

# Innovation needs reflection

How experiences from emergency remote teaching  
can become sustainable learnings through collective  
inspection

*Antonia Scholkmann*

## Abstract

Higher education was in flux even before the coronavirus pandemic hit, triggered by shifts in the world due to digital transformations for quite some time. This has raised calls for new models of leadership, new teaching-learning conceptions and new organizational cultures, alike. The experiences of emergency remote teaching during the pandemic are, in this sense, not to be seen as a crisis to survive, but as an opportunity for transformation. However, it remains contested whether experiences made under crisis conditions can lead to sustainable learning and change. Based on crisis research, pragmatic theory on the meaning and function of reflections, and the concept of organizational resilience, the following chapter argues that collective reflection plays a pivotal role in transforming experience into sustainable change in higher education teaching and learning. This will require innovation not only in the way we conceptualize and organize teaching itself, but also how we can innovate in the processes and structures of higher education to foster new ways for collective reflection.

## Zusammenfassung

Nicht erst seit der Corona-Pandemie befindet sich die Hochschulbildung im Wandel, und dieser ist nicht zuletzt auf weltweite Veränderungen aufgrund der digitalen Transformation zurückzuführen. Dies hat den Ruf nach neuen Führungsmodellen, neuen Lehr-Lern-Konzeptionen und auch nach neuen Organisationskulturen laut werden lassen. Die Erfahrungen der Notfall-Fernlehre unter Corona sind in diesem Sinne nicht als Krise zu sehen, die es zu überstehen gilt, sondern als Chance zur Transformation. Es bleibt jedoch umstritten, ob Erfahrungen, die unter Krisenbedingungen gemacht werden, zu nachhaltigem Lernen und Wandel führen können. Basierend auf der Krisenforschung, der pragmatischen Theorie zur Bedeutung und Funktion von Reflexionen und dem Konzept der organisationalen Resilienz wird im folgenden Beitrag argumentiert, dass die kollektive Reflexion eine zentrale Rolle bei der Transformation von Erfahrungen in nachhaltige Veränderungen in der Hochschullehre und im Lernen spielt. Es ist anzunehmen, dass dies nicht nur Innovationen in der Art und Weise erfordert, wie wir Lehre an sich konzeptualisieren und organisieren, sondern auch, wie Prozesse und Strukturen der Hochschulbildung innoviert werden können, um neue Wege für kollektive Reflexion zu fördern.

## 1. Covid-19 has boosted the digitalization of higher education. Hasn't it?

From the beginning of the coronavirus crisis and the ad-hoc implementation of emergency remote teaching (ERT), commentators and practitioners alike were quick to highlight its potential as an accelerator of the long-overdue digital transformation of the higher education sector. Some even went as far as to call it a transformative moment for higher education teaching and learning overall (e.g., Haslam, Madsen & Nielsen 2020; Höhl 2020).<sup>1</sup> As can be inferred from crisis theory, though, critical and unprecedented events are highly contingent in their impact, and can easily lead to resistance, depression and regression behind a previously achieved state (Buchanan & Denyer 2013; Turner & Avison 1992). And institutions of higher education, on many levels, have been argued to have strong tendencies to immunize themselves against disruptive changes and innovations, whether in crisis mode or not. In light of this, the crucial question is whether the ad-hoc digital transformation of the higher education sector to ERT mode holds innovative and sustainable potential for the advancement of digitally enriched pedagogies.

In this chapter, I will explore the need for reflection in order to transfer the extraordinary ERT experiences gained during the Covid-19 pandemic into sustainable learnings for higher education. My argument will be based on research and theory on reflections in the pragmatic and transformative sense (e.g., Mezirow 1991), and on the concept of organizational resilience (Duchek 2020). Both theoretical strands allow innovation and change to be conceptualized as the result of critical inspection and reflection of hands-on experiences; this holds true not only on the individual but also on the organizational level.

---

1 The following elaborations are based on the European perspective. The author does not claim to understand how Covid-19 has impacted higher education on other continents and is aware that her understanding of the situation is biased by her social, racial and economic background.

