Chapter 7

General discussion and conclusion
Care providers within the residential care for older people face multiple challenges and changes. An adequate response to these challenges requires ongoing professional development and continuous learning from current practices and workplace experiences. The research reported in this thesis was focused on exploring and facilitating such learning and professional development within a number of care innovation units (CIUs) within a residential care organisation for older people in the Netherlands.

The research question in this study was, “What is the nature of workplace learning within the context of the care for older people and how can an in-depth emic understanding of learning be generated in a way that is also beneficial to generating learning itself?” I built reciprocal relationships, promoted dialogue and equality, and used participatory action research (PAR) to enhance learning in and from work within the CIUs. By enabling practitioners to participate and share experiences in a dynamic processes of action, reflection and collective research (Reason & Bradbury, 2001), I hoped that learning, growth and change would take place and that care practices would improve. Subsequently, I studied these processes on five different but related levels (see figure 1) to gain deeper insights into how workplace learning can be conceptualised (conceptual objective), researched (methodological objective), and promoted (practical objective) within the care for older people.

Figure 1 Individual and collective levels of learning

- Individual level
- Dyadic level
- Group level
- Unit level
- Organisational level
Care providers within the residential care for older people face multiple challenges and changes. An adequate response to these challenges requires on-going professional development and continuous learning from current practices and workplace experiences. The research reported in this thesis was focused on exploring and facilitating such learning and professional development within a number of care innovation units (CIUs) within a residential care organisation for older people in the Netherlands.

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Figure 1 Individual and collective levels of learning
The results show that at all five levels learning took place through participation: by being, doing and acting in real work situations and by experiencing these situations with body and mind. Furthermore, the study demonstrates that there were reciprocal interactions between all the elements within the context (individuals, processes, structures and artefacts) and that the person as well as the context emerged and co-evolved. I propose, therefore, that learning at, through and for work is a relational, complex and co-emerging phenomenon.

In this final chapter I explore this complexity view of learning. After connecting the different levels of learning by means of my own learning within the CIUs (individual level), I examine more closely the nature of workplace learning within the context of the care for older people. Subsequently, I recount how I studied and facilitated learning to explore how workplace learning within the residential care for older people could be researched and promoted, leading to some methodological suggestions. The chapter closes with inspirational suggestions for both practice and further research.

The concept of workplace learning

The first part of the research question is central in this section. It concerns the inquiry into the nature of learning in and from work and is aimed at conceptualising workplace learning. I begin with my own learning within the workplace and my process of sense making (Weick, Sutcliffe & Obstfeld, 2005). As a facilitator or researcher I played an explicit role in each of the processes and operated at all five levels. I cannot disregard myself as a person, nor my feelings and learning experiences in and during the research process, as my own learning has influenced the meaning that is given to workplace learning and thus the research findings expressed in this thesis. From there I will explain learning further from the perspective of complexity theory and problematize some taken for granted dualisms within the literature about workplace learning.

My own learning: Inadvertent transformation of my values and beliefs concerning learning

In 2007, when I started as a lecturer practitioner, I had clear ideas about the role and about how to encourage learning and change within the CIUs. These ideas were based on my work experiences within health care and educational contexts and on propositional knowledge gained during my teacher and academic education in the 90’s and beginnings of this century. Corresponding with common sociological insights into learning, as for example explained in social-constructivists and socio-cultural theories of learning (Hager, 2011), I believed learning at and from work to
be an on-going process that arises through participation within real work situations and that such learning is socially and contextually informed as well as influenced by the individual’s beliefs, values, emotions and (tacit) understandings (e.g. Andresen, Boud & Cohen, 2001; Billett, 2006; Eraut, 2004; Pridham, O’Mallon & Prain, 2012).

I considered reflection to be important for such learning as does Kolb (1984), for example. Kolb explains that new insights are gained by reflecting on (implicitly gained) experiences, which are in turn integrated into altered frameworks of knowledge, leading subsequently to new actions and thus new experiences. Furthermore, I valued collective learning and interpretation highly, believing that explicating knowledge, thoughts and assumptions makes knowledge transferable and contributes to the development of shared meanings and understandings (Dixon, 1996; Nonaka & Takeuchi, 1995).

In line with these beliefs, I assumed that the promotion of learning skills, for example by teaching others how to learn, and planning and organising (collective) learning, would support the integration of learning and working within the CIUs on individual and collective levels. I therefore put effort into promoting social conditions like safety, openness and equality, encouraged knowledge sharing and (collective) reflection on experiences, and invited others to set clear goals and to identify learning activities as both individuals and as a group. However, so doing I experienced that my beliefs and assumptions did not always match those of others, like the nurse manager (chapter 2) and staff members (chapter 4). They ‘just’ wanted to provide good care for residents, seemed not to be interested in enhancing their own learning purposefully and were less cognitively oriented than I had expected.

**Values and beliefs in motion**

It was through my cognitive and bodily engagement in the CIUs that my values and beliefs unfurled and simultaneously became challenged by others, triggering new bodily sensations and emotions that I eventually interpreted further. This is recognisable, for example, in chapters 2 and 3. My values and beliefs did not fit those of others in the units and this difference generated tensions. I tried to adapt and to affiliate with others’ learning (preferences) to encourage learning and change: sometimes mindfully and as part of a plan, sometimes unconsciously. For example, I experimented with other methods, like drama, and became aware that this fitted better a practice orientated and hands-on preference for learning. The drama brought energy and movement within the research group as well as within the team, and triggered research group members to behave differently in the unit, encouraging other alterations (chapter 4). In a similar manner, I adjusted more or less automatically to the gradually changing behaviour of the junior lecturer
practitioner Ragna, who I mentored, through which our own relationship and our relationships with others co-evolved. In this way learning, change, and personal growth for us as well as for other practitioners came into being (chapter 3).

I realised that unplanned and unforeseen incidents, actions and interactions, like the reduction of hours that the activity coordinator was available in the unit (chapter 5), a changing group of students (chapters 5 and 6) or a resident noting to a staff member that she wanted to do household tasks (chapter 4), encouraged momentum, learning and change. Such changes, no matter how small or distinct, led to new circumstances and incremental changes both within and between the levels of learning. For instance, the resident’s desire to help served as a reminder to the ward assistant (a member of the research group) to also involve other residents in household tasks. She experienced cognitively and bodily that involving residents in activities can facilitate positive relationships between residents and reduces residents’ distress and restlessness. The practitioner shared her learning experience with fellow research group members and other colleagues and started to role model on the ward, encouraging others to do the same. As a result not only did the ward assistant feel more appreciated and connected with other team members, but involving residents in daily activities grew into a common goal. Together with other incidents and actions, this contributed to a shared responsibility and a gradual change of values in the direction of person-centred care, which led to a more effective workplace culture (Manley, Sanders, Cardiff & Webster, 2011) and other initiatives to improve practice (see chapter 4 and 5).

