annulled under the decree of data protection, and this in a form of communication that made many of my colleagues sad and angry.

SV: Germans and their affinity to data security will always be a mystery to me. But of course I do not want to diminish the need for protective and reflective measures here. The question is though, will there always be a battle of what is more important, the data security or pedagogy? But this shall not be part of our discussion. However, I understand that you have got your own school iPads now and that a lot of your equipment wishes might be granted. So compared to your beginnings with your school authority what happened?

ET: Well, I think there were different forces at work. On the one hand, national political pressure is increasing all the time, as a result of which the state governments who are responsible for education can no longer avoid promoting *the digitalization* of schools more strongly. Accordingly, the tenor in the relevant administrations has changed, saying that there is no more time for petty wars and that the money has been made available so that there is no longer any need to haggle over every cent. The *school authority* has therefore been politically urged to cooperate with the schools in a supportive manner. In addition, the Media Education Centers are very much strengthened as the point of contact for advice and further training, which is why their technical preferences are now increasingly regarded as a standard for the IT departments, so that even our IT experts can no longer condemn the iPads.

At the same time, I think it is also due to our persistence that the IT department listens to us more and more often and slowly starts to trust our competencies. For example, I have invested a lot of time in an elaborate MDM management of the iPads and feel like I have written thousands of lists that the IT department has asked for in order to justify why it should be this particular device or program. Often it felt like wasting my time because I still had to substantiate and justify obviously meaningful decisions that had actually already been made, even though my full-time job is that of a teacher. But in retrospect, this perseverance seems to have paid off and slowly but steadily is reducing the uncertainties of the IT department.

SV: So in sight of this, what do you wish for with regard to your IT department?

ET: My biggest wish is that they accept the little autonomy our school has. This applies both to the pedagogical design of our lessons and to the few financial resources available to ourselves. Just a few weeks ago, we wanted to use one of these sources to buy a few more iPads, but a lady who is responsible for initiating the transfer in the district wrongly thought that the IT department had to agree. The consequence was that even though the iPads were packed ready for shipment at our

dealer, the order was cancelled and I had to again give our IT department a pamphlet with reasons and a statement, although this money pot is none of their business and even though we manage the iPads completely within our school. This simply still demonstrates too little trust and also bad communication. It's not that I do not understand their wish that in combination with their money they want to ensure a uniform equipment in the long term. However, they are not looking for a friendly, supportive conversation, but rather issue an order that a teacher must carry out in their spare time in order to provide interactive resources for the students.

SV: So summarizing, we could say that you are confronted with a very powerful IT-department which has no pedagogical background but can block every decision of yours with regard to educational technology you need. Likewise they do not place a lot of trust in you and do not communicate at eye level. But it has proven to be helpful to be persistent and precise on your behalf.

ET: This sums it up quite well.

3.3 Reflections

SV: Okay, now before I will get to the part of the analysis of everything you have told me today, I would like to hear some final summarizing thoughts of you. You know, sometimes we use images or metaphors to describe a complex issue like your job. What would you say, do you have any picture in mind that helps to grasp you and your endeavor?

ET: Well, I could say plenty, but just like diversity of the tasks that the team and I took on, none of these images could possibly grasp everything at once.

SV: Sometimes innovators are compared to rebels or to be setting out on a journey into the unknown.

ET: Journey definitely yes. Even though it has too much of a romantic touch to it for my liking and usually such journeys are started by likeminded people, aren't they? You know, I am a runner and sometimes feel more like marathon runner in this process. There is this common expression among runners that around kilometer 30 the man with the hammer is waiting for you and despite your motivation and strong will, despite the fact that you have already managed to run 30 kilometers, you feel like you cannot go one step further and need to stop right away. Somehow you can pass this man with the hammer, but some don't. Long story short, either our path is a series of joined marathons or this man with the hammer is waiting every 5 kilometers in our own version of a marathon, because it certainly feels like that at times in this process. No matter how much time we have already invested, sometimes you ask yourself why are you even doing this? This happens when colleagues get personal or refuse to even have an interesting conversation about new pedagogical approaches. But it also happens when I can see that most of the visionary things we want to do are prevented due to archaic bureaucratic structures or political mismanagement. So far we still managed to pass that little man with the hammer, because of that thought of the finish line.

SV: This is an interesting approach which focuses on the patience and endurance you need in this process because of all the challenges. What about the metaphor of the rebel who is counteracting old beliefs?

ET: This does not really work for me, as usually the rebel is quite opposing to his fellow people. But even though I have expressed quite a lot of frustration with my colleagues, I hope it has also become clear how much empathy I have for them because in the end I am one of them. My wish is to help them and take them on the journey with me, not oppose everything they stand for. Rebels also, much like revolutionaries, are fighting for a lonesome cause for which there is no broader support. But I do not see that with regard to the digitalization and the innovation of schools. There is a common sense in educational research, in society, in most neighbouring countries that there is a need for change and what it should like. So the ideas are not revolutionary, Germany and its citizens are just somehow reluctant to take them on – and not all of the Germans are. I am one of them too, am I not?

SV: So do you have another idea for a picture?

ET: Maybe that of a gadfly.

SV: A gadfly?

ET: Yes, a gadfly. You know, I often feel like the annoying gadfly that you try to chase away because you hate it when they sting you. In a sense that is what I am doing to my colleagues. I keep disturbing them in their comfort zone and challenge them to leave it or at least question it. And like the sting, leaving your comfort zone can hurt and can cause anxiety, but it is necessary to grow. Socrates used this metaphor for describing people who were posing uncomfortable questions through which they were useful for a society to reflect and grow.

SV: Well, I certainly have never heard of that metaphor and it might not be true for all educational technologist, but in your case it could be one of your many roles. This leaves me with one final question, what is your greatest wish in all of this change and amidst all this frustration you feel?

ET: That is simple – to have the students at heart in everything we do. School education is meant for them and their future, not for us teachers and not for governmental standards. If we free them from those constraints, we might find ourselves more joy and freedom for creativity in our profession again.

4 Discussion of the autoethnographic account

4.1 Theoretical and psychological contemplations of the process so far

4.1.1 The digitalization as the innovation

According to the remarks of the ET on her school, *the digitalization* is clearly resuming the function of the innovation in the change process of the school. Basic research on innovation defines the term as “an idea, practice, or object that is perceived as new by an individual or other unit of adoption” (Rogers, 2003, as cited in Rürup, 2008, p. 56). Whereas Rürup (2008, p. 57) states that the term

innovation does not necessarily imply a positive or profound change like the term *reform*, Burchert (2010, pp. 7f) concludes that an innovation is also measured in relation to its positive impact and usefulness. Goldenbaum (2012, p. 75) further adds the idea of a need for change to overcome perceived deficiencies to the definition. Based on these assumptions the perception of an innovation is highly dependent on the acting stakeholder, which we can see in the case of *the digitalization*.

While the ET of the school, political frameworks (Redecker & Punie, 2017; SMK, 2018) and research findings imply (Wetterich, Burghart & Rave, 2014; MoER, TU, UT, 2017; Herbst, Müller, Schulz & Schulze-Achatz, 2019) that *the digitalization* can have a long-lasting, positive and sustainable impact on education in order to cope with the social challenges and irreversible changes of the digitalization; the teachers of this specific school seem to take a different, more negative stance. Nonetheless, the ET's remarks lead to the assumption that *the digitalization* can be characterized as something new in their school context. She sees it as closely connected to the *New Learning Paradigm*, which would also bring about fundamental, long-lasting changes with a positive impact for the students.