## 2. Emergency remote teaching during Covid-19: Crisis or opportunity?

It has been said, and not wrongly, that a crisis is also an opportunity for development. Regarding the unexpected ERT situation in higher education, too, hopes have been expressed that circumstances will serve as a boost to innovation and transformation (for further elaborations cf. Kerres 2020). Indeed, crisis research has shown that chaotic and uncertain situations increase the probability of innovative and unconventional solutions to the problems at hand, which amplifies their potential as accelerators of change (Kazanjian, Drazin & Glynn 2000). Additionally, it has been argued that digitalization and the disruption it brings about could be exactly what higher education needs to take an active stance towards the long-overdue re-invention of its pedagogical and organizational practices in the wake of the pressing challenges of the 21st century (e.g. Lemoine & Richardson, 2019; Blayone, van Oostveen, Barber, DiGiuseppe, & Childs, 2017; King 2012).

Generally, it needs to be said that ideas of digitally enhanced or even transformed teaching and learning have not always been met with open arms in the sphere of higher education (e.g. Sjöberg & Lilja 2019), and that they have not necessarily led to innovation in teaching-learning practices either (Blin & Munro, 2008). Forms of innovation in digitally enhanced teaching have mainly taken place on the initiative of small groups of digital enthusiasts, or in cases where institutional policies led to a strong support structure (Kirkup and Kirkwood 2005; Tømte et al. 2019). However, institutions of higher education are experiencing increased pressure to become more digital as they compete to attract students. In this context, alternative solutions such as Massive Open Online Courses, corporate-funded higher education programs and further education courses are providing highly innovative solutions (e.g., Sadera 2014). These new forms of educations are challenging the traditional »going-to-university« ways of learning, since alternative concepts are seen as more timely, flexible and suited to the demands of a digitalized world (Bonvillain & Singer 2013; Bowen 2013; Hammershøj 2019; Kergel & Heidkamp 2018).

No systematic empirical research exists today on whether institutions of higher education are more or less prone to resistance to (crisis-enforced) change. Much in line with other forms of resistance to change, resistance to the digital transformation of (traditional) higher education should, however, not be attributed to individual motives and dispositions, but seen as teachers', students' or administrators' reactions to configurations and narrations at the systemic level (for an overview, cf. Piderit 2000; Scholkmann 2021; Vermeulen et al. 2017). In this sense, we need to assume that what individual teachers, students and

administrators might have experienced during ERT will form the basis of a collective narration. Given the challenging nature of the experience, this narration could easily take the direction of »never again«, »we did it, but only because we had to«, »glad it's over« and, finally, »great to be back to the old normal«. Conscious and collective communicative efforts are needed to form a realistic, yet forward-oriented and shared understanding of the one-and-a-half-year experience of ERT. I elaborate on these under the umbrella term »reflections«.

### 3. The pivotal role of reflections for individual and organizational learning

#### 3.1 Individual and collective reflections

The role and function of reflecting and reflections for learning has long been known as part of problem-oriented pedagogical approaches. They stem from writings which, in a pragmatic philosophy of science tradition, argue for experiences as foundations of truth and knowledge – which both can and must be achieved through their critical reflection (e. g. Dewey 1933; Kolb 1984; Schön 1983). Following Mezirow (1991), reflections are the cognitive and emotional act which transfers experience into long-term learning by allocating meaning to said experience. This requires active and conscious engagement (Plack, Dunfee, Rindflesch & Driscoll 2008). Also, an experience needs to be meaningful to an individual (or organization) in order to transfer potential learning to actual learning (Jarvis 1987).