I experienced that (unplanned) shifts and changes created momentum and new changes. Everything (individuals, interactions, processes, structures etcetera) was interrelated and what was present at one level, for example openness, care and interrelated learning and change at the dyadic level, was also recognisable at other levels, like on the group, unit and organisational levels. All elements, interactions and processes at a particular level, as well as all the different levels, were not merely related, but interwoven, influencing and strengthening one another reciprocally. I learned that the levels at which learning takes place were neither static nor demarcated. Rather they were lively and inextricably interrelated spaces or spheres creating a dynamic whole in which on-going shifts, feedback loops and movements unfold. Consequently, I began to understand workplace learning to be ‘much more’, less ‘black or white’ and insular, and harder to organise and manage than I had initially assumed. I came to see these learning experiences and beliefs to have features in common with insights from complexity theories and recently emerged postmodern theories of learning (Hager, 2011). I realised that through my bodily engagement as a lecturer practitioner and by doing my PhD, my beliefs, values and worldview had been and will be altered. Gradually and unforeseen I had broadened my scope and realised that what I
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Learning as a relational, complex and co-emerging phenomenon
As argued above and within the previous chapters, learning in dynamic workplace
settings is on-going and often spontaneous and implicit. It emerges through bodily
and cognitive engagement and in reciprocal relationships with all elements
(individuals, interactions, processes and structures) at and between interrelated
and evolving levels of learning. My unfolding and expanding understanding of these
levels of learning has lead me to the conclusion that they can be more aptly
described as ‘learning spheres’, a point I will elucidate in the closure of this
section. These insights advocate an approach to learning that takes the embodied,
pragmatic and dynamic acting of learners as a given, and acknowledges that
learning is relational, responsive and complex. As the dominant discourse, centred
on social-constructivist and socio-cultural theories of learning, insufficiently
reflects these insights into learning (Cunliffe, 2008; Fenwick, 2000b; Küpers,
2008), I propose an alternative worldview to broaden the discussion and develop
more encompassing understandings of learning at, from and for work. I suggest
that such a view could be grounded in complexity theories and, more specifically,
that of enactivism. There are others (Davis & Sumara, 1997; Fenwick, 2000b, 2001;
Niessen, 2007) who see learning in this light but with the exception of Fenwick
they conceptualise learning within a school setting instead of a workplace.

Complexity theory and enactivism
Within complexity theories an individual is considered as a living and dynamic
system, while at the same time the individual is a subsystem (a linked part or
element) of a larger dynamic system: the environment or the context (consisting of
individuals, interactions, processes and structures) in which the specific individual
acts (Davis & Sumara, 1997; Laidlaw, 2004; Osberg & Biesta, 2007). The
interconnected subsystems interact, influencing each other reciprocally, through
which all parts unfold and evolve continually in relation and over time, while at
the same time the system as a whole arises from the interrelations between the
parts.
This concept of complexity is not to be confused with complicatedness. Within
a complicated world both the parts and the way they interact are identifiable and
observable, like the little cogwheels in a clock intermeshing to rotate the hands
(Davis & Sumara, 1997). Although a complicated mechanism, the clock’s parts or
components are discrete from each other and unchangeable as is the way they
work together, leading consistently to the same result (showing the time). In a
complex world however, parts are intertwined and inseparable, transcending
themselves in relation through a mutually informed process, while unfolding the system as a whole. Parts and the system co-emerge, which is a messy rather than an orderly process, while the whole is much greater than the sum of its parts (Davis & Sumara, 1997).

From a complexity view, each of the five related levels central within this research could be understood as a dynamic part or subsystem of a bigger whole as well as a living system consisting of several subsystems. Recognisable in the previous chapters, these levels, or spheres as I will refer to them from now on, are indeed strongly interconnected as they reveal and evolve in relation. In chapter 2, my entrapment in the situation (individual sphere) influenced, in this case hindered, modifications within other individuals (the unit manager, practitioners) and thus the unit. My entrapment was also perceivable within other learning spheres, and later changes in the situation, for example the unexpected absence of the unit manager, led to shifts in diverse spheres: I felt the freedom to interact differently and to develop myself; the student co-ordinator, nurse teacher and I started to collaborate as co-researchers in initiating an action research project while the nursing team participated actively in the project aimed at creating change on the ward. All these subsystems thus co-evolved and strengthened each other, unfolding changes in the unit (the bigger system). Other chapters also show that the dynamics in play are recognisable within all spheres and that learning and growth between and across spheres are interrelated. For example, the development of the mentoring relationship (chapter 3) was rooted in the learning and growth of Ragna (the junior lecturer practitioner) and I, and in turn our relationship encouraged further learning for us as well as for others such as research group members. They wanted to learn how to facilitate meetings and learning and change processes within the unit. Doing so encouraged new shifts and changes in the group, unit and organisational spheres, enabling, for example, the engagement of residents in daily activities (chapters 4 and 5) and a workplace culture that embraces learning (chapter 6).

Complex systems consist of feedback loops (Laidlaw, 2004); each incident, action and interaction affects those that follow erratically and small events and interactions can scale up to greater effects. These feedback loops can be positive and self-reinforcing or negative and self-correcting (Schneider & Somers, 2006). Put differently, through dynamic networks of interaction responsive processes emerge. Patterns and structures unfold and continuous and unpredictable changes or mutations occur. For instance, shifts in roles in our mentoring relationship encouraged other members of the action research group to learn how they could support improvements in the unit (chapter 3). In turn, this led to spontaneous and often unforeseen effects on individuals and the system as a whole. Personal growth and role modelling of research group members led, for example, to increased collaboration and shared responsibilities in the research group and the unit
(chapters 4, 5 and 6). In this way a self-organising emergent mechanism comes into being, which gives rise to non-linear shifts and changes (Davis & Sumara, 1997; Laidlaw, 2004; Osberg & Biesta, 2007).

Responsive shifts and changes within and between parts and the greater system (the interrelated spheres) are considered as evidence of learning through adaption (Laidlaw, 2004). How such learning processes in and at work unfold can be further explained from an enactivist perspective, a view that draws from evolutionary biology and complexity theory (Davis & Sumara, 1997; Fenwick, 2001).

Enactivism (Varela, Thompson & Rosch, 1991) acknowledges that learning is grounded in activity. Being at once bodily, cognitively and experientially engaged in the world by moving, acting and participating in it, people enact a world. To enact a world means that people shape their world and at the same time are influenced by it (Davis & Sumara, 1997; Niessen, Abma, Widdershoven, van der Vleuten & Akkerman, 2008). Learning from an enactivist perspective is therefore inherently interdependent and socially informed and is not so much a process in which one explicitly accumulates knowledge, as it is a recursive process in which one adapts and expands one’s space for possible action (Varela, 1999).

