

Chapter 4

Organizational Learning and Digital Transformation: A Theoretical Framework



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4.1 Introduction

There is a widespread agreement that the new information and communication technologies decisively shape and influence the process of modernization during digital transformation (Beck 1996; Castells 2001). These technologies not only influence our daily lives, but they also influence organizations and their actors. To offer an example, the electronic filing out of the tax return forms directly affects the processes of the preparation of these forms. But this above all affects the internal financial management. Another example would be contactless payment with smartphones which has an impact on payment practices but also on retailers and cashiers. Therefore, digital transformation also affects organizations. “The social and economic changes – e.g., globalization, computerization, and economization – have forced more and more companies and institutions in recent years to restructure their organization and adapt them to the new circumstances”¹ (Stang 2003, p. 79). This affects all kinds of businesses. For companies, digital transformation leads to transformation in their internal work organization. For the members of organizations, new media are increasingly finding their way into every day’s work. Especially for educational organizations, there are two kinds of impact: Their internal work organization is affected, and the digital transformation is forcing them to introduce media literacy teaching.

While there is a certain discussion on “virtual companies” and the spatiotemporal delimitation of the work in the economic sector (Albach et al. 2000; Rohde et al. 2001), a much broader discourse of digital media within educational science exists

¹All quotations that are originally in German are translated into English by the authors.

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since the 1990s. It discusses the handling of the new media on the level of the organizations and the level of transformation and reception of knowledge (learning and teaching). This applies not only to the standard schools but also to higher education, adult education, as well as early childhood education. Interestingly, the influence of the digital transformation on the organization takes up little or no space (an exception is a study by Richard Stang 2003 on adult education centers). This becomes even more astonishing when one takes situations such as the current corona crisis in the count. This crisis showed us to what extent the digital transformation affects the level of all the organization: processes are digitized, video conferencing from exception becomes normality, and telecommuting becomes a standard way of working. While work from home was unusual in some areas and had to be fought for, it was now implemented within a few days (Mergener 2020).

In summary, digital transformation affects educational organizations as well as other types of organizations. In cases of business organizations, the possibility of working from anywhere and at any time becomes an important factor in attracting skilled workers. The politics compare educational systems concerning their level of digitization and force changes in the educational systems through appropriate programs. The impact of the new media on learning and teaching in educational organizations is widely discussed. Also in their cases, the digital transformation affects the organization itself. While there are extensive studies on the influence of new media on teachers and those that receive the knowledge, especially at the level of educational organizations, the relationship between the organization, actor, and digital transformation has so far been little examined.

The discipline “Organizational pedagogy of educational science” deals with organizational development and/or organizational learning. It considers not only educational organizations but also organizations in general, and the goal of her research is learning in, from, and between organizations (Göhlich et al. 2016). Our chapter examines from a theoretical perspective the relationship between the organization, actor, and digital transformation. We will conceive digital transformation as irritation or crisis that has to be processed by the organization. If the action routines end, as we are currently observing in the corona crisis, the organization is forced to handle it. Organizational learning is then just as possible as protectionist action. The first part of the chapter will deal with the current debate on digitization. In the second part, we will look deeper into the basic theoretical understanding of this process. This primarily involves determining the relationship between organization and actor. Since the digital transformation is conceived as a crisis, in the third part, we will try to associate this with the concept of transformative education. The irritation or crisis through digital transformation can have different outcomes including refusal, passive appropriation, or a change of the organization. This change will be differentiated into a learning or an educational process. These theoretically conceived types of organizational handling of the digital transformation are discussed at the end. The chapter aims to create a theoretical framework for the relationship between the organization, actor, and digital transformation, which can serve as the basis for empirical work.

