

Summary

My inquiry began with the following observation and experience: we live in a world permeated by profound challenges and transformations (i.e. climate change, post-truth politics, challenges posed by an increasingly multicultural, globalized, and digitalized society, the rise of burnout among students, and so forth) and as teachers and educational researchers we are inevitably confronted with the need to respond. Although it is important to study each of these issues in their own rights, in this inquiry I have opted for a different yet complementary strategy, for my primary interest has been not in what makes each challenge we face unique but in what binds them together. If we focus our inquiries on what it means to educate in a world permeated by profound transformations and challenges, might we perhaps end up with perspectives that can inspire a pedagogical response to any of these challenges as well as to others left unmentioned and new ones yet to come?

In chapter 1, I argued that a promising angle for pursuing such an inquiry, is that of *complexity thinking*; a way of thinking and acting that is concerned with the implications of assuming a complex universe. The idea of a “complex universe” was initially triggered by a growing difficulty to understand and predict newly discovered natural phenomena using the available laws of physics and mathematics in the 1950s and 1960s and complexity thinking started, consequently, with the emergence of various strands of complexity science (e.g. cybernetics, systems theory, chaos theory). Today, however, the need and tendency to complexify has spread through the sciences, social sciences, and humanities, and the accumulation of complexivistic research over the past decades gives rise to a long list of ways in which the world we live in is complex rather than simple and many of the contemporary problems we face consequently wicked rather than tame. I highlighted three perspectives on complexity that particularly triggered me at the onset of my inquiry: (1) complexity as multi-perspectivity and an open future (i.e. society is permeated by a plurality of problem definitions, visions, stakes, and strategies), (2) complexity as movements in motion (i.e. our actions are contextual and the context itself continually evolves in manners frustrating our attempts to predict and control), and (3) complexity as interconnectedness (i.e. myriad life forms depend on each other through intricate webs of relationality and in many ways wicked problems can be considered to be symptoms of other wicked problems). Following these considerations, I posed the question of

what kind of pedagogical response would do justice to the experience and challenge of living in a complex world.

In chapter 2, I moved on to a consideration of what kind of methodology would facilitate my inquiry. Yet first, I had to specify my aims further by explicating what constitutes a pedagogy and what kind of pedagogical knowledge I am interested in. To do so, I aligned myself with the theorizing of the French pedagogue Philippe Meirieu and the Dutch pedagogue Gert Biesta, which helped me in two ways. First of all, it provided me with the useful understanding that a pedagogical response ought to be developed along the three interrelated dimensions of axiology (i.e. the purposes that provide a pedagogy its focus and orientation), praxeology (i.e. the educational settings, methods, teaching styles, and other practical arrangements that are utilized to shape the educational process), and theory (i.e. the way both axiology and praxeology are grounded in premises, arguments, data, knowledge about the world). Secondly, it helped me to recognize that education is itself a complex process (i.e. it is inherently open, semiotic, and recursive, and therefore what is educationally effective and desirable is always situational) and that therefore an important way in which pedagogical research can serve educational practice is by articulating and legitimizing axiological and praxeological perspectives as hermeneutic lenses. That is to say: as “ways of seeing” through which teachers can inquire within the specific, situated practices they are immersed in so that they can identify their own situated insights and shape their own actions.

Following these specifications, I moved on to present three interrelated modes of inquiry that together suited my purposes. The first mode of inquiry was narrative inquiry with teachers as co-researchers and was intended to enable helpful perspectives to be grounded in and illustrated by real-life experiences of teachers. In doing so, I built on a narrative approach, which suggests shaping collaboration with teachers around two steps of narration: (1) identifying and narrating personal teaching experiences, and (2) collaboratively engaging with these narratives in the attempt to interpret and articulate generic hermeneutic lenses. Given the creative nature of this process, I opted for an in-depth, long-term collaboration with a purposefully selected group of teachers who shared my concerns and were personally motivated to develop a pedagogical response to the challenge of educating in a complex world. I found a group of 12 teachers matching this profile, yet simultaneously diverse in such variables as educational discipline,

school type, and career phase, in the participants of a pilot program for teachers of The Bildung Academy.