Oftentimes, reflections are conceived of as individual acts of metacognitive scrutiny (e. g. Rogers 2001). However, reflections can also much in line with their pragmatic underpinnings take part at the group and collective level (Lolle, Scholkmann, & Kristensen, forthcoming). The resulting organizational learning is seen as the establishment of joint problem-solving practice, and the reflection on said practice to make learning durable (Brandt & Elkjaer 2014; Yeo & Marquardt 2010). The collective inspection of experience thereby is seen as holding value in itself, since it leads to an enrichment and even transformation of individual reflections on the dimension of social practice (Brandt & Elkjaer 2015). This goes beyond the mere scrutiny of practice in order to correct mistakes and enhance performance. Rather, the focus is placed on the »participation in

practice« (Elkjaer 2018, p. 7) and the establishment of communities of practice (Lave & Wenger 1991). Although not necessarily always transformative, reflections bear the potential to bring about fundamental change in an individual's or a group's cognitive, emotional, and social structures. On the organizational level this has been formalized in conceptions such as single-loop vs. double-loop learning (Argyris & Schön, 1978), but also, and specifically for the educational sphere, in more recent understandings of reflections as a collective practice, which is enhanced or limited by concrete contextual conditions (Kemmis et al., 2014).

It can be assumed that a crisis event – such as the Covid-19 pandemic and, as a result, ERT in higher education – is most likely meaningful and built on experiences of individual and collective practices. Given these premises, it can be argued that those involved cannot avoid reflecting and allocating meaning to what they have been experiencing in this extraordinary situation. However, the tendencies within higher education, as described above, to deflect and immunize against digital transformation can increase the probability that learnings from ERT will take a retrograde direction. This would dash the high hopes expressed for a boost to the digital transformation of higher education.

It is not the intention of this chapter to discuss whether all aspects of a digitally transformed higher education are equally desirable in the long run. The question in the current situation is, however, how individual reflections – both positive and negative – can be combined as part of an organizational learning process, and how reflecting upon experience can help to emerge stronger from a crisis situation, specifically.

### 3.2 Organizational resilience

Conceptions of organizational learning in relation to crisis argue that reflecting on experience contributes to organizational resilience. Resilience, generally speaking, means a system's capacity »to cope effectively with unexpected events, bounce back from crises, and even foster future success« (Duchek 2020: 215). For quite some time, research on (organizational) resilience was concerned with finding general factors that prevent negative reactions to crises. That it has failed to do so, repeatedly, is hardly surprising. As elaborated in the introduction, reactions to crises are highly specific and contingent, and it is virtually impossible to define general factors of resilience for specific organizational contexts. Moreover, and this relates resilience to reflections, research has found that resilience develops in phases over time and is, therefore, to be considered more as a process than a personal or organizational attribute.

This processual view is beautifully described in Duchek's (2020) organizational resilience framework. The phases before (anticipation) and during (coping) a crisis call for a preparedness to expect the unexpected (in the anticipation phase) and to accept the situation as it is and to develop and implement hands-on solutions to deal with it (in the coping phase). This requires specific resources to observe the environment (anticipation) and to coordinate the implementation of solutions (coping), respectively. The phase after the crisis event (adaptation) entails the allocation of meaning to the experiences made during the crisis through reflection. By reflecting, as well as by allocating organizational power, ephemeral experiences will be transferred into more durable and sustainable learning and development, which can serve as resources for the organization in crises to come. Most likely, these learnings will, at least to some degree, be transformative in nature, i. e. they will lead to changes in »norms, values and practices« (Duchek 2020, p. 231).

Crisis research has shown that organizational learning after extreme events can be hampered by competing interpretations of said events, disregard for expertise and opinions and rigid beliefs within the organization (for an overview cf. Buchanan & Denyer 2013). Therefore, reflections in the adaptation phase need to be appreciative, collaborative and co-constructive behaviors (e.g. Mitchell & Sackney 2011). Building communities of practice and sharing reflection can provide a powerful way to overcome dysfunctional effects of a crisis situation by integrating the social dimension within the learning process.