4.2 Digital Transformation: An Inventory

If we focus on the term digital transformation, we can mention that it is out of focus. Firstly, transformation denotes fundamentally a transition from a previous to a new state. Secondly, it remains unclear what digital means. Does it refer to the big data (Buschauer and Wadepuhl 2020); to the introduction of digital media, for example, when counting steps (Krämer et al. 2020); or to the new social forms through algorithmization and artificial intelligence? This debate cannot and should not be opened here. For our context, it is sufficient to consider the transition from the analog (paper, files) to the digital (networks, new media, cloud) as well as the associated changes in practice. In the first step, the different types of organizations that are affected by the digital transformation will be illustrated. In a second step, the organizational handling of the digital transformation will be discussed. The chapter focuses on the level of the organization and for educational organizations the level of teaching and learning. Finally, the article presents the opportunities and challenges of digital transformation.

4.2.1 *Organizations and Digital Transformation*

Different types of organizations appear in the debate about digital transformation. In the educational science debate, organizations such as schools (Lund 2018), universities (e.g., Robra-Bissantz et al. 2019, topic part of the journal for pedagogy 2011), adult education (Aschemann 2017), libraries (Stummeyer 2019), or the research institutions (Stimm 2017) are addressed. Business organizations are also key players in the digital transformation of the educational sector. For example, the online platform YouTube is described by Birgit Aschemann as an education provider (Aschemann 2017, p. 4), and companies such as Mentimeter or Zoom provide required online tools for educational processes. Business organizations themselves are usually addressed with the catchphrase “virtual company” (Albach et al. 2000; Rohde et al. 2001). Also, the cultural sector, especially in times of the corona crisis, is being affected by the digital transformation: Museums offer virtual museum tours, or clubs transfer the music of DJs to the living rooms at the weekend.

Consequently, these organizations have to deal with different types of requirements. Christian Swertz (2017), for example, stresses the need for digital media literacy. In times, where public discourses are increasingly taking place in the digital space, a digitally sovereign and responsible citizen is necessary for the proper functioning of democracy. These digital spaces enable new forms of participation. Educational organizations are increasingly asked to encourage people to take part in these forms. Schools or extra-curricular educational work can and should enable people to participate and to open up new “opportunities” (Swertz 2017, p. 4). Also, educational organizations, such as universities or further education institutions, need to distinguish themselves in a further education market with innovative teach-

ing and learning concepts (Röwert 2019, p. 43). Universities, for example, are increasingly being asked to offer online courses (Pensel and Hofhues 2017), and the increase in the number of students makes new teaching concepts necessary (Nolte and Morisse 2019, p. 105). Business demands are also formulated for educational organizations. Interdisciplinary and global teams increasingly require time- and location-independent work and with them new skills (Zickwolf and Neu 2019, p. 51). These digital skills are now labeled as “desirable skills” (Aschemann 2017, p. 2), and there is a need for constant training. This affects not only the organization itself but also the teaching staff (Aschemann 2017, p. 2). Digital media becomes for them important “to promote learning” (Kollar and Fischer 2018, p. 1553).

Politics try to enable educational opportunities for everyone through digital technologies. The “Education offensive for the digital knowledge society” of the German Federal Ministry of Education and Research (BMBF) is worth mentioning. The importance of digital transformation is also framed on a European level. “The European Commission sets this focus in recognition of the ever-increasing professional and private importance of digital technologies in an increasingly digitized environment” (Aschemann 2017, p. 2f). Therefore, the relationship between the economy, the labor market, and education is addressed. Aschemann notes that there is no lack of target definitions in politics, rather adult education institutions are not prepared for it (Aschemann 2017, p. 4). For Rohs et al., the “central development task of adult education is to use more digital media” (Rohs et al. 2017, p. 2). Digital media enable participation in society and the labor market and contribute to quality development in adult education.

4.2.2 Coping with Digital Transformation

The question that arises is how the organizations deal with the requirements of the digital transformation? How can we spell out the organizational practice regarding digital transformation? Therefore, we differentiate between the organization and its actors. On the first level, the organization of the work and the planning of offers are affected. On the second level for educational organizations, we can differentiate between the impact on teaching and learning (von Hippel and Freide 2018, p. 974 for this differentiation).