In the dyadic sphere (chapter 3), for example, we can see that the mentoring relationship between Ragna and I, which was based on our being and acting, created the conditions for engagement and enactment. In turn, these enactments led continuously to imbalances: Ragna increasingly took the initiative in supporting action research group meetings, with the result that my facilitation strategy was no longer suitable. Within such situations I felt this imbalance physically and sometimes cognitively leading to alterations (unconsciously) in my acting to rediscover balance. Learning arose through the active re-orientation of self and our relationship evolved, creating thereby possibilities for new acting and consequently new disturbance. Put in generic terms, learners continually and actively re-orientate and rearrange their mental and their bodily and experiential structures to maintain these in relation to their world (Davis & Sumara, 1997; Fenwick, 2001; Varela, 1999). As they do so, they create new possibilities for understanding and acting that emerge out of their situation specific actions, called ‘work knowing’ by Fenwick (2001).

Learning is thus a responsive, embedded, and embodied process enmeshed within a web of many heterogenic elements that reciprocally influence each other (Davis & Sumara, 1997; Niessen et al., 2008), more than is outlined in most learning literature. Such a complex or enactivist view of learning problematizes assumed dichotomies often present in (workplace) learning literature.
Challenging common dualisms

In literature there are diverse positions about learning, each emphasising different assumptions and specific aspects of learning. In line with our western preference for analytical and conceptual thinking and clear distinct categories, this often leads to dualistic classifications that force a one-sided focus, constricting our understanding of learning (Hodkinson, 2004). A complexity or enactivist perspective\(^2\) of learning problematizes these dichotomies. I restrict myself here to a discussion of those dichotomies most relevant within the methodological and contextual boundaries in which this research was carried out.

Mind and body

Within the western world we have the tendency to approach the mind and the body as separate entities, and the mind is generally valued over the body (Fenwick, 2006; Hodkinson, 2004; Küpers, 2008). The body is not ignored within the literature as it is recognised that learning arises from the individual’s participation and engagement in diverse work situations (e.g. Andresen et al., 2001; Billett, 2006; Eraut, 2004; Pridham et al., 2012). However, cognitive processes like thinking, reflecting, and analysing (collectively) are usually seen as essential and are not usually regarded as having a bodily base (Argyris & Schön, 1978; Høyrup, 2004; Schön, 1983). In fact, these mental processes are often considered to be detached from bodily actions (Hodkinson, 2004). Kolb (1984) and Korthagen (2005), for example, explain that learning takes place after experience by reflecting on and theorising that experience, leading to new insights and thus new acting.

This study, however, indicates that cognitive and embodied processes are strongly intertwined. Embodied processes are explained by Varela et al. (1991) as being physically present within a situation, perceiving and experiencing one self and all elements within the context with the body and all senses. These cognitive and embodied processes are neither distinctive from nor alternatives to each other, but seem to be inseparable, interwoven, interdependent and equally valuable. Within the individual sphere (chapter 2), for example, I became aware that cognitive and embodied processes should not be treated as distinctive from each other as attempting to separate them had not helped me. In this case I experienced the situation mainly physically as I felt the tensions within the relationship with the nurse manager first and foremost within my stomach,\(^2\)

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\(^2\) The concepts of complexity and enactivism are strongly related to each other. The relational and often unforeseen dynamics of constant change are central in both concepts. Enactivism gives further meaning to complexity by emphasising the intertwined bodily and cognitive engagement as a whole. In this chapter I refer interchangeably to both concepts. I use complexity as the overarching concept, but refer specifically to enactivism when embodiment is central in the text.
influencing my thoughts, behaviour and self-esteem. Motivated by these unpleasant physical feelings, I engaged cognitively, reflecting on situations afterwards and intending to act differently in future encounters. Although I partially recognised what was happening in a cognitive way, I was unable to develop a new, more creative response while continuing to distance body from mind. Although reflection after action seemed to make sense, adopting a mindful posture or an engagement in practice that was more responsive to bodily senses (Langer, 1997; Macintyre Latta & Buck, 2008) could have helped me to deal with the situation differently. It could have prevented me from getting trapped in habitual (body-mind) patterns and enabled, instead, ‘knowing in action’ and an ‘in-the-moment’ response (Keevers & Treleaven, 2011) encouraging ‘mindful open-ended reflection’ (Varela et al., 1991). Mindful open-ended reflection is a form of experience that itself takes into account the metacognitive ability to sense one’s own senses while being engaged in the moment, opening up possibilities for acting differently than contained in one’s current representations.

Within the group and unit spheres (chapter 4 and 5) it is learned that practitioners prefer to learn by doing, seeing examples and by trial and error. While facilitators remained cognitively orientated and encouraged intentional learning, verbalisation and reflection, it was the bodily experiences of role playing and trying things out in practice that unfolded mental processes, like storytelling and sharing experiences. As such, enactment and embodied ways of knowing can bring forth more purposeful, articulate and explicit learning (Varela, 1999). This study thus illustrates that “knowing, doing and being are inseparable” (Davis & Sumara, 2005, p. 461) and that cognitive and embodied processes form an integrated and on-going whole. Fenwick (2000a, p. 267) has expressed this as “cognition is embodied enaction”. Consequently, working and learning should not be approached as separate activities, as for example the work of Kolb (1984) and Argyris and Schön (1978) suggest, but as one and the same process. They are inseparable and entwined, thus, working = learning and vice versa.

**Individual and social**

As many have described (e.g. Billett, 2006; Cunliffe, 2008; Fenwick, 2006; Hodkinson, Biesta & James, 2008; Küpers, 2008), another dualistic classification dominant in the learning literature is that of the individual and the social. Some authors, especially those influenced by psychological theories of learning like Kolb (1984) and Schön (1983), focus on the individual learner and consider the social context as external to and divided from the learner. Learning is then considered as acquiring and transferring knowledge and skills located in the individual’s mind and body (Hager, 2011; Hager & Hodkinson, 2009). Others (e.g. Eraut, 2004; Lave & Wenger, 1991; Manley, Titchen & Hardy, 2009; Pridham et al., 2012) emphasise
that learning is social and/or context dependent. Learning is then seen as a process rather than a product, which arises through engaging in work settings influenced by contextual factors such as social, organisational and cultural dynamics (Hager, 2011). Instead of acquisition and transfer, participation becomes the learning metaphor used (Hager & Hodkinson, 2009). However, in these social-cultural theories it is the individual as part of the context who develops within that context (Fenwick, 2000b), while in this research the individual, the social and the context have no inherent separate status, but emerge and evolve together. Or, as explained by Davis and Sumara (2005, p. 458), “individual knowing, collective knowing, and cultural identity are three nested, intertwining, self-similar aspects of one ever-evolving whole.” It is therefore important to focus on the relational aspects of learning and not on the individual per se.