The second mode of inquiry was literature study and was intended to allow helpful perspectives to be informed by state-of-the-art complexity thinking. I distinguished between two types of literature crucial to my purposes: (1) pedagogical theorizing that helps to think about pedagogy from a complexivistic point of view, as it builds on complexivistic notions such as those presented in chapter 1, and (2) theoretical considerations that provide a deeper understanding of the ontological implications of a complexivistic worldview. In recognition of the vast amount of literature that could potentially contribute to my inquiry, the positioning of literature study as serving the articulating of helpful perspectives, and practical limitations, I opted for two pragmatic approaches to literature selection: snowball sampling and data-driven selective reading.

The third mode of inquiry was autoethnography and was intended to utilize some of my own experiences in the field of education (i.e. my experiences as a co-initiator of the Dutch educational initiative The Bildung Academy, and my collaboration with teachers as co-researchers) to enrich helpful perspectives and to be transparent about my complicity as a researcher. Doing autoethnography entails to retrospectively and selectively write about epiphanies that are made possible by possessing a particular cultural identity, and is in great part a response to the complexivistic insight that doing educational research is not a neutral activity enacted by an objective outsider, but rather a normative engagement of an insider that becomes more relatable and trustworthy if shared transparently.

In chapter 3, I presented an initial inquiry aimed at arriving at an understanding of the nature of students' relationship to complex societal challenges. Such an understanding, so was my argument, is crucial as it is this very relationship that the pedagogical response I seek to develop is to be directed at, and such an understanding can open up a subsequent inquiry into the pedagogical dimensions of axiology and praxeology. I structured my initial inquiry in three steps. First, I performed a critical reading of the commonsense logic of education as a process of preparation and, consequently, of approaching students as "not-ready-yet". Although this logic fulfills an important role in our societies in protecting professional quality standards, democratic integrity, and children's safe and healthy development, I argued that complexity

thinking reveals “readiness-dichotomies” as both relative and reversible. Following this line of reasoning, I developed the initial interpretation that it is important to not only understand the relationship of students to complex societal challenges as in-preparation-for-future-participation but also in terms of participation-here-and-now. Second, I used this initial interpretation to start up the process of inquiry with co-researchers. Following the narrative-biographical methodology of Geert Kelchtermans, I conducted a semi-structured narrative-biographical interview with each co-researcher and subsequently processed and communicatively validated these into narrative synthesis texts. Third, I shared a pattern of insight that emerged in step 2 through co-researchers’ exploration of exemplary teaching experiences in which students actively participate in complex societal challenges: the insight that in their own ways, students always already are part of such challenges through their evolving biographies. Building on, especially, the theorizing of Tim Ingold and Karen Barad I suggested that after having critically evaluated readiness-dichotomies, this insight leads to a similar evaluation of what we could call a “space-dichotomy”, meaning: a separation between the student-in-school and complex societal challenges “out there”. Complex societal challenges, in fact, are not contained within closed spaces, but rather weave through the nested structures that organize our lives, and, consequently, students are *entangled* in them (i.e. they are simultaneously shaped by and shapers of them in their paths through the world). This understanding, thus, improves the interpretation that we ought to approach students as participants-here-and-now by specifying that this participation is not an opportunity first provided by a teacher, but rather, as we are relational beings in an interconnected world, an a priori given that can be explored, strengthened, and transformed through education. The premise of entanglement, so was the conclusion of chapter 3, offers a powerful lens for inquiry into the pedagogical dimensions of axiology and praxeology, and this moved me to refer to the pedagogical response my inquiry is aimed at as “pedagogy of entanglement”.