There are diverse practical examples and evaluation results for the implementation of digital structures within organizations. The miscellany of Robra-Bissantz et al. (2019), for example, evaluates the implementation of explanatory videos, serious games, hack days, augmented and virtual reality, or inverted classrooms for the higher education sector. Maria Stimm (2017) analyzed new digital forms of program announcements for the adult education sector, for example, on the websites of the institutions. These studies primarily focus on the supply and demand aspects. There is a “consistent focus on the technical handling of media” (von Hippel and Freide 2018, p. 995). However, the effects on the organization are only marginally discussed. “The question of what effects the new media have on the organizational

structure of traditional educational institutions has so far not been considered by adult education research and organizational research” (Stang 2003, p. 79). Stang states in his study on adult education centers that new media primarily have an impact on the organization of the administrative work. In the future, however, the influence on the development of offers will be anticipated. The function of the new media is to improve external relations, such as increasing the image or reaching new target groups (Stang 2003, p. 92f). Aiga von Hippel and Stephanie Freide also refer to the effectiveness of change through new media in administration, offer-planning, and marketing (von Hippel and Freide, p. 974). Regarding the level of the organization, Stang states that there is overall a good technical infrastructure. Even if this shows a willingness to change, it still adheres to traditional forms of offer and internal organizational structures (Stang 2003, p. 94). Rohs et al. aptly state that the digital transformation does not only affect the supply and demand side: “The introduction of digital media has an impact on all areas of activity in adult education and also leads to the development of new fields of work” (Rohs et al. 2017, p. 3).

Furthermore, teachers and learners as actors of the organizations are also affected. “On the teaching/learning level, new media changes teaching and learning as well as the role of teachers and learners” (von Hippel and Freide, p. 975). Aschemann (2017) refers to an “EBmooC” which was developed from the association CONEDU with the TU Graz and with geht.digital.at. It addresses adult educators outside of the organizational context. The starting point was the question of “a specific further training offer on job-related digital competence for adult educators” (Aschemann 2017, p. 5). Rohs et al. identify the media literacy of teachers as a central field of action. “Against this background, it seems necessary to take a closer look at the requirements in dealing with digital media in the core of adult education, the work of the teachers” (Rohs et al. 2017, p. 3). Birkenrahe et al. differentiate teachers regarding digital transformation into the motivated, the undecided, and those who refuse (Birkenrahe et al. 2019 p. 31). The development of teachers’ skills is the key factor for the proper use of the new media. “The use of digital media has shown changed and new skills requirements in all areas (Rohs et al. 2017, p. 3). This development of media competence is also the central goal for von Hippel and Freide (2018). According to them, new media are “didactic tools” (von Hippel and Freide 2018, p. 974) that can be used for teaching. Against this, the achievement of better learning outcomes through digital media is discussed (Kollar and Fischer 2018; Eckardt and Robra-Bissantz 2019; Huttner et al. 2019). Friedrich W. Hesse and Jens Jirschitzka use the “Activity-Centered Analysis and Design Framework” by Goodyear and Carvalho (Hesse and Jirschitzka 2019, p. 13). It focuses on the spatial-technological structure, the task structure, and the social structure of new media about learning. The use of digital technologies for the learner is for “micro didactic purposes” (Stimm 2017, p. 2).

It is striking that both the teachers and the learners are often discussed without a reference to the organization. Concerning the teachers, the development of competencies is addressed in the media education discourse. Concerning the learners, the question of learning psychological models that go hand in hand with the new media is discussed. Contrary to this, the perspective of organizational peda-

gogy focuses on the relationship between organization and actors to organizational learning in, from, and between organizations. This perspective helps us to understand the coaction between actors and organizations. Especially educational organizations have the peculiarity that learning is organized in them and that they can be viewed as learning organizations themselves. Learning is therefore united in two ways (Feld and Seitter 2018, p. 84). But before going into this, the following chapter briefly discusses the opportunities and challenges of digital transformation.