However, the assumptions of the literature review about the German skepticism and underdevelopment with regard to *the digitalization* and its digital technologies was strongly reflected in the ET's narrative. First of all, her remarks on the digital settings of the classrooms or conflicts about purchasing digital devices confirm the poor and inconsiderate technological equipment in comparison to other European countries. (European Commission, 2019) Furthermore, just like the YouGov survey (2020) implies that more knowledge about the digital technologies would reduce the German skepticism towards or at least increase the feeling of confidence in coping with *the digitalization* process, the ET concluded that stereotypes and unawareness among the teachers caused a wrong perception of the digital technologies, which in turn led to very cautious adaption rates at her school. This last point also conforms with the findings of the literature review that German teachers in general are hesitant to include digital technologies (Revermann, Georgieff & Kimpeler, 2007). That this behavior might be part of an overall, social skepticism in the German society, as indicated by AcaTech & Körber Stiftung (2019) and Kirchner (2019), is suggested by the students who, according to the ET, share the teachers' views in spite of being so called *digital natives*. (Appendix 1)

With regard to the social pressure which emphasizes the need for a change in the form of digitalizing the schools, the narrative provides mixed results. One reason for that might find itself in the fact, that the whole endeavor of the ET and her school are already the reaction to or the result of this pressure, which is why this issue was not broached in the process and its reflection and therefore might need to be addressed individually. Another reason might be the disunity among the parents,

who usually are one of the sources for this pressure (Petrich, 2017). As the ET's narrative suggests, the parents do not agree on the necessity or positive impact digital technologies might have, thus, they are not able to form a unified force to support the change. (Appendix 1)

All in all, it seems that the success of the innovation *digitalization* at the ET's school is severely impeded by general hesitation and strongly opposing attitudes among the acting stakeholders of the change process.

4.1.2 The school as the changing organization

The school as the actual object of the change, has been the core interest for a numerous amount of empirical studies - ever since the alteration of reform policies in the 1980s even more so. As the literature review has pointed out, the long-lasting approach to achieve sustainable reforms through top-down national political agenda was not successful, which led researchers and politics to refocus on the individual schools as the source for change by adopting innovations themselves. (Fullan, 2015; Rürup, 2008; Feldhoff, 2011)

This has clearly caused a shift in tasks and responsibilities for the schools, while the structures of the educational system in which they are embedded have remained nearly the same. (Feldhoff, 2011, p. 18) In the ET's narrative this is indicated through the inflexibility of the *school district* to support study programs, which are not in an officially approved course catalogue of the government or the missing autonomy of the *school management* to control financial means or assign special functions to their staff in order to support them as leading change agents. This situation is even more striking with regard to the fact that the change in favor of *the digitalization* was kind of forced upon the schools as the government would only grant additional money to the *school authority* if the schools provided for a media education concept, while at the same time the government did not provide the schools with necessary flexibility to meet the demands. This is what Feldhoff (2011) in his analysis of German school structures has come to define as the *professional bureaucracy*, which is "specialized on processing complex, permanent tasks in a complex, but stable environment [...] and its processing standards are usually set up outside this organization which in the case of schools would be the *school district* and Ministry of Education [...]." (pp. 20f) Feldhoff's definition is clearly in line with the ET's statements about the school's focus on permanently measuring and fulfilling governmental standards.

Hence, schools and their staff are set up to run on standard programs (Feldhoff, 2011, p. 28) and innovations by definition cannot be adopted with such a program. In the school of the ET this can be seen in the need to come up with totally new tools or adjusting themselves to methods from other professional fields, such as design thinking, project management and data acquisition. These are

not standard programs teachers usually apply or have any experience with. According to the ET, she even had to do further training in a foreign country to make herself familiar with these concepts. However, since the alterations of the educational policies, research has tried to analyze how change can work on school level despite these barriers and how it can be facilitated. They did not start from scratch but rather used findings from the field of organizational developments. Fullan's (2015) and Feldhoff's (2011) comprehensive conclusions from this field of research offer valuable angles for the interpretation of the ET's narrative and the barriers to change she encountered.

As pointed out in the literature review Fullan's *The New Meaning of Educational Change* has become one of the main sources to refer to when analyzing the phases of change in educational institutions. Accordingly there are three phases for change triggered by an innovation, which Fullan calls "Phase I – (...) initiation, mobilization or adoption (...), Phase II – (...) implementation or initial use (...), Phase III – continuation, incorporation, routinization or institutionalization." (2015, p. 65) Since the phase of implementation already "consists of the process of putting into practice an idea, program or set of activities and structures new to the people attempting or expected to change" (Fullan, 2015, p. 84), the ET's remarks indicate that her school is still in the first phase of initiation. Even though her school's teachers have already been asked to execute some tasks like the interviews or drafting the specific curricula, these tasks were of a preparatory nature as they have not yet demanded the colleagues to actively engage with the change in their practice.

With regard to the phase of initiation Fullan points out a list of eight factors that are affecting this initiation of which five seem to have had a crucial role in initiating the change process at the ET's school. (Fullan, 2015, pp. 70-80) First of all, the advocacy of the administration on the one hand and of the teachers on the other hand. In the case of the ET, her headmistress and she herself have clearly taken on the role of advocates for change. Fullan describes the principal "as the 'gatekeeper' of change, often determining the fate of innovations from the outside or from teacher initiatives on the inside." (2015, p. 74) It was the headmistress's digital agenda which made her support her ET's initiative with strong will. The ET, on the other hand, profited from another factor of initiation – the access to information, which means to benefit from networking and sources of new inspiration. In the case at hand, the ET found this network and inspiration in the different settings in Tallinn and Tartu in the form of the advanced training with insights into foreign education systems and studying in a Master's program. Finally, two external factors also seem to have played a role in the initiation of change in this case, which are a new policy and respective funds and community pressure. The first point was fulfilled by the national fund *Digital Pact*, which is aimed at pushing the *digitalization* process on a national scale and almost the only option for the national government to support the change as the education system is strictly a matter of the federal governments which in

turn asked for a media education concept from the schools to grant money from the funds. That these political acts had quite an impact on the initiation in the ET's school can be seen in the headmistress's actions of openly basing all her measures on these governmental requirements. The second point of community pressure only applies to the ET's school, that the school perceives a general social pressure but not yet directly from its own community. (Appendix 1)

These elaborations can be helpful in identifying triggering points which then can be useful to spread the sparks of initiation. Especially the potential of access to information in the sense of giving teachers the chance to let themselves be inspired seems to be a promising source for diffusing an innovation. Likewise, Fullan also shows the complexities of this stage and its potential for confusion, which can even lead to abandonment of an innovation. (2015, p. 81) However, the awareness of these threats can be crucial in overcoming them.

One more, if not the most decisive, assumption of Fullan to successfully oppose such threats is his concept of needing to assign meaning to an innovation for all the stakeholders. (2015, p. 92) In the ET's case this seems to be a crucial point of resistance, which will be discussed in the next chapter on the teachers as the acting stakeholders of change.

Although Fullan's depiction of educational change is helpful in analyzing the different phases and their character and provides a very detailed account of the stakeholders' needs in the change process, Feldhoff's contribution to the field of German school development offers more practical conclusions for the ET's narrative.

Feldhoff contextualizes the school as an organization and consequentially employs the theory of a *learning organization* and *change management* to deduce practical starting-points for schools. (2011) According to his conclusions schools have to become a *learning school* in order "to confront the requirements of different social sub-systems and adjust and renew itself to measure up to these requirements." (2011, p. 83) Feldhoff provides a comprehensive overview of different theories and concepts of the *learning school*, which can be summarized as an institution that constantly questions causalities of daily school life, is positively outcome-oriented instead of problem-focused, strongly values and supports cooperation above all, shares a general principle of student-centered education and pedagogy, sets internal curriculum priorities, organizes itself, regularly reflects on and evaluate its actions, lets all stakeholders participate, accepts all conflicts as important parts of the process and puts high value on continually and sustainably educating its teaching staff and management, while knowing that there are no standard solutions or patterns that can be used when adapting innovations but individual answers need to be found. (2011, pp. 84-96) Comparing all these characteristics with the narrative of the ET, it is evident that her school does not show any of these qualities at least with regard to the change process initiated by the digitalization. In her remarks she

pointed out that her colleagues did not hold a strong vision of what education and pedagogy are besides preparing students to achieve governmental standards and preferring a frontal teacher-centered setting. She also indicated a lack of will for continuous education and qualitative cooperation in teams, which is not even evaluated on a regular basis as there is no assessment strategy for the quality of teaching or school development in her school. Since most of the characteristics of *learning schools* directly relate to teacher attitudes and habits, the next chapter will provide a deeper look at the causes for this.