Within the dyadic sphere, for example, my learning was interwoven with Ragna’s learning, altering our mentoring relationship continuously. We, and thus our relationship (the larger whole), co-evolved. In a similar manner, the research group members (chapter 4) grew in relation, unfolding their environment simultaneously as their enactments shifted (they started to act as role models) and thus altered the unit’s context of which they were inseparable parts. This was an on-going and emerging process recognisable within each sphere, but also between the spheres. For example, as our mentoring relationship (dyadic sphere) evolved, our role and position towards each other and other practitioners, like the research group members, transformed, through which shifts arose within the research group and the unit sphere: as Ragna grew as a facilitator some other research group members began wanting to learn to facilitate the research group meetings (chapter 3). Characteristics of the caring mentoring relationship with Ragna (dyadic sphere) were copied and adapted by research group members and other practitioners (group and unit level): they enacted a caring and responsive attitude towards each other, unfolding a supportive ward atmosphere as is illustrated in chapter 5. This learning attitude seeped into the organisational sphere (chapter 6) as not only nurse mentors, but all practitioners guided students in their learning promoting invitational qualities or affordances of the workplace (Billett, 2004).

Thus, that which is seen in smaller parts is also evident in the larger whole mutually strengthening each other. Everything is interrelated suggesting that learning is not individual or social, but relational and on-going. According to Hager and Hodkinson (2009), this relational, co-emergent and on-going perspective of learning is reflected in the metaphor of learning as becoming.

**Planned and happenstance**

A third dichotomy that this research challenges is the nature of the learning process as being planned or happenstance. In all spheres it is the more or less

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accidental configuration between both consciously employed strategies, like meetings with the research group (chapter 4) or learning arrangements as expressed in chapter 6, and unforeseen (inter)actions and changes, for instance an encounter with a resident (chapter 4), that encouraged and enriched learning. Although it is acknowledged that workplace learning is based on natural and often unexpected opportunities in real work situations, the focus in the learning literature seems to lie on the purposeful promotion of learning, especially when it comes to individual learning.

Influenced by learning theories such as adult learning (Knowles, 1990) and lifelong learning (Field, 2006; Harrison, Reeve, Hanson & Clarke, 2002), several authors value intentional and self-directed learning (e.g. Ellinger, 2004; Knowles, 1975; Merriam, 2001; Zimmerman, 1989) and emphasise the importance of planning and organising learning and the development of learning skills (e.g. Argyris & Schön, 1978; Manley et al., 2009; Marsick & Watkins, 2001; Simons, Linden van der & Duffy, 2000; Zimmerman, 1989). Within this perspective, the learner ideally determines his or her own learning goals, develops reflexivity and uses interactions intentionally for learning and development. In order to guide the learner in this learning, it is recommended to deploy strategies like modelling, coaching, questioning, scenario building, organising and sequencing of workplace experiences, encouraging interpersonal interactions, helping to identify learning conditions, and teaching in the use of learning strategies (Billett, 2002; Marsick & Watkins, 2001). Furthermore, it is assumed that collective learning and shared meanings and understandings arise through explicating and reflecting collectively on experiences, knowledge, thoughts and assumptions (Dixon, 1996; Manley et al., 2009; Nonaka & Takeuchi, 1995). This requires frequent dialogue and intensive interaction between people, which for example could be promoted by realising knowledge networks such as communities of practice (Abma, 2005; Bindels, Cox, Widdershoven, van Schayck & Abma, 2014; Wenger, 1998).

Within this study, it is illustrated that deliberately arranged strategies aimed at promoting learning were indeed helpful. The planned action research project (chapters 4 and 5), for example, encouraged momentum and change, while organised moments for dialogue between stakeholders provided a platform for learning. Also, the conscious attention Ragna and I paid to our mutual learning process prevented us from lingering in the daily issues driven by the pressures of everyday working life (chapter 3). The daily sharing and evaluating of learning goals within the organisational sphere (chapter 6) had the same function. On the other hand, practitioners did not always fulfil the image of self-directed learners: practitioners were not interested in determining their own learning goals or using interactions purposefully for their own learning. As illustrated in the earlier chapters, learning was foremost a ‘by-product’ gained in passing while working to improve practice. It emerged spontaneously or ‘on the spot’, by doing and
experiencing, by seeing examples and the responses of others, and by small incidents and unforeseen mutations (Fenwick, 2000b; Gold, Thorpe, Woodall & Sadler-Smith, 2007), such as the absence of the nurse manager (chapter 2), the ever-changing group of students (chapter 5 and 6), or questions from the residents’ family members (chapter 5). It seems therefore that learning is first and foremost an emergent process encouraged and enriched through both the (random) assembly of planned strategies and unforeseen (inter)actions, bodily responses and changes.

**Closure of this section**

The first part of the research question concerns the nature of learning within the context of the care for older people and is aimed at conceptualising workplace learning. In answer to this question, it is argued that workplace learning is a complex phenomenon, which could be defined as the on-going and relational adapting through the enactment of small and large perturbations in which both agent(s) and environment change and co-evolve towards enlargement of the space for possible action. Enactment in this sense means being at once bodily, cognitively and experientially engaged in the world by moving, acting and participating in it (Varela, 1999).

At the start of this study, it was assumed that this learning took place at different individual and collective levels of learning. Indeed, the term ‘level’ has been used as such throughout this thesis. However, as mentioned earlier, I now consider the term ‘sphere’ to be more appropriate than ‘level’. A level could be interpreted as a more or less static and clearly defined stage, and multiple related levels may suggest a layered and thus ordered phenomenon. During this study, however, it became evident that boundaries or lines between inner/outer or distant/near become blurred or deconstructed and do not fit neatly or linearly with actual practice. Consequently, the word ‘level’ as well as the figure (figure 1) in which the individual and collective levels of learning are illustrated in relation to each other, now seem inadequate representations of the relational, responsive and emerging complexity. They fit a complicated instead of a complex world. A sphere, in contrast, I envisage as lively and changing, with not well-defined but semi-permeable ‘fluid boundaries’, and instinctive rather than tangible and observable. A sphere is holistic, relational and dynamic.