4.2.3 Opportunities and Challenges of Digital Transformation

Both opportunities and challenges are discussed as a part of the debate on digital transformation. The development of digital identities in “digital thinking rooms” (Hesse and Jirschitzka 2019, p. 14) is seen as an opportunity as well as the possibility of new forms of teaching. Thanks to this, e.g., learning can be organized more flexibly regardless of strains of time and location. Digital transformation combined with digital media literacy, as discussed by Swertz (2017), enables new forms of participation in the democratic processes for the citizens. So-called MOOCs, lectures by qualified professors, can be accessed worldwide without being held back by tuition fees. Platforms, such as YouTube, provide equal access to knowledge for everyone. Digital media thus enables a self-directed form of knowledge acquisition (Kollar and Fischer 2018, p. 1553). But, digital transformation also brings challenges with itself. Problems with data protection (Ezat et al. 2019, p. 182), job losses due to automation (Aschemann 2017, p. 3), or the question, whether e-learning offers an increase in efficiency (Aschemann 2017, p. 5), are just some that are frequently discussed. The question of relationship in learning processes is also occasionally analyzed, as well as the loss of importance from teachers through digital reproduction/open educational resources (Aschemann 2017, p. 5). Stang also states the anticipated concerns of staff in adult education centers, e.g., increasing workload or missing training (Stang 2003, p. 90f).

Digital transformation enables the reduction of barriers between persons and institutions through broad accessibility. But there are also challenges related to pedagogical and technical questions. The German primary school association made a critical statement regarding digital media in primary schools (Hecker 2019). The age of primary school children and the unforeseeable consequences of digitization to environmental pollution (Welzer 2016) are often used as arguments against the introduction of digital media in primary schools. We will leave those at side though because the goal of our chapter is not to evaluate the advantages and disadvantages of digital transformation. The question that needs to be asked here is rather to what extent the practice in organizations changes due to this “media hype” (Hecker 2019, p. 39)? To what extent can organizational practice be determined between actors, organizations, and digital transformation? Particular in educational organizations, there is the aspect of education and pedagogy, i.e., the extent to which learning in organizations is also influenced by the digital transformation.

4.3 Organizational-Theoretical Considerations: The Relationship Between Actor and Organization

For an understanding of digital transformation in organizations, it is important to clarify the relationship between the actor and the organization. Does organizational learning mean the learning of actors in organizations? Or does organizational learning take place independently from the actors? A central article within this debate was written by the sociologists Chris Argyris and Donald Schön in 1978 (Pätzold 2017; Göhlich 2018). For these authors, the paradox of organizations is that they cannot be understood only as a collection of individuals nor that there are organizations without them. It can be deduced from this that individual and organizational learning are interdependent, but cannot be the same. “Further, it is clear that organizational learning is not the same thing as individual learning, even when the individuals who learn are members of the organization. There are too many cases in which organizations know less than their members” (Argyris and Schön, p. 9).

For Argyris and Schön, knowledge structures involve acting and learning. Without making an explicit reference to Karl Mannheim’s sociology of knowledge, they also differentiate between explicit-theoretical and implicit-atheoretical knowledge (Dörner 2011; Bohnsack 2014). Explicit knowledge is a communicative and generalized knowledge and serves to interpret actions (Dörner 2011, p. 167f). Every reflected action has a cognitive basis that reflects norms, assumptions, or models that we consider credible (Argyris and Schön 1978, p. 10). Learning is then not a reinforcement of habits, but a testing and restructuring of a certain type of knowledge (Argyris and Schön 1978, p. 10). Argyris and Schön call this the “theory of action.” The emergence of rules applies to the collective and forms an organizational “we” (Argyris and Schön 1978, p. 10). The “theory in use” can now be distinguished from the “theory of action” (Argyris and Schön 1978, p. 11). Mannheim speaks from implicit-atheoretical knowledge (Dörner 2011, Bohnsack 2014). It is the pre-reflexive knowledge that guides our actions, and that is difficult to access reflexively. While the “theory of action” is reflected in organizational charts, for example, the “theory in use” can be observed in practice (as incorporated knowledge) or reconstructed through the implicit knowledge base of the organization members (Bohnsack 2014). We all know this from organizations: what is expressed in mission statements does not by far structure the practices in organizations. One could imagine that the compatibility of work and family is anchored in the mission statement, but the temporary contract of a pregnant woman is not extended.