#### 4. Examples of collective reflections during the Covid-19 crisis

Teachers, administrators, higher education researchers and educational developers have, almost intuitively, embraced the idea of the need for collective reflection. There are many examples where they have engaged in acts of collective reflection during the coronavirus crisis. Amongst others, early on, an initiative led by a group of higher educational developers launched an open Padlet to collect research activities around teaching under Covid-19 (Hochschuldidaktisches Zentrum Sachsen 2020). Although not necessarily reflective in itself, this Padlet was communicated as a practice to provide and distribute knowledge as a basis for future research-based reflections (Sekyra 2020).

Another initiative was (and still is) the autoethnographic research project AEDiL (e.g. Steinhardt 2020, Ternes et al, in this book). While the collective Padlet was first and foremost aimed at collecting and systematizing upcoming research activities and trends, AEDiL used autoethnography as an approach to individually and collectively analyze teaching experiences. In their recently published book, the authors describe different narratives that evolved around new digital routines emerging during the pandemic, which can be seen as accounts and products of collective reflection. Moreover, the authors reflect on their autoethnographic-reflective practices, coming up with valuable insights into collaboration, trust, shared responsibility and openness to trial and failure (AEDiL 2021).

I would like to argue that, although different in their scope and complexity, both of these projects can be seen as examples of collective reflection. However, they are community-based and not organization-based enterprises, i.e. they engaged individuals from different institutions. In doing so they are providing collective reflection spaces that are positioned (partly) apart from administrative affordances and intra-institutional politics (although not apart from institutional dynamics, e.g. DiMaggio & Powell, 1983). This independence can help to build an open and trusting climate among those involved (cf. AEDiL 2021). However, the respective initiatives also place the burden onto engaged individuals to transfer pandemic learnings conceived through collective reflections. Again, these individuals will have to carry those learnings back into their respective institutions. This might not in itself be problematic, since reflective learning to some degree always requires acts of transfer (Scholkmann et al. forthcoming). However, for organizational learning, collective reflection is most likely to be successful when it takes place within an institution.

The present book contains some fine examples of how reflective practices have been established on the organizational level, i.e. in individual universities or departments. The chapter by van Ackeren, Bös, and Lamprecht (in this book) describes the implementation of a university-wide taskforce for teaching and learning, for example. Much in line with Duchek's (2020) model of organizational resilience, this taskforce has been monitoring and reflecting the emergent developments around ERT, and recommended timely organizational changes based on their assessment of the situation. Obviously, the reflections of this taskforce were supported by institutional power (being an officially implemented body of the institution) and were taking place under a much more action-oriented perspective than community-based reflections (working toward direct and timely measures and changes within the institution). The work of this taskforce appears to have been highly effective in the concrete crisis situation; however, since it also derives its legitimization through this very crisis, it might be not possible to use this format for longer-term and durable reflections that lead to larger – and potentially transformative – learnings. In order to achieve these, the

allocation of power and resources will be needed to secure both documentation and implementation of new solutions (Duchek, 2020). However, these processes should not be thought of as only being directed toward concrete outputs, but must contain the institutionalization of practices of reflection (as described in the chapter, but on a continuous basis) in order to develop their full power for organizational learning.

## 5. Concluding remarks

Although in the last paragraph community-based and intra-institutional reflections were framed as dichotomous modes, it needs to be stressed that a pragmatic view of reflection allows them also to be treated as dynamically intertwined. In this view, reflections are understood as taking place in communities of practice, which can be overlapping, and individuals can take part in more than one reflective community at the same time – within or across institutions. In this sense, the present book can also be seen as an enterprise of collective reflection over the experiences of and with ERT during the crisis.

It should be noted, though, that the coronavirus pandemic remains ongoing in larger parts of the world, and various forms of lockdowns, shutdowns and partial openings are turning what was initially ERT into a more permanent situation. It can only be hypothesized how and what these developments will ultimately contribute to the overall picture, and whether Covid-19 and resulting ERT will lead to lasting digital change (cf. also Wollscheid, Scholkmann, Capasso & Olsen 2021). What we can say is that reflection is a critical factor if we are to stand a chance of learning from these challenges.

### Author's note

A previous version of this work was presented as a keynote at Tage der Lehre FH St. Pölten 2020. However, this chapter extends beyond the ideas expressed there.