However helpful it has been for focusing in on different learning relationships and structuring this thesis, the figure in which the individual and collective levels of learning are related seems to be mechanical and does not adequately reflect the dynamics of the processes within and between levels. While recognising the necessarily simplistic representation of reality afforded by a model, I now suggest a more dynamic and organic ‘model of learning spheres’ to illustrate learning as a
complex and interrelated phenomenon in which every sphere is a dynamic part or subsystem of a bigger whole as well as a living system consisting of several subsystems (figure 2).

Researching and advancing workplace learning

In this section I focus on the second part of the research question: how can an in-depth emic understanding of learning be generated in a way that is also beneficial to generating learning itself? The aim is to increase understandings on how to study and promote workplace learning within the context of the care for older people.

I examine the consequences and implications of workplace learning approached from a complexity, and specifically an enactivist, perspective. Again, I begin with my own learning, perspective and beliefs as a facilitator and researcher within this study. From there, I look more closely at the research of workplace learning and argue that it is intersubjective, flexible, inter-relational and multi-method while accelerating workplace learning.
My own learning: developing more flexibility using creative and pedagogic methods

Based on social-constructivist and socio-cultural theories of learning (Hager, 2011), I initially valued planning and organising (collective) learning, (collective) reflection and the explication of knowledge, thoughts and assumptions. Participatory action research (PAR) fitted this social perspective of learning, as well as the CIUs’ aim to improve practice, and offered guidance to enhance and research learning. I used Kemmis and McTaggart’s (1988) framework to structure the action research process (see chapters 4 and 5) and to provide the direction I needed as a novice action researcher. I encouraged others to set clear goals, to identify learning activities and to reflect on lived experiences as individuals as well as a group (see chapters 3 and 4). Additionally, I researched these processes on a meta-level, for example by individual interviews with research group members (chapter 4), to answer the research question presented in this thesis.

My somewhat rigid adherence to structure was, however, de-motivating for my co-researchers. They experienced the action research process as both passive and bureaucratic (chapter 4). The somewhat slow process, in which thinking and doing, and planning and acting were separated and divided in diverse phases, did not fit the hands-on, embodied and responsive nature of learning and did not reflect the dynamic context. It hindered practitioners in taking action and the energy within the group decreased (chapter 4). Furthermore, the ward atmosphere and relationships with others were considered as more influential than the strategic planned actions (chapters 3 through 6), while unforeseen incidents, actions and interactions did encourage momentum, learning and change. The data gathered by individual interviews gave me information to answer the research question (chapter 4), but felt extraneous to practitioners and did not feed (mutual) learning and research processes.

Developing flexibility and promoting narration

Based on these lived experiences, I attempted to respond more flexibly to events and tried to adapt to and affiliate with others’ learning (preferences) to encourage learning and change. Instead of controlling and planning the learning and research processes, I started to use opportunities that arose within the research process and on the unit for advancing and researching learning. For example, I spent less time encouraging deep reflection and the formulation of learning goals, but embraced the often spontaneous narrative expression of felt experiences that arose when practitioners met each other in daily proceedings on the unit or in planned meetings. In this way processes were shaped by practitioners and their stories and thus considered important. This kept practitioners (and myself) energised and
motivated, as can be seen in the narrative presented in chapter 4, and created momentum and led to (unforeseen) movement and change (see chapter 5).

These transformations made me realise that my beliefs, values and way of being as a facilitator and researcher had been and were of great influence. Furthermore, experiencing that (unplanned) alterations led to new changes, gave me the feeling that it was not so much what I did, but that it was my (and others’) being in the situation and doing something which created momentum, learning and change. Sensing what others needed and ‘maintaining the flow of energy’ made a difference. This gave me further confidence in letting things go and trusting processes such as these to unfold. I became more focussed on generating and role modelling social conditions for learning and change, like safety, openness and equality. Embracing and valuing everyone’s input explicitly encouraged practitioners to share their narratives.

I learned that telling and sharing stories revealed how and why individuals (including myself) valued, experienced and coped with situations in relation to other parts of the system, such as other people and (social) structures, and thus the wider context, in the same manner as the stories presented in the previous chapters do. Telling stories advanced learning particularly when the narratives depicted opposite or different perspectives or urgent and messy issues, like how to involve older people in meaningful activities (chapter 4 and 5) or how to deal with time constraints (chapter 6). Narratives unfolded relational aspects and new possibilities for acting, and initiated unforeseen responsive processes. Sharing stories also led to mutual understandings, positive and deeper relationships, and further collaboration. For example, within focus groups (chapters 4, 5 and 6) participants gave each other positive feedback and shared suggestions by relating their experiences about how to cope with similar situations. By telling of their own experiences they became aware of their own positions, uncertainties and enactments in relation to other elements (colleagues, structures and routines) within the bigger whole (the CIU as environment). These gave new insights, empowering themselves and each other to take responsibility for their own learning.

By experiencing these responsive processes, I began to understand that the (spontaneous) narrative expressions of lived experiences were occasions for researching as well as advancing learning, and that knowledge and real understandings arose in interaction and through a compound of experiential, cognitive and bodily engagement. Consequently, I started to experiment with other methods that acknowledge the embodied, tacit and pragmatic ways of knowing that arise through enactment. Such methods support the narrative expression of experiences for generating learning and enable deeper understandings.
I fed back observations, for example those of research group meetings (chapter 4) or those concerning how practitioners involved residents in activities (chapter 5), to encourage narration of these experiences and to give further meaning to relational aspects and responses. Furthermore, I started to integrate creative and art-based methods, like staging a play (chapter 4), using photo cards for association (chapter 4) and making collages (chapter 3 and 5). These are active and bodily experiences in their own right. I experienced, as have others (e.g. Battisti & Eiselen, 2008; Gherardi & Perrotta, 2014), that creating and sharing these expressions in a genuine dialogue was useful in bringing tacit and embodied knowledge more to the surface, unfolding new understandings and ways of doing and being. In addition, a deeper creative exploration of multiple, earlier told or written narratives via the (co)construction of auto-ethnographies (chapters 2 and 3) and critical creative hermeneutic analysis (chapter 3 and 5), linked the interrelated spheres further and deepened the layers of meaning given to experiences from multiple emic perspectives and thus learning. New understandings about perspectives, roles and positions unfolded and deeper insights into how personal growth was interrelated with and influenced by own qualities and uncertainties, the nature of relationships as well as the wider environment emerged. Experiencing this, I realised that explicating and interpreting or studying felt experiences, and thus workplace learning, by the use of different creative and active methods contributed to participatory sense making (De Jaegher & Di Paolo, 2007; Weick et al., 2005). Such methods embraced the natural flow of energy and change through the different spheres (Tosey & Llewellyn, 2002) while momentarily slowing down the pace in order to accelerate learning.