Argyris and Schön determine the relationship between actor and organization in a way that the actors act on behalf of the organization. They understand the organization as a complex organism in which each actor has a self-image that he compares with the overall picture of the entire organism. “Each member of the organization constructs his or her own representation or image, of the theory-in-use of the whole. That picture is always incomplete” (Argyris and Schön, p. 16). The self-image is incomplete, and public pictures, so-called public maps, are necessary to complete it. “Organizational theory-in-use, continually constructed through indi-

vidual inquiry, is encoded in private images and in public maps. These are the media of organizational learning” (Argyris and Schön, p. 17). Organizational learning is then the reconciliation of “private images” and “public maps.” Concerning organizational learning, Argyris and Schön differentiate between single-loop, double-loop, and deuterio-learning. In single-loop learning processes, the actor’s theory of action changes, but no organizational learning takes place. In double-loop learning processes, external requirements set new priorities within the company. “We will give the name ‘double-loop learning’ to those sorts of organizational inquiry which resolve incompatible organizational norms by setting new priorities and weightings of norms, or by restructuring the norms themselves together with associated strategies and assumptions” (Argyris and Schön, p. 24). If the organization finds forms for the organization of double-loop learning, Argyris and Schön speak of deuterio-learning.

Organizational learning from this perspective is linked to the practice of the organizational members. Claudia Fahrenwald writes: “Organizational learning in the context of practice is understood as a permanent process of (re) ordering and giving meaning” (Fahrenwald 2016, p. 103). The basic assumption of this practice-theoretical perspective is that the knowledge structures action and the practice of the organization members (Dörner 2011). In this context, learning is much more an “interactive, social process that is in principle open to results” (Fahrenwald 2016, p. 102) and less a cognitive achievement. Michael Göhlich expresses a weakness of the Argyris and Schön model. He criticizes the neglect of “incorporated practice patterns” (Göhlich 2018, p. 371). Nevertheless, this basic theoretical perspective opens up the possibility of understanding the digital transformation as a “public map” that leads to confusion in the “private images” of the organization members. This must be reconciled in the organizations at the level of the “theory of action” as well as at the level of the “theory in use.”

According to Göhlich, organizational learning can be divided into three different categories: individual learning of the organization members, learning by participating in communities of the organization, and finally learning of the organization (Göhlich 2018, p. 374). In this way, learning does not remain at the individual level, but it is incorporated into the practical community of the organization and the structure of the organization. With his theory of organizational learning, Göhlich focuses on the mimetic processes. “It should be noted that organizational learning should not only be understood as a reflection and change in mental models, but also as mimetic and possibly reflective processing of organization-specific practical patterns” (Göhlich 2018, p. 375). Against this background, he problematizes the lack of views to the learning content and distinguishes four dimensions of learning (Göhlich 2018, p. 375f): learning a knowledge, learning a skill, learning life, and learning to learn. While the first relates to (specialist) knowledge that also exists independently of the body, the second relates to knowledge that is tied to the person. The third relates to knowledge that becomes necessary in transitions and, above all, uncertain times of (post) modernity. The fourth dimension of learning relates to all learning objects.