With regard to *change management* Feldhoff refers to Wilfried Schley's approach to transfer elements of change management theories to school development. While this field of research provides many different concepts for the phases of change and guidelines for action plans, the most important focus seems to be the individual in the changing organization. Schley emphasizes that change is too often seen in terms of content instead of the basic needs and emotional mindset of the individual beings who are part of this change. (Feldhoff, 2011, pp. 89f) Therefore schools as changing organizations need to pay attention to these individual needs as well, to be successful in the undertaking of change. In the remarks of the ET on her school many occurrences revealed imbalanced individuals which is why the next chapter on these individuals will try to shed some light on these imbalances.

In summary, due to great responsibilities individual schools had to take on after the change of public education policy, the ET's school can be seen as an organization that is accountable for permanently renewing itself and adjusting to innovations on its own. Her school is still in the phase of initiation trying to come to terms with the innovation of *the digitalization*. The ET and her headmistress seem to be important change agents, while the teachers might be keeping up mental barriers against sustainable cooperation and continuous training, which according to the theories of *learning schools* and *change management* are indispensable preconditions for a successfully changing organization. Creating meaning with regard to the innovation and catering to the basic needs of the teachers, might offer a solution to reduce their internal barriers against the change.

4.1.3 The teachers as the acting stakeholders

As the findings of the previous chapters suggest, the success of educational change is strongly dependent on its stakeholders, particularly on the teachers as they are the acting stakeholders of the institution that is held responsible for that change. With regard to the assumption of the literature review that research on change processes in school settings tends to deliver depictions of the different phases of change or descriptive accounts of the barriers to this change. Even though some

literature tries to advance to the reasons behind those barriers, they fail to provide practical guidelines.

For instance Richter, Richter and Marx (2018), as one of the few German researchers who try to shed light on teacher's motivation with regard to advanced training, conducted a study on why more than 20% of German teachers do not feel motivated enough to take part in workshops or courses even though they are obliged to do so by almost all the federal school laws. The main conclusion of their research was lacking quality of the training, a higher tendency to not take part if you are older or too burdened by school tasks. (Richter, Richter & Marx, 2018, pp. 19f) However, they also concluded that their results indicated other reasons which seem to be more relevant but too vague to be grasped by their research. They simply summarized it in the term *disengagement*. Even though the ET's remarks are partially in line with these results, as her colleagues also pointed out that no suitable trainings are offered or they needed more time for them, this does not explain why there is so little motivation to overcome these barriers like the ET herself or her team members; or why her colleagues also do not want to use the time of the school holidays for any additional training which is, by Saxon school law, supposed to be used, because school holidays in Saxony do not mean that the teachers have free time.

The same applies to findings on cooperation. Lortie (as cited in Eder, Dämon & Hörl, 2011, pp. 200f) already pointed out in the 1970s that teachers seem to be very strongminded when anyone intervenes with their autonomy in teaching matters. According to Lortie, no teacher wants to be criticized or wants to be told what to do by any other teacher, as teachers are all equal and no one is superior to the other. This attitude became known as the autonomy-parity-pattern, which Altrichter and Eder mainly ascribe to the fact that the education system and its structures have turned teachers into lone warriors and linked it to the assumed lack of willingness for cooperation. (Eder, Dämon & Hörl, 2011, pp. 200f) However, studies on cooperation among teachers could not find any supportive evidence that teachers even lacked the will for cooperating with their colleagues. Instead the majority declared to perceive cooperation as beneficial and was ready to give up on their autonomy in favour of it. (Eder, Dämon & Hörl, 2011, p. 202; Pröbstel & Soltau, 2012, pp. 71f) Still, and the studies just mentioned indicate so as well, it is evident that the teachers at the ET's school do not appreciate cooperation and become defensive in discussions about their teaching approaches. One reason for this dissonance might be that teachers are competent enough to anticipate the expectations of such studies. Another one might be the focus on the willingness for cooperation, because willingness does not guarantee its execution. Regularly the ET was met with notions like: "I would do it, but only if..."

So what is the “but only if...”? What could the practical advice be do support schools in becoming more efficient in achieving sustainable change on a broader scale and leaving their status quo? Stating that teachers need more time for advanced training or cooperation and forming shared goals (Pröbstel & Soltau, 2012, pp. 71f) is an important advice to the *school district* or principals, but will not change the fact that there simply are not enough teachers to make up for the time that is not spent in the classroom teaching in exchange for more team work and training and will not tell the change agents how to overcome the mental barriers that prevented the shared goal in the first place. As the methodological approach of the thesis and the notions of *change management* already indicated, it seems crucial to attend to the teachers as emotional and individual beings who all bring along their personal and complex needs to this process of change.

Findings of the field of modern corporate management and positive psychology, might be able to offer interesting new perspectives and insights. To remain within the scope of this thesis only four conceptions will be used for the further discussion of the ET's data, but there sure are more options available.

Logan, King & Fischer-Wright (2008) state that in order to lead a successful organization you need to be able to identify the tribal stage your employees are operating at. In a long-term study on the mechanisms of organizations they came to the conclusion that all of them function as a tribe and work like the natural tribes all human beings are part of. Likewise, they can work well or they can fail. The researchers derive five different stages of which Stage Five is the most successful one. In accordance with their findings it can be said that the school of the ET is mainly operating at Stage Two, which can basically be summarized in the notion “My life sucks!” (Logan, King & Fischer-Wright, 2008, p. 53). As Logan, King & Fischer-Wright think of communication to be the key to develop one's organization, their analysis of the stages mainly focuses on language. All the exemplary expressions they provide for Stage Two can also be found in the ET's remarks. Common statements for Stage Two are “We tried that before, it didn't work then and won't work now. “, “Nothing ever changes!”, “We're screwed by our management and the system!”, “Don't try too hard, it only raises expectations!” or “My work is never valued!” (Logan, King & Fischer-Wright, 2008, pp. 53ff) The authors also found that Stage Two tends to form support groups, whose sole purpose is to share a commonly perceived oppressor and not productivity. Additionally, this stage is prone to a negativity and mistrust that even the researchers sensed to be contagious. (Logan, King & Fischer-Wright, 2008, pp. 59f) All of this seems to be in line with conversations and behavior that the ET observed in their teacher's staff room. Constant self-centered complaints about other teachers, other *faculties* and the system in general were met with groups of teachers talking behind her back and making her the projection of the threatened change process. In the beginning she also

reported that it was difficult at times to withdraw from all the negativity in the teachers' room. The researchers conclude that identifying the language and the customs of your specific tribe is the most important step to address the barriers to success. By applying the language of the next stages you can lead your employees to these stages and eventually will be speaking in terms of "we" on Stage 4, which, according to Logan, King & Fischer-Wright (2008), is the condition for sustainable and successful change. A closer look at how this can be helpful for the change process at the ET's school will be provided in the chapter on considerations for alterations.

Whereas Logan, King & Fischer-Wright (2008) center their research on language and communication, Sinek (2017) focuses on human beings and their emotions from a biological perspective, but still refers to the concepts of security and trust as basic human needs, which Logan, King & Fischer-Wright have pointed out to be missing at Stage Two. Sinek's basic assumption is that all human beings are made for social cooperation as it poses the precondition for our evolutionary survival – only as a group humans were able to succeed. (Sinek, 2017, p. 75) This is why our whole nervous system is programmed according to this need of social cooperation. Sinek grounds all of his considerations on specific hormones and their functioning in this human process, but for the case of this thesis the focus will be on three of his central conclusions.