## Quellen

- AEDIL (2021). Reflective Insights into Teaching and Learning from the AEDiL Project. wbv Media. doi.org/10.3278/600482ow271
- ARGYRIS, C. & SCHÖN, D. A. (1978). *Organizational Learning*. Addison-Wesley Pub. Co.
- BLAYONE, T. J. B., VAN OOSTVEEN, R., BARBER, W., DI GIUSEPPE, M. & CHILDS, E. (2017). Democratizing digital learning: Theorizing the fully online learning community model. *International Journal of Educational Technology in Higher Education*, 14(1). doi.org/10.1186/s41239-017-0051-4
- BLIN, F. & MUNRO, M. (2008). Why hasn't technology disrupted academics' teaching practices? Understanding resistance to change through the lens of activity theory. *Computers & Education*, 50(2), 475–490. doi.org/10.1016/j.compedu.2007.09.017
- BONVILLAIN, W. B. & SINGER, S. R. (2013). The online challenge to higher education. *Issues in Science and Technology*, 29(4), 23–30.
- BOWEN, W. G. (2013). *Higher Education in the Digital Age*. Princeton University Press.
- BRANDI, U. & ELKJAER, B. (2014). Organisatorisk læring. In S. Vikkelsø & P. Kjær (eds.), *Klassisk og Moderne Organisationsteori* (p. 257–278). Hans Reitzel.
- BRANDI, U. & ELKJAER, B. (2015). Organizational learning viewed from a social learning perspective. In M. Easterby-Smith & M. A. Lyles (eds.), *Handbook of Organizational Learning and Knowledge Management* (p. 21–41). Wiley. doi.org/10.1002/9781119207245.ch2
- BUCHANAN, D. A. & DENYER, D. (2013). Researching tomorrow's crisis: Methodological innovations and wider implications. *International Journal of Management Reviews*, 15(2), 205–224. doi.org/10.1111/ijmr.12002
- DEWEY, J. (1933). *How We Think: A Restatement of the Relation of Reflective Thinking to the Educative Process*. D.C. Heath & Co.
- DIMAGGIO, P. J. & POWELL, W. W. (1983). The iron cage revisited: Institutional isomorphism and collective rationality in organizational fields. *American Sociological Review*, 48(2), 147. doi.org/10.2307/2095101
- DUCHEK, S. (2020). Organizational resilience: A capability-based conceptualization. *Business Research*, 13(1), 215–246. doi.org/10.1007/s40685-019-0085-7
- ELKJAER, B. (2018). Pragmatist foundations for organizational education. In M. Göhlich, A. Schröer, & S. M. Weber (eds.), *Handbuch Organisationspädagogik* (p. 1–11). Springer Fachmedien Wiesbaden. doi.org/10.1007/978-3-658-07746-4\_24-2
- HAMMERSHØJ, L. G. (2019). The perfect storm scenario for the university: Diagnosing converging tendencies in higher education. *Futures*, 111, 159–167. https://doi.org/10.1016/j.futures.2018.06.001
- HASLAM, C., MADSEN, S. & NIELSEN, J. A. (2020, März 26). Covid-19 baner vejen for digital transformation af uddannelsessektoren. *Jyllands-Posten Debat*. https://jyllands-posten.dk/debat/breve/ECE12030751/covid19-baner-vejen-for-digital-transformation-af-uddannelsessektoren/
- HOCHSCHULDIDAKTISCHES ZENTRUM SACHSEN. (2020). Forschung rund um Lehren & Lernen in Zeiten von Corona. In *Hochschulforum Digitalisierung* (eds.). https://padlet.com/HDS\_Zentrum\_Leipzig/vnify31nppydz75x

HÖHL, W. (2020). Covid-19 als Beschleuniger der Digitalisierung?. <https://www.baumeister.de/covid-19-digitalisierung/> [04.11.2020]

JARVIS, P. (1987). Meaningful and meaningless experience: Towards an analysis of learning from life. *Adult Education Quarterly*, 37(3), 164–172.