These four dimensions will be elaborated in the following concerning the digital transformation. The digital transformation doesn't affect only one dimension; the organization has to cope on different levels with the digital transformation. The organization must provide knowledge that is independent of the actor, for example, for digital forms of networking (knowledge-learning). The actors must also have the opportunity to master these digital media, for example, digital networking tools. The function of the educational organizations, which was worked out in the first part of this chapter, should be pointed out here: they have to impart media competence at various levels (skill-learning). At the level of life-learning (third dimension of Göhlich), there is another aspect of digital transformation: it is dealing with the uncertainty that goes with it. Hannah Arendt already emphasized in her famous quote the job loss anticipated by automation. "What lies ahead is the prospect of a working society that has run out of work, the only job that it still understands" (Arendt 2014, p. 13). Not only the organization is affected by the digital transformation but also the individual actor and society. After all, the entire idea comes down to the institutionalization of this learning. The digital transformation requires, in the sense of deuterio-learning, to counter the rapid change through forms of reflexivity (Beck 1996). The digital transformation not only challenges the organization but also the actor and the relationship between the actor and the organization. Digital transformation understood as irritation must be worked on by organizations and actors.

We believe that actors and organizations are in a reciprocal relationship. In our understanding, organizational learning is neither exclusively individually nor structurally. It takes place in the medium of the "theory of action" and the "theory in use." The digital transformation addresses all four dimensions of learning described by Göhlich. Surprisingly, the central distinction between learning and educational processes is hardly made in the debate on educational science. This can be taken up with a transformative concept of education. It enables a differentiated view on the influence of digital transformation on organizations and their changes.

4.4 The Crisis: An Occasion for Learning and Educational Processes

This part explores the idea that there is a difference between learning and educational processes. There is hardly a distinction on this idea within the debate of organizational learning. As opposed to this, there is a wide debate on this topic within the German educational science discourse. We can differentiate educational and learning processes along with the level of transformation that happens through an object. Since organization in general consists out of individuals and at the same time is more than just the aggregation of the individuals, it also makes sense for organizations to differentiate between education and learning processes. We can understand learning as a solution to single problems, while educational processes change the

organization as a whole. Argyris and Schön distinguish this between single-loop and double-loop or deutero-learning. This will cope with the terms of learning and educational processes.

The German debate on “transformative education” assumes educational processes as a change in the “world-self relationship” (Marotzki 1990). They represent a habitual transformation and a fundamentally changed worldview, while learning is conceived as the incorporation of knowledge into existing frameworks. Following Winfried Marotzki, Nohl et al. (2015) differentiate between “frame-inherent” and “frame-transforming” changes in their empirical reconstruction of learning and education. A fundamental factor in an educational process is a crisis that stops previous routines and allows room for shifts in relevance (Nohl et al. 2015). In this context, Käte Meyer-Drawe (2012) speaks of an “occurrence.” The focus is not so much on the educational theory debate on transformative education (see for this: Nohl et al. 2015, p. 222ff), but rather on differentiating learning and educational processes from the moment of the crisis. “In this sense, crises are constitutive for the educational process in all cases, insofar as they create the necessary opportunities for new things, enable a shift in relevance and thus help new orientations to breakthrough” (Nohl et al., p. 68).

Now we can transfer this model to the organizations, which we above all understand as human social structures. “Organizational learning occurs when members of the organization act as learning agents for the organization, responding to changes in the internal and external environments of the organization by detecting and correcting errors in organizational theory-in-use, and embedding the results of their inquiry in private images and shared maps of organization” (Argyris and Schön 1978, p. 29). According to Argyris and Schön, organization members act on behalf of the organization and determine the relationship between the individual and the organization. If some irritation arises, as Nohl et al. (2015) have worked out, it influences the “theory in use” within the organization. The digital transformation as a central theme of (post-) modernity functions as irritation or, in its broad context, as a crisis that can be seen as a learning and/or educational occasion. If singular learning takes place in the sense of single-loop learning, we speak about organizational learning. Digital infrastructure is implemented: the “private images” and “public maps” are compared. There is a learning of knowledge and learning of skills within the organization. If there is, on the other hand, a fundamental change in the organization, a double-loop or deutero-learning, then we can speak about an educational process, which is a changed world-self-relationship of the organization and its members. This goes hand in hand not only with new production lines but also with a shift in the understanding of the organization. This includes, for example, the changed life situation of its members through the digital transformation. Life-learning is taken into account by, for example, incorporating changes in everyday rhythm through telecommuting or issues such as job loss through automation. Learning-learning, as mentioned by Göhlich, also gains new meaning through automation. Simple processes are carried out by the machines, which fundamentally change job descriptions.