First, Sinek states that humans need constant cooperation in order to develop and maintain the feeling of trust and security. These feelings, on the other hand, are necessary to decrease anxiety and stress. If constant cooperation is impeded, this will cause people to become more egoistic, aggressive and in the end even unwilling to cooperate:

„If we work in environments that make it harder to earn these incentives, then our desire to help our colleagues or the organization diminishes. And, absent the presence of commitment, any desire our colleagues may have to help us also declines. A vicious cycle is set in motion. The less our colleagues and leaders look out for us, the less we look out for them. The less we look out for them, the more selfish they become and, as a result, the more selfish we become. And when that happens, eventually everyone loses.“ (Sinek, 2017, pp. 75f)

Looking at the case of the ET, there is strong evidence that the necessary incentives are missing in her school. Teachers are working on their own all day, secluded from their colleagues through classrooms, tense schedules and breaks which are no real breaks due to other duties like needing to talk to students or preparing more material for the lessons. Furthermore, the ET pointed out that their main goal or task was to help students fulfil the standard governmental requirements, which by its nature does not intend or need cooperation and therefore does not provide supportive structures. According to this, making room for cooperation at schools is taken to a completely different sphere as it is not so much about productivity or useful outcomes but about establishing human connections. Therefore it might be worth considering to encourage teachers to connect more

on an informal level first before these connections are used for productive cooperation in the context of their work.

Second, Sinek makes a point in stating that human beings are highly visually oriented from which he derives the need for visually tangible goals. If you cannot see the goal as a clear picture in your mind, people will less likely be able to identify with it or make reason of it. This similarly applies to the steps of a certain goal, which one needs to successfully track the progress. (Sinek, 2017, pp. 70f) In this sense, it is natural that the ET's colleagues are hesitant in adopting her declared goal of the *New Learning Paradigm* in a digitalized environment, because they lack the experience and references to envision the world she is seeing. During the interviews this became evident in the teachers and students alike, when they were asked to describe a visionary classroom. (Appendix 1) On the other hand, her colleagues were very much in favor of digitizing the grading process because they were able to envision all the workload they had with the traditional system and what work would feel like if they did not have to do that. Hence, the ET might need to invest more time in helping teachers to form that clear vision, just like she was supported through her visits to Estonia. Finally, Sinek points out the importance for humans of being recognized and appreciated by their tribe, they do not simply want it, but they need it. (2017, p. 77) People want to be valuable to their tribe to gain support and protection, thus, connection. (Sinek, 2017, p. 78) Sinek concludes that this is also the reason why peak performances are often achieved in the presence of an audience which you want to make proud and uses sport competitions as an example. (2017, pp. 78f) As the description of the structures of her school indicates, the ET's context is not supportive of recognition and appreciation. From the perspective of the school's change process, the teachers are the tribe, but since everything that could be a source of appreciation and recognition is done behind closed doors in the classrooms, there is no one who sees their possibly valuable work. Additionally, the ET continually mentioned that the only benchmark the teachers had to measure their work was to fulfill the governmental standards. So if there is no audience to impress why should they even try? This might explain the lack of ambition for advanced training, as, according to the ET, this is required but not even evaluated in her school setting. There are not even higher positions which would be worth the effort of extra work because you could be seen by your colleagues. Instead, extra-ordinary work seems to be met with envy or uncertainty as could for instance be seen in the disapproving reaction of a colleague with regard to her fundraising campaign for the Australian bushfires. It further connects to the lack of cooperation at the ET's school. Similarly to Sinek's first point, the lacking recognition and appreciation causes insecurity and maybe even anxieties which lead to further distancing from your tribe and less willingness to cooperate. Thus, it seems to be essential to establish structures which promote recognition and appreciation. Of course, many

teachers find some form of appreciation in their students, but this appreciation usually is not consistent and does not come from the actual tribe the teachers need it from.

In his guide for successful corporate leadership, Merath (2017) defines four factors of team development of which one factor is also based on the feeling of security and trust. So it is clear that these two elements are a necessary precondition of productive cooperation. But Merath names three more important aspects, which at the school of the ET do not seem to have been established yet.

The second factor relates to the need of sharing the perception of a common problem. (Merath, 2017, p. 319) If there is a problem, employees will feel the need to change and the more emotions are involved the stronger the reaction will be. Merath therefore suggests to rhetorically dramatize problems to create momentum and stir emotions. (2017, p. 322) However, it is necessary that the employees need to be able to connect to the perception of the problem. In the ET's case this did not seem to be the case. Whereas her and her team's problem is the lack of change towards the *New Learning Paradigm*, the teachers at her school instead have a problem with the increasing amount of different digital technologies, thus, the narrative is not the same. The ET could therefore try to focus on finding a shared angle of the narrative to come to a commonly perceived problem.

The third factor Merath points out directly connects to this as there needs to be a belief to master the challenge together, which at the school of the ET is not really given with regard to the notions of a Stage 2, which believes that nothing is ever going to change and you do not even need to try. Merath suggests different methods of constantly showing appreciation and celebrating success to intensify the positive emotions and the conviction of being able to achieve a goal together. (2017, pp. 324f)

The last factor revolves around the right amount of guidance and support of your employees. Merath illustrates that good leadership knows when to pass on responsibility to capable employers and thereby showing trust, but they also know when to support their employers with as little impulses as necessary to guide them. Only this way will employers be able to learn from their experience and be confident for further challenges. (2017, pp. 326f) In the context of the ET's school you cannot find any of such processes because, as was pointed out in the previous chapter, schools run on standard programs and teachers are all equal. There usually are no tasks through which teachers could grow if they were given the responsibility. Seen from a different angle, it could be said that the distance between the teachers and their leading *school management* is always the same as the level of responsibility does not change. The only exception can be found in the newly established team leading the change process which has been trusted with many challenging tasks and received only as much guidance as needed, thus, it might be an exemplary case for future settings.

In contrast to these three different works of change management and corporate leadership, which focus on the individual being as part of a tribe and how they can successfully cooperate, Daniel H. Pink's theory of *Autonomy, Mastery and Purpose* offers a perspective on how to spark and maintain motivation solely focused on the individual. His concept is based on the assumption that every human being has a basic need for self-direction and therefore a sense of autonomy can have "a powerful effect on individual performance and attitude" (Pink, 2010, p. 134). He further indicates, "control leads to compliance; autonomy leads to engagement." (Pink, 2010, p. 163). Based on the aforementioned autonomy-parity-pattern one could conclude that teachers have the greatest levels of autonomy within their classrooms. However, if you look at the other components of Pink you can conclude, that also teachers are more at the end of compliance than engagement as, according to the ET curricula, grading systems, governmental standards and archaic bureaucratic structures are controlling their everyday work life. What this control prevents is engagement which is the preset to stir a natural drive for mastery. Pink argues that everyone has the "desire to get better and better at something that matters" (2010, p. 164) and the notion of "something that matters" directly refers to the last element of human engagement and drive, which is purpose. If autonomy and mastery are not embedded in a context of purpose, we will not mount to the fullest of our potential. The question is whether governmental standards and archaic bureaucratic structures as the focus and context of teachers' work can ever offer true purpose. Of course, Pink's theory applies to the individual classroom but likewise offers guidance for the change process. Similar to Fullan's idea of *creating meaning*, Pink's concept of purpose indicates that there will not be any drive if the ET's colleagues do not find any meaning for themselves in the change. At the same time they need to be granted enough autonomy to feel free to explore on their terms, eventually the sense of mastery might come back and displace the hesitation and stagnation.

In a nutshell this chapter has come to the conclusion that research on barriers to change on behalf of the teachers could only be explained insufficiently with more traditional methodological approaches. Instead this thesis has focused on the emotional and individual aspects of those barriers shown in the ET's narrative with the help of concepts from change management and positive psychology. The findings indicate that the organizational structures of the teaching profession resemble that of a malfunctioning natural tribe and are not in line with basic human needs that need to be attended to in order to thrive and cooperate. At the same time this kind of literature offers practical advice from an organizational perspective which connects to the previous chapter's idea of the school as an organization. In combination these approaches might be helpful to provide the ET's school with precise suggestions for further development.

4.1.4 The school's administration and the community as the supporting stakeholders

With regard to the other stakeholders the discussion will be briefer mainly because of two reasons. On the one hand, the narrative of the ET is naturally more focused on her school's teachers and only offers a narrowed view on other stakeholders. On the other hand, the school of the ET is still in its initiation phase which is why some of the stakeholders are not yet as important in her reflections as they might be in the implementation phase. This applies especially to the students and parents.