KAZANJIAN, R. K., DRAZIN, R. & GLYNN, M. A. (2000). Creativity and technological learning: The roles of organization architecture and crisis in large-scale projects. *Journal of Engineering and Technology Management*, 17(3–4), 273–298. doi.org/10.1016/S0923-4748(00)00026-6

KEMMIS, S., BRISTOL, L., EDWARDS-GROVES, C., GROOTENBOER, P., HARDY, I. & WILKINSON, J. (2014). *Changing Practices, Changing Education* (1st ed. 2014). Springer Singapore. doi.org/10.1007/978-981-4560-47-4

KERGEL, D. & HEIDKAMP, B. (2018). The digital turn in higher education. Towards a remix culture and collaborative authorship. In D. Kergel, B. Heidkamp, P. K. Telléus, T. Rachwal, & S. Nowakowski (eds.), *The Digital Turn in Higher Education* (p. 15–22). Springer Fachmedien Wiesbaden. doi.org/10.1007/978-3-658-19925-8\_2

KERRES, M. (2020). Against all odds: Education in Germany coping with Covid-19. *Postdigital Science and Education*. doi.org/10.1007/s42438-020-00130-7

KING, K. P. (2012). Social media as positive disruption in education, e-learning and b-learning. In M. M. Cruz-Cunha, P. Gonçalves, N. Lopes, E. M. Miranda, & G. D. Putnik (eds.), *Handbook of Research on Business Social Networking: Organizational, Managerial, and Technological Dimensions*. IGI Global. doi.org/10.4018/978-1-61350-168-9

KIRKUP, G. & KIRKWOOD, A. (2005). Information and communications technologies (ICT) in higher education teaching – A tale of gradualism rather than revolution. *Learning, Media and Technology*, 30(2), 185–199. doi.org/10.1080/17439880500093810

KOLB, D. A. (1984). *Experiential Learning: Experience as the Source of Learning and Development*. Prentice-Hall.

LAVE, J., & WENGER, E. (1991). *Situated Learning: Legitimate Peripheral Participation*. Cambridge University Press.

LEMOINE, P. A. & RICHARDSON, M. D. (2019). Creative disruption in higher education: Society, technology, and globalization. In P. Peres, F. Moreira, & A. Mesquita (eds.), *Educational and Social Dimensions of Digital Transformation in Organizations* (p. 275–293). IGI Global. doi.org/10.4018/978-1-5225-6261-0

LOLLE, E. L., SCHOLKMANN, A. & KRISTENSEN, N. S. (forthcoming). Individual and collective reflection. In T. Ryberg & A. Kolmos (eds.), *PBL Future Perspectives [Working Title]*. Aalborg University Press.

MEZIROW, J. (1991). *Transformative Dimensions of Adult Learning*. Jossey-Bass.

MITCHELL, C. & SACKNEY, L. (2011). *Profound Improvement: Building Capacity for a Learning Community* (2nd ed). Routledge.

PIDERIT, S. K. (2000). Rethinking resistance and recognizing ambivalence: A multidimensional view of attitudes toward an organizational change. *Academy of Management Review*, 25(4), 783–794. doi.org/10.5465/amr.2000.3707722

PLACK, M. M., DUNFEE, H., RINDFLESCH, A. & DRISCOLL, M. (2008). Virtual action learning sets: A model for facilitating reflection in the clinical setting. *Journal of Physical Therapy Education*, 22(3), 33–42.