Intersubjective research: preserving complexity and advancing learning

Approaching learning as a complex phenomenon (the ontological principle) has axiological, epistemological, and methodological consequences. First, the research process should acknowledge embodied, tacit and pragmatic knowing that arise through enactment. It needs to embrace and inspire on-going processes of learning and change and contribute to the human flourishing of stakeholders. As such, research and thus learning processes should be flexible and adaptive, following practitioners’ interests, needs and experiences. Second, the focus of research and learning should not only be on learning conditions (like places, resources, objects and structures), outcomes or separate experiences of individuals or groups, but on the relations that merge these parts or elements in action, both within and between the reciprocal interrelated spheres. This requires processes of sense making and giving profound meaning to lived and felt experiences in relation to oneself and others. And third, it must be acknowledged that the researcher’s
position is neither value-free nor distinct. He or she is a living subsystem and part of the interrelated spheres (the whole), and is thus self a participant and learner.

This said, I agree with Sumara and Davis (1997) that the research of workplace learning should not be approached as a complicated task by adding a set of research practices to existing practices nor to reflect on research practices as separate descriptions and analyses of particular events. Instead, the research should be focused on the exploration of interactions as complex responsive processes of relating (Stacey & Griffin, 2005b) in such a manner that learning is advanced and accelerated. In line with McDaniel, Jordan Lanham, and Anderson (2009), I believe that this requires a different stance towards research, one that goes beyond traditional or well-known quantitative, qualitative and transformative methodologies. Others, however, argue that a whole new methodological approach or framework for science is needed to study complex processes (Ali, 2014; Jörg, 2009), which according to Jörg (2009) “cannot be simply found, but has to be invented” (p. 15).

This study could contribute to this methodological shift. It challenges some common fundamental dichotomies regarding traditional methodologies as such dichotomies present barriers for researching learning in order to facilitate this learning. Based on these insights and my experiences within this research, some methodological suggestions could be given to advance a complexity view of research into workplace learning within the residential care for older people. In addition, this study gives some insights into the role and being of the researcher who intends to research and advance learning from a complexity view.

Challenging common dualisms

The various research methodologies described within the literature propagate contrasting underlying ontological and epistemological assumptions (Niessen, Vermunt, Abma, Widdershoven & van der Vleuten, 2004). The research into learning as a process that is grounded in complexity theory challenges such classifications and problematizes some common dichotomies. I highlight those two that are most prominent in this research with the aim to deepen further understandings in researching and advancing learning from a complexity view.

Knowledge generation and practice improvement

A traditional approach to quantitative as well as qualitative research is that of observing or interpreting reality from a greater or lesser detached stance to uncover and represent the predictable and definite reality without influencing this reality (Polit & Beck, 2004). Such research should be valid and reliable (Polit & Beck, 2004) or trustworthy (Lincoln & Guba, 1986), and is aimed at developing knowledge that is somehow generalizable or transferable to other contexts.
Oppositely, transformational forms of inquiry, like PAR, have the aim to improve practices following a cyclic process of sequential phases like analysis, planning, doing and acting, and evaluating (Kemmis & McTaggart, 1988; Reason & Bradbury, 2001). Such designs are focussed on practical issues and purposes alternating action and reflection, and practice and theory (Reason & Bradbury, 2001). The assumptions underlying this view acknowledge the intersubjective nature of reality and allow the interpretive differences to become visible.

Reality from a complexity perspective, however, is an experienced reality, and not pre-given or fixed, but ever-changing. It arises and transforms simultaneously in and through the embodied (inter)actions of agents within the greater context (Varela, 1999). These embodied actions are based on past experiences and expectations about the future (Stacey & Griffin, 2005a). Past experiences and future expectations are not ‘givens’, as these are reconstructed and reinterpreted in the present and thus constantly changing. The present itself is not seen as merely a point in time that divides the past and future in a linear manner: past experiences and future expectations are not separated but interwoven and expressed in, what Stacey and Griffin (2005a) call, ‘the living present’. Inherent to such an experienced reality and view of time is the notion that theory and practice are not split (Stacey & Griffin, 2005a). Indeed, theoretical, practical, and other kinds of knowledge are reflected in knowing, doing, and being, which are inseparable and an integral part of the experiences and expectations unfolding in embodied actions in the living present.

The primary aim of researching an experienced reality, in this case workplace learning, is not the generation of generic knowledge. Neither is it a planned and purposeful change of practice in which thinking, analysing and planning are separated from doing and experiencing (see for example chapter 4). Instead, this research into workplace learning should be understood as “a way of organising and interpreting one’s lived identities” (Sumara & Davis, 1997, p. 420): an interpretative, reflexive and on-going process of sense making (De Jaegher & Di Paolo, 2007; Weick et al., 2005). It focusses on the spontaneous and improvisational nature of relating by way of exploring embodied actions and responsive interactions of those involved, which generates learning. This is an emergent and self-organising mechanism which gives rise to changes of which the direction is often hard to predict.

Instead of generating general knowledge or improving practices purposefully, the research into workplace learning is thus a form of learning itself aimed at supporting and accelerating learning processes. Although not the main purpose of such research, these processes may lead potentially to improved practices. Additionally, responsive processes made visible in in-depth case studies (Anderson, Crabtree, Steele & McDaniel, 2005; Hetherington, 2005), perhaps presented in text (like in this thesis) or other forms, may have a learning potential for readers.
Science and art

As explained earlier, knowing and thus learning emerges in and through the intertwined combination of cognitive and bodily engagement (Varela, 1999), which is difficult to express, especially in the midst of action (Cherry & Am, 2011; van Manen, 2008). Aside from it being challenging to bring embodied and tacit knowing to the surface, moments of (inter)action change at the same time as they unfold. The practice being researched is thus continually transforming, being always in the modus of becoming (Clegg, Kornberger & Rhodes, 2005).

To study such embodied and temporal processes it is important ‘to grasp the world pathically’: to see the world as being relational, corporeal, situational, temporal, and actional, and to acknowledge non-cognitive understandings about self in situations and felt senses of being in the world (van Manen, 2007). Furthermore, it is important to focus on the relation between knowing and acting and the articulation of a practice while it is being practiced. According to Gherardi (2011) this could be realised by using practice as an epistemology through which the dynamics of the becoming of a practice as a socially sustained mode of action are highlighted; neither the value of knowledge nor the way knowledge is acquired is central, but how knowledge transforms and circulates by using it, and how it is produced in contexts of practices. Within such a pathic, relational and ecological model of inquiry I believe that science and art meet each other and should therefore be integrated.