However, many aspects of the previous chapter could be equally utilized with regard to the other stakeholders of the educational change process since cooperation is a basic condition in the relationships between the different stakeholders. Not all of the details might be important, but the stakeholders need to at least share a perceived problem and a common vision.

With a focus on the *school authority*, Merath's idea of distributing responsibilities with a sense of trust and goodwill applies as well. This is also supported by findings of Feldhoff who defines the *school authority* as part of the supporting system for a *learning school*. (Feldhoff, 2011, p. 86) Schools that manage change successfully have been found to be well supported by their authority through consulting and supervision without being patronizing. In the case of the ET this was not the case. The authority in the form of the IT department, neither took on their consulting role, on the contrary the ET had to spend hours on explaining why they needed certain technologies; nor did they refrain from patronizing as they, due to lack of trust, objected to and interfered with many projects initiated by the teachers such as purchasing iPads or using Zoom conferences during the Corona pandemic. In light of their non-existent pedagogical training it seems even more important to turn to Sinek's approach of creating a relatable vision for them.

Considering the students as stakeholders of the change process the findings concerning the teachers might be transferable, especially with regard to purpose and cooperation, since the remarks of the ET indicated that the students are already strongly influenced by the system's structures and standards themselves. (Appendix 1) Therefore they can hardly find any meaning and purpose besides attaining good grades and show tendencies of insufficient cooperation skills as a consequence of the teacher-centered teaching. In the implementation phase the barriers within the students might become more evident when being confronted with the *New Learning Paradigm*. But being able to use digital technologies might buffer the effect positively. This remains to be elaborated on in the future narrative of the ET's school.

So it can be concluded that the stakeholders also have to share a vision and in the course of the change in light of this vision should encourage a supportive relationship.

4.1.5 The educational technologist as the change agent

Summarizing a survey on what educational actually technologists do, Corbeil & Corbeil (2013) came up with a comprehensive list:

“[E]ducational technology professionals are leaders, collaborators, team players, problem solvers and change agents. They are teachers, mentors, tutors, and guides to their students, colleagues, and coworkers. They assess needs and design, develop, implement and evaluate learning solutions using innovative pedagogical and technological strategies. They are lifelong learners, researchers, planners, advocates, and avid readers of all things related to educational technology and best practices in teaching and learning and technology integration. In order to perform their many job functions, they are naturally curious, knowledgeable, flexible, multitalented, creative and driven. (p. 345)

With regard to the ET's narrative many of the aforementioned traits, skills, roles and tasks seem very accurate starting at being a change agent. The whole process of change in her school appears to be strongly connected to her personal initiatives supported by her headmistress as both of them started, shaped and guided the process so far. Moreover the role of a teacher applies to her as well, since she is also teaching and trying to add her findings into her own practice. Even though her role as a mentor, tutor and guide has not always been perceived positively or made use of by her colleagues and students, there are tendencies towards this role for instance in the case of supporting them in workshops on new equipment such as the iPad or online learning during the Corona pandemic. The points that seem to relate to her most are the assessment of needs and the role of lifelong learner and researcher, since she is continuously looking for ways to educate herself in form of advanced trainings or study programs in foreign countries or various workshops in her home throughout the school year. By constantly applying knowledge from her latest courses she has spent a lot of time on assessing the students' situation and the reasons for barriers against change within her colleagues in order to come up with possible solutions, even though they still might need to be altered and have yet to be implemented. Finally, to identify one more of the traits mentioned by Corbeil & Corbeil in her, she seems to be driven up to a point of restlessness as she feels the need to always get to core of the reasons for why something might not be working and does not settle for the status quo. So with regard to Corbeil's & Corbeil's (2013) definition, she clearly takes on the multi-faceted role of the ET in her school.

However, it seems that not all of the roles are active to the same extent at all times, on the contrary the roles and tasks shift with the process but also with regard to the specific stakeholders. In the beginning she and her headmistress clearly were the initiators. The ET served as the visionary and driven advocate for the *New Learning Paradigm*, while her headmistress was the executor due to her position and authority. In the next step, after having founded the *DigiTeam* she took on the role of a team player and collaborator. Through that she now shares many of the ET's tasks with her team, which is why the following analysis refers to the team as a whole when speaking of the ET.

Together they now took on the tasks of designing and planning the phases of the implementation process and started with the initiation phase. In this phase the team mainly served two roles. On the one hand, they provide a model or example for how cooperation could work at their school and are setting standards for the future cooperation of their colleagues which is needed in the further process of change. This exemplary role is also mentioned by Feldhoff, who defines such teams as the main change agent of schools and emphasizes the importance of being a role model for team work. (2011, p. 144) Feldhoff also provides a list of tasks of such teams, which is in accordance with the ET's tasks. (2011, pp. 146f) On the other hand, and this seems to be their main function during the initiation phase, they take on the role of the school's source for self-reflection, which is classified as such by Feldhoff (2011, p. 144) and in the tasks of the ET can be found in the terms of *assessing needs* or *researcher*. More than 18 months were spent on defining the status quo with almost all the stakeholders, identifying the needs and (mental) barriers of their colleagues within the change process and coming up with tools to attend to these needs and barriers in order to eventually push the process to the phase of implementation. For this it was and is necessary to go way beyond the knowledge of classical teacher education and even do research beyond the scope of the educational technology study program, because many answers are to be found in the field of *organizational development* and *change management*. Due to the straining character of that procedure, the ET described this part as 'being the gadfly to her colleagues', in order to make them reflect and challenge them to grow.

Interestingly, despite the term technologist in ET, technology does not seem to even play an important role in this first phase. In the ET's narrative you can clearly see the focus on interpersonal relationships and needs. Technology is only referred to in the background as a necessity to receive the national funds or reflected on with regard to how it can help the teachers to overcome their barriers. Obviously the initiation phase at her school required her and her team to first focus on the mental and systemic conditions. The implementation phase might cause another shift more towards technological aspects as the concepts then have to be put into practice, which will need to be assisted. (An & Reigeluth, 2011) But at this point, it is not perceived as the actual problem.

In light of this variety of tasks and with regard to the continuous complexity of change processes and the challenges to come, the ET in form of a single expert or a group of such seems to be an indispensable asset for schools that want to change in the age of digitalization. However, even though also research advises schools to appoint key figures in these kind of processes (Feldhoff, 2011, p. 98) and despite their obvious acceptance of many different responsibilities, the work of the ET and her team significantly suffered because of the absent ascription and recognition of their competences and functions. In the relations to all the stakeholders, except for the students, conflicts

arose due to their undefined role. Teachers refused to fulfil the assigned tasks or showed a lack of respect towards the work of the team by getting personal, because they did not see them as anything else than their equal colleagues, thus, they were not authorized to issue any directives. This meant that many tasks had to be re-issued by the headmistress to be taken seriously. In relation to the *school authority* their position was also not recognized or accepted as none of the communication ever happened directly but always through the *PITKO* as the mediator, although it had already become clear that he is not even part of the process. This ignorance is also evident in the quality of communication which always bears a sense of patronization. By expressing that the ET wanted to study for an official graduation certificate in order to gain trust and recognition, you can also see the lack of a clearly defined position.

Summarizing, it can be said that the ET and her team fulfilled several functions that the literature assigns to professional *educational technologists*. It was further shown that the roles of the ET shift according to the phases of the change process and always have to be adjusted to the needs of the stakeholders. Finally, these competences and functions are not recognized and supported officially which is hampering with the quality of the process.

4.2 Considerations about altering the course of the process to come

All in all, the analysis of the ET's narrative in light of the literature has shown that the ET and her team have set forth on a journey which has already required a lot of effort and idealism and still is going to be.

While literature of classically connected disciplines such as *educational research* or *school development* have shown the need for the school's own initiative in changing and cooperation and continuous training on behalf of the teachers as a main source for the success of that change process, they still failed to provide useful explanations for all the barriers that hampered with the process. In combination, however, with insights from *organizational development*, *corporate* and *change management* and *positive psychology*, the interdisciplinary approach can offer practical guidance for the future journey of the ET and her team.