In chapter 4, I presented the rest of my inquiry with co-researchers (i.e. methods and outcomes), as it took shape around the premise of entanglement. To do so, I developed a diffractive approach, building, especially, on the theorizing of Karen Barad. This approach recognizes that as a group of researchers, my co-researchers and I are entangled in the phenomenon of our interest and that therefore we are more likely to articulate rich, helpful perspectives if we challenge and transform biographical narratives through an ongoing process of creative obstruction, than if we take them for granted and try to reflect the insights articulated in them.

In shaping my strategy, I was particularly inspired by the diffractive methodology of Van de Putte and colleagues, whose work provided a powerful example of approaching co-researchers' initial narratives as "diffractive scripts" (i.e. lively narrations that transform and gain meaning through a collaborative engagement of the researchers).

Building forth on these methodological considerations, I designed and enacted the following diffractive steps. In step 1.1, I brought co-researchers together in groups of 3 or 4 and gave them the assignment to read each other's narratives and highlight so-called hotspots (i.e. parts that particularly attract attention). After that, I gave them the assignment to think of a challenging yet realistic educational situation in which students' entangledness is brought to the foreground and to develop and write down several scenes describing how this situation develops in interaction with them as their teacher. This resulted in the development of three diffractive scripts, titled 'The multicultural classroom', 'The sustainable school', and 'Mock and prejudice'. In step 1.2, I worked with each group of co-researchers to gather and summarize in a mind-map structure the insights that emerged through step 1.1 regarding the question of how to work meaningfully with the entangledness of students. In step 2.1, I worked together with each co-researcher individually again and gave them five sub-assignments aimed at enriching scripts and exploring creative tensions in them. In short, the sub-assignments were: (1) reread the scripts and notice what attracts your attention, (2) improve the script of your group as you see fit, (3) improve the script of another group as you see fit, (4) looking at what attracts you and the kind of changes you suggest, describe a pedagogical tension or dilemma that you recognize, (5) describe a recent exemplary experience of your own in which this tension also surfaces. In step 2.2, I engaged in a contemplative dialogue with every co-researcher to collaboratively gather and summarize the insights triggered by step 2.1. Herein, I posed two questions: (1) what do you now realize about what it takes to work with the pedagogical tension you explored?, and (2) how would you now summarize your pedagogical aim in the diffractive script you co-created with your group? After finishing step 2.2 with all co-researchers, I decided to make and share with all co-researchers one summary of insights in the form of a recorded PowerPoint presentation, in which overlapping patterns are emphasized and every individual insight is included. On my request, I received and processed a few points of feedback on how to improve the summary so that all co-researchers felt fully represented.

The outcomes of my inquiry with co-researchers formed the input for chapters 5 and 6. In these chapters, I further articulated, legitimized, and discussed helpful perspectives in the dimensions of axiology (chapter 5) and praxeology (chapter 6). In doing so, I continued the diffractive methodology introduced in chapter 4, yet in a slightly different mode. Whereas earlier, narratives of co-researchers were brought into a creative conversation with each other, the task I set myself to in these chapters was to bring the narratives and insights this generated into conversation with complexivistic pedagogical literature. In doing so, the scholars I engaged with most rigorously were Ian Hodder, Harmut Rosa, Alasdair MacIntyre, Paulo Freire, Gert Biesta, Karen Barad, Simon Ceder, Daniel Wahl, Sam Crowell and David Reid-Marr, Parker J. Palmer, and Geert Kelchtermans. In the following paragraphs, the helpful perspectives developed through this process are summarized.