From this perspective, the digital transformation appears as a crisis and shakes established routines. It influences through its comprehensive social significance the “private images” and “public maps.” Organizations must now deal with this discrepancy. This happens either because of the influence of “public images” through politics or society or because of the “private images” of the organization members, when they demand, for example, work regardless of time and location. The crisis can lead to collective educational processes within the organization, which in the sense of a double-loop or deuterio-learning also have an enormous impact on the organization. However, if only individual aspects change, then organizational learning takes place, but the DNA of the organization remains unchanged. Finally, empirical questions remain to what extent digitization processes initiate collective educational processes within an organization and what effects they have on the organization? What are the conditions, to implement educational processes (in the way of double-loop or deuterio-learning)? What is the role of the management and what happens if they fundamentally change their actions? In which way does the management organize processes of organizational learning?

4.5 Conclusion

Our considerations have hopefully made it clear that digital transformation in (post-) modern societies is a profound and complex process. This affects not only business organizations but also educational organizations, administrations, and politics. It is necessary to determine the understanding of organizational learning and the relationship between actor and organization to consider the digital transformation with organizational learning. Following Argyris and Schön (1978), the chapter pursues an argument in which actors act on behalf of the organization and constantly compare their “private images” with the “public maps.” If there are differences, the result of these differences are single-loop, double-loop, or deuterio-learning processes. The educational-theoretical discourse on transformative education offers two central insights: The digital transformation understood as a crisis has an impact on organizations and their members. And there is a difference between learning and educational processes. With these two insights, it is possible to create four theoretical types of dealing with digital transformation within organizations. First, the digital transformation understood as a crisis has the potential to stop existing routines. This contributes to a change in the understanding of the organization. Previous action routines dissolve through collective educational processes and, in the sense of double-loop or deuterio-learning, also exert an influence on the framework-change within the organization. Both the “theory in use” and the “private images” as well as “public maps” are in the process of constant shifting. Second, digital transformation doesn’t lead to the dissolution of action routines, but rather to the establishment of new processes. It is then a matter of learning knowledge or learning a skill (Göhlich 2018, p. 375), while the understanding of the organization does not change. Only individual aspects change in single-loop learning mode, within the scope of

action of the organization. In addition to these two theoretically conceived types, two further types are conceivable. There is, thirdly, a type that implements digital artifacts that are not used. We can conceive organizations that introduce a “wiki”, a digital platform for knowledge, that is not used by any organization member. Fourthly, a type is finally conceivable that actively refuses digital transformation. The organization adopts an attitude that not only passively refuses, like type three, but also actively protects one’s action routine from digital influence. It uses arguments such as data protection or globalization.

In his studies, Arnd-Michael Nohl empirically analyzed milieu-specific factors for dealing with the rules of the organization (Nohl 2006, p. 189). If we take these milieu-specific factors into account, there are further interesting differentiations on how actors in organizations deal with digitization: Firstly, the actors can undermine the introduced digitization measures along with the habitual practices of their milieus. Secondly, the actors can understand and follow the digitization measures in a milieu-specific manner. Thirdly, they are fleshed out through informal handling. This results from the use of digital media and has proven itself widely.

Empirical work can now build on this theoretical ideal-type formation in Max Weber’s sense (Weber 1922). In times of the corona crisis, the digital transformation could be conceived as the end of previous action routines, which leads to a new negotiation of “private images” and “public maps.” It would be interesting to reconstruct this process from the practice. Then questions arise either it leads to a fundamentally new understanding of organization concerning digital transformation or it continues to adhere to previous action routines, and, for example, video conferences are only in the sense of single-loop learning used.

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