The most obvious advice might be to turn to exactly those disciplines for guidance and broaden their sources for research and knowledge acquisition to these fields. By taking on design thinking as the general framework for the change process they have already found a fertile source as it is helpful to always think of getting all the stakeholders onboard as the literature and analysis have suggested. They can continue from there.

With regard to the teachers as the most important stakeholders in this process the focus of their work has to be cooperation and continuous training. From the analysis in the previous chapter (4.1.3) the following measures can be concluded:

- (1) Changing the language of the daily conversation – the team should set an example by applying positive language and avoiding nihilistic or blaming expressions. They should be mindful of using pronouns such as “we”, “us” and “our” to foster a sense of team identity and recalibrate the self-centeredness of many colleagues. Furthermore, using a language that addresses the value and appreciation of their colleagues’ work helps with the next points. (Logan, King & Fischer-Wright, 2009)
- (2) Provide a great amount of opportunities for informal cooperation to revive the human need for cooperation within the teachers. Such informal team moments can be social get-togethers in forms of sports events, dinners or celebrations. This will release tension and might be able to increase the willingness for actual cooperation. (Sinek, 2017)
- (3) Then try to provide meaningful reasons for formal cooperation in the form of complex tasks, which require collaboration and cannot be fulfilled by solely doing individual sub-tasks. This should be accompanied by designing supportive structures that grant the teachers enough time. In the realm of the school’s options this could be in the form of educational days during the school year devoted to cooperation instead of individual training in the holidays. Likewise, the *school management* should assist in routinizing these phases of cooperation by including them on a frequent basis. (Pröbstel & Soltau, 2012)
- (4) It is then essential to pay attention to recognition and appreciation of the teachers’ work by addressing it often or finding options to actively share best practices. Due to the difficult setting of schools with their secluded classrooms and time schedules, it is even more important to think of routines that work for the individual school and constantly make time for appraisal. (Sinek, 2017)
- (5) Encourage autonomy and creativity by providing room for exploration, e.g. in the form of project days, if the system’s requirements do not provide alternatives. (Pink, 2010)
- (6) Create a precisely structured concept for continuous training in line with the goals of the change processes and the needs of the teachers alike. These measures need to be constantly evaluated and appraised to stir a sense of meaningfulness. (Sinek, 2017; Fullan, 2015)
- (7) Furthermore, the continuous training should, in the beginning, focus on making the vision of the change process tangible and meaningful. Provide detailed insight in order for the colleagues to actually see the vision themselves and find personal meaning in it. (Sinek, 2017; Merath, 2017; Fullan, 2015; Pink, 2010)

With regard to the *school authority* and the teachers alike, it also has to be assessed in how far the ET and her team can be officially assigned to their role and what this role shall entail exactly to attend to the school’s needs within that change process. If not acknowledged by the *school district*,

as the responsible entity of deciding about what kind of positions are employed at school, the principal is required to find internal options to support the team in this regard. It needs to be carefully balanced to be recognized by the colleagues without opposition but still accepted by them for the team to be able to work effectively. (Feldhoff, 2011; Eder, Dämon & Hörl, 2011)

Taking all of this into consideration might benefit the journey of change at the ET's school. However, the whole process needs to be evaluated constantly and might require a different set of considerations for the next phase of implementation or the following institutionalization.

5 Conclusion

This thesis began with the quote by Dewey stating that schools were outdated and not putting their attention to where it should be – with the students. 120 years later German schools are still struggling to find their path to a solution, now even more so because of the increasing pressure *the digitalization* is imposing on society, culture and economy. This thesis has tried to come to terms with some of the aspects that seem to slow down or even impede this process of change by gaining direct insight into a school and its endeavor of facing the digitalization as an innovation to be adopted in their educational vision. The insight was provided by the school's ET in the form of an autoethnography to explore the emotional and mental sides of this change on its stakeholders and the potential of the ET to function as the change agent.

With regard to this narrative approach it can be concluded that the autoethnography is a strong tool to advance to the core of human emotions involved in complex processes, which cannot be tracked to the same extent by quantitative or other qualitative instruments. Especially concerning the complexity of school life and the teaching profession, the autoethnographic record of a teacher provided nuances of thinking patterns and emotions that external researchers might not even be able to anticipate in their research design and therefore will not pay attention to. It further helps to promote empathy for stakeholders who, of course, have tendencies to show critical attitudes if observed from the outside, but are often only evaluated in light of the needs of other entities such as society, economy or students. The autoethnographic approach of this thesis, however, tried to shed light on the teachers' needs in order to be able to fulfil the needs of others.

Likewise the strength of this approach is also its greatest weakness. Naturally it has a very narrowed focus and a specific perspective, which makes it difficult to generalize its findings. But the researcher's experiences in a network of different schools and their teachers suggest similar tendencies in general, even though the content of the others' challenges might be different. However, this network has also shown that scenarios can immensely differ just because of the people who work in certain positions. The ET's narrative has depicted many situations in which

single decisions by individuals had or could have had long-term consequences. If the mindset of the acting *PITKO* or the technological preferences of the IT-department in charge differ only slightly, the whole narrative could look different for a school which is in a similar situation. Furthermore, the ET mentioned at several points, that she was frustrated or quickly got emotional in response to her colleagues' behavior. Therefore her account is likely to be tinged by these emotions. Other ETs might have different attitudes and mindsets, which would produce a totally different narrative. Additionally, the perspective of the ET decreases the amount of data on other stakeholders such as the school authority, the students or their parents. All the data obtained about them have been filtered by the ET and her perceptions. One more limiting aspect is the influence of the storytelling on the subsequent analysis. As the focus of the ET was on the relationship with her colleagues and her concern for how to overcome her colleagues' mental barriers, this research's concluding analysis also focused on these challenges instead of a stronger emphasis on the ET's role in the general change process.

But considering the complexity of the barriers that have been pointed out through this research, the focus seems justified and likewise reveals other aspects of the ET's role which might have not been anticipated beforehand. Showing empathy and being able to reflect on it appear to be important components in the phase of initiation especially in such complex environments and conditions; whereas other aspects of her role proved not to be as necessary in her school's beginning, thus, their focus was not on technology or practical training of the colleagues. This situation will surely change as soon the process advances to the next phase.

The strongest barriers within the teachers towards the process of change turned out to be a general skepticism with regard to the *digitalization*, a lack of awareness of its meaning and implications for school, and a missing natural desire for cooperation and mastery through continuous education. Furthermore, the structural conditions of an archaic bureaucratic school system have been pointed out as external constraints impeding cooperation and continuous education as well. Moreover, these structural conditions were found to not be in line with the increasing responsibilities schools are burdened with especially regarding the task to be responsible for constant change.

Analyzing these findings in an interdisciplinary approach has opened up the range of tools for practical guidance by viewing teachers as individuals who are operating in a tribe. The most important take-aways from this analysis was to actively create impulses for cooperation in a system which has no need for it and find ways to constantly show appreciation and recognition for all the work that is done at school.

More general implications this research wants to offer refer to the structure of the German school system. If individual schools are burdened with a sheer amount of responsibility, they likewise need

to be trusted with autonomy. Keeping archaic bureaucratic structures while telling the schools to cope with change on their own is an inextricable conflict on behalf of the schools. Only politics can change the system in the long run. But schools should at least be able to create their own job positions and have a minimum amount of money which they can dispose of freely.

Moreover, even though other literature has pointed this out before, this research's results clearly indicate, that Germany has to increasingly break away from the perceived need for standardization and comparability of performance. They need to do so in order to measure up to the requirements of society and economy, and even more so to put the focus of education on the students. This will set our students free and thereby also our teachers.

On a smaller scale, paths need to be found in schools for strong cooperation and showing meaningful appreciation of performance. Teachers need to be enabled to create strong visions of the future through customized continuous training and the ET as one of most important change agents in the process of digitalizing schools needs to be supported by official recognition and assignment of competences.