Science concerns the systematic acquiring of knowledge aimed at the discovery of general truths and patterns. It focuses on that which is perceptible and presented (Battisti & Eiselen, 2008), requires evidence to support claims and provides explanations related to theories (Eisner & Powell, 2002). As such, science is based on the rational and cognitive, while it tends to overlook the emotional and affective dimensions and underlying, often unconscious, dynamics of social situations (Battisti & Eiselen, 2008). Traditional approaches and methods, especially those within quantitative research, do therefore little justice to the complex nature of reality. Although in literature quantitative research methods and statistical analysis are sporadically advocated for researching complexity (e.g. Gilstrap, 2013), such research seems to be embedded within a paradigm of simplicity (Horn, 2008): it is controlled within a set of parameters, and is observed from a distanced and ‘objective’ stance seeking for principles of order. It thus reduces complexity (Davis & Sumara, 2005). Qualitative methods seem to have a better fit with a complex world as these methods are phenomenological and study processes, events and interactions in-depth (Denzin & Lincoln, 2011; Niessen et al., 2008). However, traditional methods like interviews have their limitations concerning the expression and sharing of relational, embodied and tacit knowing unfolding in practices (Battisti & Eiselen, 2008; Eisner & Powell, 2002).
Art, on the other hand, is not concerned with truth, but with the expression or application of creativity and imagination. It depends on feelings and sensory experiences, is based on personal preferences, addresses particulars, and is appreciated for its beauty and emotional power (Eisner & Powell, 2002). Art is historical and culturally based and goes beyond the rational and cognitive level (Alexander, 2005; Battisti & Eiselen, 2008). In view of that, the use of art-based methods, like creative writing (stories, fairy tales and poems), painting, sculpting, drama, dance, and film, could usefully complement traditional research methods, as I have experienced in this research (see the section concerning my own learning).

The creation and performance of art within research is not an aesthetic attempt, but an experiential, empathic and body-centred method of knowing, in which the coming to know and representing the known are intertwined (Alexander, 2005; Roberts, 2008). For example, by using drama (chapter 4) members of the research group expressed their feelings, performed current practices and constructed the desired situation, through which they became more sensitive to the contextual and relational nature of their experiences and understandings, as to how they could involve residents in meaningful activities, grew. The drama was helpful in revealing and exploring embodied and tacit knowing (Battisti & Eiselen, 2008; Loftus, Am & Trede, 2011), and in constructing, visualising and reliving past (individual and cultural) experiences in the present (Roberts, 2008). Furthermore, art-based methods can contribute to the understanding of underlying dynamics, relational processes, emotions, ambiguities and resistance (Battisti & Eiselen, 2008; Loftus et al., 2011), and encourage the engagement of and open dialogue with others (Alexander, 2005; Roberts, 2008). As such, the use of art-based methods reflects the embodied cognition as explained within enactivism as well as the underlying principle of the research into learning as being a form of learning itself, while supporting and accelerating this learning.

Some methodological suggestions

The small amount of literature concerning the study of complex systems generally or the study of (workplace) learning as a complex phenomenon specifically, gives mainly general and abstract methodological starting points. The experiences within this research and the foregoing ontological and epistemological interpretations, however, could offer some concrete suggestions for researching and thus accelerating workplace learning within the residential care for older people.
**Promote participation and a communicative space**

As illustrated within this research, a complexity stance moves the analysis of learning away from the individual or social and towards the relational web of heterogenic parts or elements (Davis & Sumara, 1997; Fenwick, 2000a; Küpers, 2008; Niessen et al., 2008). No one other than the person concerned can express a felt sense of being and knowing in the world. There is none other better placed to identify the interplay of various elements and the relational significance thereof. As such, the research of an experienced reality and a complex phenomenon like workplace learning is participatory and intersubjective by definition, while the common ideal that the researcher should not affect what is being studied, disregarding his or her own ideas, emotions and values, is not feasible (Stacey & Griffin, 2005b).

Participation in research processes could be promoted by encouraging a ‘communicative space’ (Wicks & Reason, 2009) in which people, including the researcher (see chapter 2), feel respected, and challenged and supported to contribute and to participate. Such a space should provide safety and those in it should experience openness to express and explore differences. It is important to negotiate issues around power and influence, to realise shared decision-making, and to allow others to influence processes, as all of these aspects will contribute to the growth of reciprocal, equal and tolerant relationships.

The promotion of communicative spaces and reciprocal relationships is neither a linear, one-time process nor a purely dialogical endeavour. It requires continuous attention and care as these spaces and relationships evolve over time: they are in themselves complex systems (see for example chapter 3). As explained in the previous chapters, person-centred (Cardiff, 2014) and adaptive leadership (Corazzini et al., 2014), a style of facilitation that is based on the principles of practice development (Manley, McCormack & Wilson, 2008; Munten et al., 2012), and an appreciative approach and attitude (Cooperrider, Barrett & Srivastva, 1995) are helpful to influence and support such spaces and relationships. Furthermore, the research process itself should contribute to the growth of communicative spaces and reciprocal, equal and tolerant relationships by acknowledging the diversity of insights and realising possibilities for collective interpretation and sense making (Davis & Sumara, 2005; De Jaegher & Di Paolo, 2007; Weick et al., 2005).

**Create a flexible and longitudinal design**

From a complexity perspective it seems particularly necessary to set, in any case, the research process in motion because this will unfold new shifts and changes within the various spheres. As seen in this study (chapter 5 and the section concerning my own learning), this can be accomplished by using and nurturing
natural energy flows within the unit (Tosey & Llewellyn, 2002) and giving attention to events or topics that are concrete and meaningful to participants. Situations and procedures experienced as ambiguous or messy (Cook, 1998, 2009) or an issue which practitioners feel is urgent to improve (Kotter, 1996) are good starting points.

Subsequently, instead of a traditional and linear research process comprising separate and successive phases of collection, interpretation and dissemination of data, a flexible and emergent design is needed to study the complex responsive processes of relating (see chapter 4 and the section concerning my own learning). A flexible design makes it possible to adapt to the learning preferences of practitioners and the felt sense of energy (Tosey & Llewellyn, 2002), to encourage on-going processes of learning and to anticipate unpredictable and unforeseen changes during the research (McDaniel et al., 2009; Sumara & Davis, 1997). As such, the research design is not a product, but an activity defined by McDaniel et al. (2009, p. 5) as “the on-going process of updating the strategies and methods one needs for studying [and enhancing learning processes]; it is a dynamic system of inquiry that coevolves during the research.”

If used loosely an evolutionary and developmental form of inquiry, like PAR, can fit such a purpose, as we have experienced in this research and is argued by others (Davis & Sumara, 2005; McMurtry, 2010; Phelps & Hase, 2002). It can provide a methodological framework for setting emerging processes in motion and for following and monitoring these complex processes. In addition, such research has a longitudinal nature which makes it possible to study the evolvement of workplace learning over time and adopts mixed methods and models, which is considered necessary for the study of complexity (McDaniel et al., 2009; Phelps & Hase, 2002).