Entanglement-orientedness. The perspective of entanglement-orientedness offers somewhat of a meta-narrative in the dimension of axiology, as it translates the move from an ontology of individualism to a relational ontology into the argument that we should likewise transform our focus on individual flourishing – which often goes at the cost of some other – into a more ambitious focus on entangled flourishing, that is: a strive toward ways of being in the world through which we co-constitute each other’s well-being and can realize our personal and collective creative potentials. This perspective is rooted in the understanding that entanglements have both enabling and constraining effects, can consequently lead both to experiences of entrapment and resonance, and that what hangs in the balance pedagogically is how we respond to these experiences. Furthermore, seen from the perspective of relational ontology, entanglement-orientedness is (1) not an attempt to compromise between the desires of fixed, separate individuals, but rather a more dynamic and ambitious effort to protect and co-create a world in which we can win together (2) post-anthropocentric in the sense that it includes the ambition to let our entanglement with the more-than-human be a win-win story rather than a win-lose story (3) both a rational logic (i.e. as we depend on each other we should care for each other) and an intuitive desire for joy and peace rather than war and suffering, and (4) essentially not something a student can acquire and possess but rather a never-resolved existential challenge that is to be practiced collaboratively.

Entanglement-awareness and hopeful action. The two perspectives of entanglement-awareness and hopeful action together translate the perspective of entanglement-orientedness into a more

practical axiological orientation for teaching students in the face of complex societal challenges. The combined proposition of these two perspectives is to let our actions as teachers be driven by the hope that students demonstrate awareness of the human and more-than-human relations they are part of and that they manifest such awareness in actions that provide them with the experience that they can help protect and create a world in which entangled flourishing is increasingly possible. A complexivistic reading of the perspective of entanglement-awareness proposes the understanding that (1) it is not a matter of “pure” or “absolute” awareness, but a matter of dynamically increasing situated awareness, (2) it connects the personal to the systemic as it approaches our paths in life within the context of its interweaving in the wider world, (3) it connects the past to the future, as it helps us to interpret the events and processes through which our entangledness in the world took form and to envision the possible futures that we might collaboratively create, and (4) it enables us to be both critical and understanding, in the sense that it moves us to advocate against win-lose-relationalities yet acknowledges that such relationalities are always the result of a relationally produced history and thus there for a reason and not simply one person’s fault. Similarly, a complexivistic reading of the perspective of hopeful action proposes that hopeful expressions of entanglement-orientedness are highly situational (i.e. the same action can advocate entangled flourishing in one context yet move against it in another) and can be recognized in (1) acts of conservation (i.e. strengthening and protecting existing relational patterns through which entangled flourishing becomes possible), (2) acts of adaptation (i.e. tweaking existing relational dynamics to reach a better harmony of different stakes involved), and (3) acts of regeneration (i.e. transforming win-lose-relationalities into win-win-relationalities).

Inquiry within entangled phenomena. The praxeological perspective of inquiry within entangled phenomena departs from the following pattern of insight that emerged in inquiry with co-researchers: myriad different teacher moves can trigger entanglement awareness and hopeful action, yet only if enacted in the right way at the right time. Following this insight, pedagogy of entanglement is to be considered as a process-centered pedagogy. Building on co-researchers’ exemplary experiences and the notion of emergent teaching as explored by Sam Crowell and David Reid-Marr, I proposed to frame this process as a cyclical process of opening, organizing, and consolidating inquiry. In short, (1) opening refers to creating a feeling of engagement and urgency through connecting with what is going on in the world, and with personal experiences and drives, (2) organizing refers to shaping collaborative inquiry, for

instance by orchestrating intra-action with relevant sources, actors, or places, by taking on challenges, and by inviting self-reflection, and (3) consolidating refers to executing initiatives, sharing creations, harvesting insights and articulating new questions and intentions so that the process can carry on. A complexivistic reading of this perspective proposes, furthermore, that inquiry (1) is a collaborative, relational process which, as a teacher, you can influence but not control all by yourself, (2) is both enabled and frustrated by structure, and functions best if there is space to restructure and improvise if the need arises, (3) takes place within the world, in the sense that it is not a process of entering the world but one of transforming one's ongoing participation in the world, (4) can be orchestrated in the sense of purposefully inviting and facilitating the intra-action of a plurality of voices, and (5) embodies both the qualities of realism (i.e. attentiveness to how the world is relationally constituted in the here and now) and resistance (i.e. embracing our roles as co-shapers of a better world).