Finally, this research suggests further research on how these changes could be put into practice exactly in such a secluding school system and which methods prove useful. Furthermore, the perspective of this research could be broadened especially with regard to the other stakeholders of educational change. Additionally, there is more room for how the disciplines of organizational development, corporate and change management, and positive psychology might contribute to increasing the capacity of schools to change.

To put all the findings of this thesis in a nutshell, it shall be concluded with the following notion: Our teachers deserve empathy just as our students deserve to be the center of our education.

Author's Declaration

I hereby declare that I have written this thesis independently and that all contributions of other authors and supporters have been referenced. The thesis has been written in accordance with the requirements for graduation theses of the Institute of Education of the University of Tartu and is in compliance with good academic practices.

A handwritten signature in black ink, appearing to read 'J. Schmid', with a long horizontal stroke extending to the right.

17/08/2020

Glossary

Saxony	Saxony is one of 16 federal states in Germany. As one of the Eastern states, the school system had to be reformed immensely after the Fall of the Berlin Wall. It has been in place since 1992.
school authority	This is the institution which provides the financial means to equip the school with regard to the buildings and their maintenance, technological equipment, teaching material, learning material for the students such as textbooks and workbooks. They also pay the maintenance and office staff, but not the teachers or school management as they are directly paid by the federal government. Usually the school authority is the city administration or the rural district in which the school is located and they mostly have the responsibility for all of the schools.
school district	The school districts are the administration offices of the Ministry of Education, thus, they are executing the governmental laws by organizing the practical preparatory service of teachers in training, assessing the quality of teaching, drafting the final examinations of the students, working at the curricula, taking care of the hiring and distribution of teachers, organizing continuous education, and so forth. Saxony has 5 school districts, which are quite independent from one another, for instance as a teacher it is very difficult to move from one district to the other, because the current school district can deny a teaching position in the new district.
school management	Talking of the school management in a German context refers to the principal of the school and her or his deputy.
rural district	Germany's communal structures are organized in rural districts which each administer several cities and communities.
Digital Pact	The Digital Pact is a package of public funds provided by the German national government, which was adopted in June 2019. The administration of the funds was passed on to the federal governments. In Saxony the administration of the funds was then passed on to the school authorities. In order to get money from the funds schools have to draft a media education concept which needs to be approved by the school authority.
<i>Oberschule</i>	One of the two institutions for secondary education in Saxony. Students go to this type of school from 5 th to 10 th grade (usually from the age 10-16/17) in order to get a more practically oriented education in preparation for vocational training. In Germany it is considered as lower secondary education and the graduation certificate of this type of school is usually the minimum requirement for employment.

Gymnasium

One of the two institutions for secondary education in Saxony. Students go to this type of school from 5th to 12th grade (usually from the age 10-18/19) in order to receive a more academically oriented education in preparation for studying at the university. The graduation certificate is requirement for being admitted to tertiary education institutions like university. In order to be admitted to the *Gymnasium* you need a recommendation letter from a primary school teacher, whose recommendation can be overruled by the parents. However, the recommendation letters are widely accepted by parents.

PITKO

A teacher at a school who has been appointed by the school management to take care of the school's technological equipment and network. This is one of the few functions which have been officially constituted by the federal government to support the schools. This means that for this position the teaching workload of the teacher is reduced without reducing the salary. In the official description of this position, educational training and drafting concepts of media education are added. However, having been established in the 1990s this position was mainly used for maintaining the school network and equipment and has been interpreted as such ever since.

Abitur

These are the final examinations at the end of the *Gymnasium* which need to be passed to graduate. The finals consist of oral and written exams which are designed by the Ministry of Education and not to be seen by anyone until the day of the exam. So the teachers do not know which topic or task will be part of the exam and therefore have to prepare the students for every topic in the curriculum.

practical preparatory service

This is the in-service training of teachers after graduating from university. They are placed at a school by the school district and have to attend additional theoretical training once a week. After 12 to 18 months the teachers in training have to pass final exams which consist of two practical lessons and oral exams on pedagogy, methodology and school law.

DAZ status

This is a status students are given if their mother tongue is not German and their language skills accordingly are below average. With this status students have the right to obtain additional language training and are allowed for special facilities with regard to grading.

faculty

Each school in Germany is divided into faculties consisting of teachers who teach the same subject. Usually every teacher at a *Gymnasium* is a member of at least two faculties. Each school year the members of a faculty appoint a head of their faculty who is the mediator to the school management and in charge of drafting the financial needs of the faculty. If the school management needs to provide information to all the teachers or issues certain activities,

the heads of the faculties are required to pass on the information and issues. Likewise he or she is asked to report back.

open lessons

This is a colloquial term used by teachers to speak of their teaching workload. Every teacher at a *Gymnasium* is required to teach 26 lessons per week. For some officially acknowledged extra tasks such as being responsible for DAZ students teachers receive open lessons. This means they have to teach less but are still getting paid full-time. Sometimes the school manages to provide open lessons internally for extra tasks that are not acknowledged. This is only possible if there are more teachers than needed and if the school district does not need additional teachers for other schools. Therefore it is very rare to get these open lessons.

DigiTeam

The name of the team founded by the ET.

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Appendices

Appendix 1: Of unawareness and overprotection – Daring the students and parents – As part of the autoethnographic account of the educational technologist

SV: I think it is time to come to a last group of stakeholders in your case, who kind of belong together even though they might have different interests. So tell me about your encounters with students and parents during this change process.

ET: Well, the students as such are certainly the most important party in this whole process and of course it is also important to get their parents on board. However, the points of contact with both parties are still limited, as these are mainly created in practice and we have not yet made enough progress in our process for this. But there were a few points of contact which have raised interesting tendencies.

SV: Then let us start by having a look at the parents and save the most important stakeholders for last. What is the situation like?

ET: Here, too, the relationship or attitude to the change process is divided according to what we know so far. The overwhelming majority is positively inclined towards the digitalization of our school and recognizes the necessity. After all, parents are also part of the social pressure that currently prevails in Germany. But when it is a matter of practical implementation and suddenly their own responsibility comes into play, they immediately see problems and become an obstacle themselves.

SV: What exactly do you mean by that?

ET: This was best revealed during the Corona pandemic. If we want to be able to train digital skills in a meaningful way at school - even outside the pandemic, by the way - it is essential that the technical prerequisites are also provided at home. This means above all a broadband connection and sufficient technical equipment in a family household. Of course, we in Germany have the problem that there are many areas that cannot yet be connected to broadband Internet, but there are also households that could do so and but decide not to. As a result, many students did not have sufficient Internet access during the lockdown. Other families did not have printers and complained about the large number of worksheets. Other families, however, complained about using the computer for too many assignments because they were in the home office and only had one device for the whole family. At this point, I certainly do not want to deny at all that it is financially very difficult for many families to acquire several devices and that it is the duty of politics, especially since education in Germany is basically free of charge, but the requirements that arose from this family perspective are simply not viable for us as a school.

We were constantly caught between two stools. On the one hand, we were supposed to fulfill our pedagogical responsibility and take care of the students more than just by providing them with worksheets to print out, but it was also not supposed to be too much work at the computer, as there

are textbooks that are much more natural and useful. Some parents wanted more digital approaches, other parents already complained that I had obliged their children to report their learning progress to me regularly at least by email.

I had to make my lesson preparation available through various channels, all of which had different methodological requirements. During Corona times I planned my lessons twice, sometimes even three times and in the end, I had to run after many parents who avoided any school contact for 12 weeks.

As you can see, the chasm is wide. Although I believe, measured against the many positive responses from many parents, that the vast majority supports the process. Nevertheless, during this time it has become apparent that the small minority who are against it has a disproportionate influence on the process. Because as soon as a parent is dissatisfied with the privacy of the video conference or has a problem with teaching on a digital learning platform, they can undermine the whole process. In Germany, the unconditional principle of equal treatment applies, which means that no student may suffer a disadvantage if, for example, he or she cannot participate in the video conference or learning platform. So if parents complain that they do not have a device for their child, as a teacher I must not insist that the child has to learn in this way, which I understand. In case of doubt, I must therefore always offer everything on several channels. You can do that for 12 weeks, but not permanently. So as long as we cannot take over and guarantee the technical equipment of all the students, the minority of these parents hold all the aces in their hands.