ROGERS, R. R. (2001). Reflection in higher education: A concept analysis. *Innovative Higher Education*, 26(1), 37–57. doi.org/10.1023/A:1010986404527

- SADERA, E. (2014). Dawn of the MOOC: The challenge of online learning. *University of Auckland Business Review*, 17(1), 6–15.
- SAHLIN, K. & WEDLIN, L. (2008). Circulating ideas: Imitation, translation and editing. In R. Greenwood, C. Oliver, R. Suddaby, & K. Sahin (eds.), *The SAGE Handbook of Organizational Institutionalism* (p. 218–242). SAGE.
- SCHOLKMANN, A. (2021). Resistance to (digital) change. Individual, systemic and learning-related perspectives. In D. Ifenthaler, S. Hofhues, M. Egloffstein, & C. Helbig (eds.), *Digital Transformation of Learning Organizations* (p. 219–236). Springer. doi.org/10.1007/978-3-030-55878-9\_13
- SCHOLKMANN, A., BOELT, A. M., LOLLE, E. L., & KOLMOS, A. (forthcoming). PBL-Competences and Progression. In T. Ryberg and A. Kolmos. (eds), *PBL Future Perspektiven* [Working Title], Aalborg University Press.
- SCHÖN, D. A. (1983). *The Reflective Practitioner: How Professionals Think in Action*. Basic Books.
- SEKYRA, A. (2020, Februar 10). Padlet »Forschung rund um Lehren & Lernen in Zeiten von Corona«. Eine kollaborative Sammlung. <https://hochschulforumdigitalisierung.de/de/blog/padlet-forschung-lehren-lernen-corona>
- SJÖBERG, J. & LILJA, P. (2019). University teachers' ambivalence about the digital transformation of higher education. *International Journal of Learning, Teaching and Educational Research*, 18(13), 133–149. doi.org/10.26803/ijlter.18.13.7
- STEINHARDT, I. (2020, April 16). AEDiL – AutoEthnographische Forschung zu digitaler Lehre und deren Begleitung. <https://sozmethod.hypotheses.org/996>
- TERNES, D., BERNHARD, N., GEWINNER, I., GOLLER, A., LOHNER, D., KÖNIG, K., RÖWERT, R., STEINHARDT I. & THIELSCH, A. (in this book). Dem eigenen Anspruch auf der Spur. Autoethnographische Einblicke zu studierendenzentrierter Lehre. In H. Angenent, J. Petri, & T. Zimekova (eds.), *Things will never be the same again? Lehre und Hochschulentwicklung in Zeiten der Corona-Pandemie*. transcript.
- TØMTE, C. E., FOSSLAND, T., AAMODT, P. O., & DEGN, L. (2019). Digitalisation in higher education: Mapping institutional approaches for teaching and learning. *Quality in Higher Education*, 25(1), 98–114. doi.org/10.1080/13538322.2019.1603611
- TURNER, R. J. & AVISON, W. R. (1992). Innovations in the measurement of life stress: Crisis theory and the significance of event resolution. *Journal of Health and Social Behavior*, 33(1), 36. doi.org/10.2307/2136856
- VAN ACKEREN, I., BÖS, B., & LAMPRECHT, M. (in this book.). Die Corona-Taskforce Studium und Lehre an der Universität Duisburg-Essen: Neue Steuerung und erweiterte Kommunikations- und Partizipationskultur im Umgang mit einer Krisensituation. In H. Angenent, J. Petri, & T. Zimekova (eds.), *Things will never be the same again? Lehre und Hochschulentwicklung in Zeiten der Corona-Pandemie*. transcript.
- VERMEULEN, M., KREIJNS, K., VAN BUUREN, H., & VAN ACKER, F. (2017). The role of transformative leadership, ICT-infrastructure and learning climate in teachers' use of digital learning materials during their classes: Teachers' use of digital learning materials. *British Journal of Educational Technology*, 48(6), 1427–1440. doi.org/10.1111/bjet.12478
- WOLLSCHIED, S., SCHOLKMANN, A., CAPASSO, M. & OLSEN, D. S. (2021). Digital transformations in higher education in result of the Covid-19 pandemic, understood as a disruptive innovation. A scoping review protocol. OFS Home.
- YEO, R. K. & MARQUARDT, M. J. (2010). Problems as Building Blocks for Organizational Learning: A Roadmap for Experiential Inquiry. *Group & Organization Management*, 35(3), 243–275. doi.org/10.1177/1059601110369729