Practicing perceptiveness and integrity. The two praxeological perspectives of practicing perceptiveness and practicing integrity are a response to the growing insight that even as we become increasingly experienced teachers, we are nevertheless repeatedly confronted with the challenge to shape a response that is effective given the particularities of the here and now. To be able to do so, so is the proposition of these combined perspectives, we should (1) try to become aware of here-and-now opportunities or obstructions for collaborative inquiry in the dynamic relationality of students-teacher-school-society (i.e. practicing perceptiveness), and (2) try to respond to what we perceive in a way that contributes to the process of inquiry (i.e. practicing integrity). Notably, in acknowledgment of the complexivistic understanding that as teachers we are as much part of inquiry as students are, it is important to realize that it is unrealistic to expect ourselves to be fully aware of everything going on. The perspective of perceptiveness is, rather, an invitation to be curious, present, and open to learn. Integrity, similarly, is not a quality someone can possess, as an essence, but rather a quality that can be ascribed to how one responds in a particular situation (hence, a practice). In answer to the question of how we might interpret, and engage in, this practice, I presented and discussed six interpretations of integrity as they emerged in the inquiry with co-researchers. Together, these interpretations offer useful lenses for teachers to explore and shape their unique contributions to inquiry within entangled phenomena, and to navigate those unpredictable, challenging educational situations that emerge in it. In short, the six interpretations of integrity are the practice of (1) commitment (i.e. trying to have a clear embodied pedagogical intention and to

be congruent in basing your actions hereon), (2) authentic style (i.e. the effort to stay close to your own passions and to ways of working that work for you), (3) professional realism (i.e. trying not to cross your own limits and to put your role and influence into a realistic perspective), (4) constructive self-awareness (i.e. trying to be aware of your own entangledness and to utilize this awareness in a way that serves inquiry), (5) collegial support (i.e. trying to keep critically questioning and developing your pedagogical views and actions together with colleagues and other educational professionals), and (6) professional independence (i.e. trying to nurture the courage, calmth, and flexibility to make and justify your own choices in the moment).

In chapter 7, I shared an autoethnographic account of my own practice of integrity throughout the inquiry with co-researchers. I did so with two purposes in mind: (1) to increase the “relatability” and usability of the six interpretations of integrity, and (2) to further enrich my thesis with the quality of transparency. To facilitate my exploration, I reformulated the six interpretations into “questions to live”. Subsequently, utilizing personal notes collected throughout the inquiry, yearly process reports which I discussed with my supervisors, and collected feedback of co-researchers, I provided answers to the six questions by sharing what, for me, were the most striking and transformative experiences and insights throughout the process of inquiry with co-researchers. I ended this chapter with the observation that in my autoethnographic account the six interpretations of integrity emerged as interwoven rather than separate, and suggested that engaging with them ought not to be about “ticking boxes”, but rather about nurturing an overall experience of meaningful effectiveness.

In chapter 8, lastly, I presented a recapitulation of the helpful perspectives developed throughout the inquiry and considered several paths worth pursuing in moving forward. I summarized how the helpful perspectives, together, provide a heuristic that invites and helps teachers to explore and shape their situated pedagogical responses to the complex challenges that permeate contemporary society. A pedagogical response to complex societal challenges, so I concluded, ought to be rooted in the embrace of complexity. Rather than analyzing and attempting to solve complex societal challenges from an outsider position, we need to learn and practice to move within them with increasing sensitivity and wisdom. To further this cause, I ended my contribution by highlighting five openings for further inquiry, focusing on (1) educational research methodology, (2) teacher education, (3) the school as a professional

community, (4) curriculum design, and (5) exemplary pedagogical practices. Taken together, I proposed that a thorough educational response to complexity should be developed holistically, as a whole school and whole educational system approach.