But as I said, most parents are very positive, have praised the digital use of some colleagues, and have called for even more such developments. Many have taken the opportunity to buy their children new or their own devices or even joined me for a little virtual training to understand how Zoom works. At the end of the lockdown, all the parents in my own class were even present at a virtual parents' evening when the school reopened and I had to pass on all the information.

SV: So as long as politics are going to take care of the equipment in the long run, you might be able to handle the requirements of the parents?

ET: I think so. But the question of whether and how politicians will take responsibility for this is another story altogether.

SV: You might be right about that, so I guess we can move on to the students. Where are you at with them?

ET: Among the students, we have noticed two aspects in particular in recent months which are contrary to each other. The Corona pandemic, for example, has brought one thing very clearly to light. Our students have a huge deficit in digital literacy and many aspects of the New Learning Paradigm. I would like to take this year's graduates as an example. For them, the lockdown occurred three weeks before the end of their schooling, and the rest of the school year would then only consist of the final exams. But they were so panicked by these three weeks, which they would lack in normal classes, that they tried for weeks to suspend the final exams. But considering the fact that they want to apply for university studies in autumn with that same degree, but felt unable to cope

with three weeks of lessons at home on their own, this reveals a lot about our educational system and its deficits. As soon as we remove the teacher and the daily structure of the school, which is determined by the timetable and curriculum, from the equation of our school system, a large number of our students were suddenly unable to act. Even politics had to realize this and was forced to cancel the obligation to give grades and suspended the decision on grade retention according to the students' grades. Even a summer school was officially introduced to make up for all the deficits that had arisen - deficits that had only occurred in relation to all the state requirements in the first place.

SV: How did you recognize the deficiencies in your students?

ET: Well, especially in their behavior during the lockdown. Many of my students, especially my 8th graders, avoided contact with me in a variety of ways. Since as a subject teacher I have no contact details of my students and the social platform, as I said, was not usable, I had to rely on the students to contact me. I had even set up a Moodle learning platform for them and offered zoom conferences, but this was not accepted by the vast majority of the class. As a consequence, after the lockdown, they had not done any of their tasks for English and had to at least make up for the points I considered to be particularly important in addition to the normal lessons.

SV: To what do you attribute this behavior?

ET: Students have often justified this with missing or limited technology, but when I look at the main points of the New Learning Paradigm, it is mainly due to the lack of competences in self-regulation. Where are these supposed to come from in a system that controls everything for its students? Teacher-centered teaching, which they follow passively, fixed timetables, tightly woven curricula, even their motivation is controlled by our grading system. Suddenly, all that disappeared. Even grades no longer existed, and they should now find the motivation to learn intrinsically within themselves, as well as the ability to structure the learning itself. Some students were very blessed with very committed parents who supported them perfectly. But it simply shouldn't be necessary, especially if the parents have to work at home themselves.

SV: And you think technology could have helped?

ET: Absolutely. My own class provided the best evidence. Since I was in close contact with the parents in my class, I was able to contact the students in a completely different way and take them into account. For them, I had also set up the learning platform and included all kinds of tools that could help them to structure and motivate themselves. There were badges for achieving certain lessons, various learning games and tasks that always showed them the mistakes right away. In some places, they were also able to work together with their classmates who they missed so much. Their highlight were the weekly video conferences in which we played learning games together as a class and talked about everything that was on their minds during Corona. I was not able to do normal lessons in the form of webinars, the structures were simply not given, but it was still enough to give them the motivation to structure themselves better. This was also confirmed by an extensive survey I conducted during a seminar on self-regulation. The results confirmed that this way of

learning had an incredible influence on their motivation and also helped them to structure their learning time at home. Many parents also confirmed that their children had acquired an incredible amount of digital know-how.

SV: These are indeed indicators of positive influence. But you mentioned in the beginning that there is also an aspect you have observed which is in opposition to that?

ET: Yes, so we have the students who have a lot of deficits in these areas and on the other hand students who are very skeptical about the digitalization of the school.

SV: The digital natives are not in favor of getting more digital technology into school? Now, I am curious about your reasoning.

ET: Right. Well, I think the reasons for this will again be many and varied in detail. But in general, it can be assumed that they too, like their teachers, are a result of the same socialization. In fact, it is extremely interesting that the older they get, the more the skepticism increases. While our little ones can hardly concentrate from joy when we use the iPads, the big ones sometimes roll their eyes when I just put the word in my mouth. And in terms of this socialization aspect, I see three major issues in particular.

Firstly, just like their teachers, students have only a limited imagination of what the future of their education might look like due to a lack of inspiring sources. When we asked them in the interviews how they could imagine their classroom of the future, using all the resources, creativity and money they wanted, the result was, on average, a teacher standing at an interactive panel in a frontally arranged classroom in front of students all holding their own tablet. No matter how hard we tried to free their minds through various incentives, they always ended up in the same classroom. How could it be any different? They had spent more than half of their lives in these very rooms and had not seen much else. And fantasy, as we all know, needs to be fed. Interestingly enough, the possibilities of technology were foreign to them too, since they knew no more than the teachers did that you can now write on a tablet by hand, to name just one example. And they are the generation we always call digital natives. But we believe that this is mostly limited to smartphones and their social networking world. Young people may have a quick mind or intuition when it comes to digital technologies, but that obviously does not mean that they know and understand everything.

At the same time, and this is the second point, they are also part of the same skeptical society as their teachers. Even if they are only too happy to contradict their parents and teachers, especially on social and environmental issues, our students are just as critical of the digitalization process and use similar phrases such as the problem of data protection, diminished social skills, cyberbullying or fake news when justifying their skepticism. The younger students are at this point more innocent and impartial, whereas the older students from the age of 15 are already quite firm in their opinions. For example, a 17-year-old student at the school conference expressed concerns about the brand issue because he disliked brands to have a platform for promotion in schools. Despite my understanding for his concerns and my attempts to explain why no other decision was possible at this point in time, he voted against our media education concept, knowing full well that too many

votes against it would mean that the digitalization and all funding applications would have to be put on hold. Also among the students, we have the problem of not having enough time for explanations and discussions to break down prejudices and uncover misconceptions. So even with the students, the change process is not a no-brainer.

SV: I can see that indeed and I am really a little surprised. But you also mentioned a third point in the socialization of the students.

ET: That is right, it concerns above all the socialization of the students through our educational system. I mentioned at the beginning what influence this permanent fulfillment of standardized values has on the students. If I am a very good student by meeting the teacher's requirements in the best way, then it is only logical that I want to know exactly what these requirements are. So our students have adapted to the system very efficiently over the years by making efforts only for grades and preferably letting the teacher explain everything because then you also know what the test is really about. That is why our students do not like group work, whereby they have to make an effort and think about a topic that in most cases is assigned to them by the teacher, they have to deal with the peculiarities of their group members, although they have never learned to cooperate properly, and all of this in order to not even have something solid for the next test at the end, but to have to listen to their teacher again anyway because they did it wrong.

If we now bring the technology into play, the older students in particular, can very well anticipate that things would change, that they too would have to get used to new concepts of learning and that the teacher's lecture would no longer be the focus of attention in the classroom. The fear of change then seems to be greater than the joy of possibly working with modern technology.

Meanwhile, I find it really frightening how deeply this system is engrained in our habitus and how little it inspires our students, instead, it educates them into conformity. Finally, it should perhaps be mentioned here that despite some concessions to the situation regarding the grading system, the Ministry of Education could not persuade itself to change anything in the standards of the Abitur examinations. Despite the official admission that we were not able to fulfill the curriculum due to our structural errors, the scope of the exams will remain virtually unchanged in the coming year. So you can see that these standards dictate the premises and the student is definitely not the focus of their decisions.

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