Such a research process should not be dominated by detailed plans (Davis & Sumara, 2005; McDaniel et al., 2009) as I have explained in chapter 4 and 5. In case of an action research project, prescribed phases of an action research cycle, like those of Lewin (1947) or Kemmis and McTaggart (1988), should be viewed flexibly and used loosely as the process is considerably shaped by small incidents, and unforeseen actions and interactions. Furthermore, as explained in chapters 4 and 5 the accent should be on rapid improvement cycles of attempting and evaluating interventions that arise from earlier actions and sense making rather than a thought-out analysis and planning phase (Plsek, 1999; Weick et al., 2005). This will keep the energy flowing.

**Use multiple creative and active methods for sense making**

As previously argued, learning can most usefully be investigated as on-going, dynamical and sensorimotor processes of participatory sense making and mutual
incorporation in the moment-to-moment (inter)action of embodied agents (De Jaegher & Di Paolo, 2007; Fuchs & De Jaegher, 2009). I believe that the narrative and pathic expression of past experiences and future expectations could support and encourage such processes. A narrative, individually or collectively constructed and presented in oral, written or other form, is non-linear, holistic and temporally ordered. It shapes and orders past events and objects in a meaningful whole from the narrator’s point of view (Chase, 2005). As such, a meaningful narrative provides in-depth insights into lived experiences and embodied perspectives of people, how these were shaped by history and in relation to other parts (individuals, structures, etcetera) and the wider context. It gives information of the single system and the interweaving of more complex systems (Stacey & Griffin, 2005a; Uprichard & Byrne, 2006), and thus a better understanding of how the inter-related spheres are connected and complex responsive processes unfold. As new understandings and knowledge arise through this activity of shaping and giving meaning to experiences, the narrative expressions enable intertwining of research and learning in one and the same process. Evolutionary and incremental change is in this way supported.

Sense making of multiple narratives on a meta-level can generate more in-depth insights. It will enlarge understandings into the relational dimensions of experiences from multiple emic perspectives, unfolding change and action. For example, in this research the blending of experiences from diverse stakeholder groups concerning the improvements in daily activities within the unit (chapter 5) and the (co-)construction of auto-ethnographies (chapters 2 and 3) brought attention to both micro interactions and greater patterns that were evolving. This led to a multi-layered understanding among participants and thus the promotion of learning and change, corresponding with Stacey and Griffin’s (2005a) perspective, in which the person’s reflective narrative is seen as raw material for deeper exploration, or that of Ali (2014) who promotes story circles of generating anecdotes, sense making and shaping interventions.

As explained in the section regarding my own learning, the narrative expression of embodied and relational knowing and doing can be supported and powered by the use of multiple qualitative research methods. Participant observations and group interviews, like focus groups (Kamberelis & Dimitriadis, 2005) and collaborative and auto-ethnographic interviews (Ellis, 2004) in which lived experiences are shared and explored to encourage the co-emergent of knowledge, are good options. Creative or art-based methods can complement these methods and are especially useful for exploring and explicating embodied and tacit knowing to create meta-understandings that go beyond pre-existing understandings (Battisti & Eiseleen, 2008; Loftus et al., 2011). Being experiential, empathic and body-centred, they form a counterpart to dialogical expressions of experiences and can offset the limits of language (Gherardi & Perrotta, 2014). Art-based methods
create a creative space, promote participation and empowerment, and reduce the gap between the known and unknown, thereby initiating change (Alexander, 2005; Roberts, 2008). They unfold multiple and alternative perspectives and interpretations, and thus other ways of being, doing and knowing in everyday practices (Battisti & Eiselen, 2008; Loftus et al., 2011). Additionally, the creation of an art piece as a (re-)enactment of experience is both a research process and a form of (re)presentation (Alexander, 2005; Roberts, 2008). Data-gathering, interpretation and dissemination can therefore overlap each other. This challenges traditional and linear research processes and promotes open, flexible and recursive approaches to research, as are necessary in the research of complex phenomena in which the end point is not clearly defined (Roberts, 2008).

**The researcher’s skills, being and attitude**

The researcher does not have a detached or objective role when researching and advancing learning from a complexity view. In line with my own experiences, he or she is a complex system as well as part of the whole and is therefore also a co-evolving participant in the research: the researcher is thus subject as well as object of study. In turn, participants are co-researchers or research partners and thus also both subjects and objects of study. This changes the traditional role of the professional researcher as a detached observer in that of both the participatory facilitator and the learner. Consequently, the researcher requires diverse skills and knowledge, for example concerning communication, learning, and group processes (Boog, 2003), change management (Khresheh & Barclay, 2007), power issues (Jacobs, 2006), and conflict (Abma, 2000). Over and above these areas of expertise, I believe that the researcher’s being and attitude are of greatest influence and particularly important when researching and advancing learning as a complex phenomenon.

First, as a complex system, the researcher should be aware of the influence of his or her own values and beliefs, as shown by my own experience (see chapter 2 and the section concerning my own learning). This requires knowing self and feeling, observing and acting on inner signals as well as the willingness to explicate and explore own purposes, assumptions, perspectives, and sense making (Lieshout van, 2013; Macintyre Latta & Buck, 2008; Marshall & Reason, 2007). As role models for others such researchers need to demonstrate a learning attitude and learning-focused values, for example by asking for feedback, explicating their own learning and showing their own vulnerability as illustrated in chapter 3. Furthermore, they should be aware of and take seriously their own intuition and bodily sensations within their own energy field (Tosey & Llewellyn, 2002). Recognising their own possibilities as well as limitations in changing a particular situation are helpful in
maintaining self in the situation and in shaping future behaviour as explained in chapter 2.

Second, the researcher should have an open, respectful and caring attitude towards others, and be ready to build reciprocal, equal and tolerant relationships with co-researchers (Boog, Slagter & Zeelen, 2008; Maiter, Simich, Jacobson & Wise, 2008). He or she must have the intention to involve all stakeholders in the research process, supporting them in investigating their own practices, whereby personal qualities, creativity and professional knowledge are acknowledged. As can be learned from this research, this can be enhanced by valuing and promoting equality, participation and mutuality and by creating particular social conditions (such as openness, safety and mutual trust) and encouraging democratic processes and joint decision-making (Boog et al., 2008; Manley et al., 2008). Furthermore, such research necessitates a reflective curiosity in the researcher, characterised by really wanting to know other perspectives while continuously looking for and working with feedback (Marshall & Reason, 2007).

Third, the researcher needs to understand and live the underlying principles and mechanisms of a complexity perspective on researching learning (Horn, 2008). This means being able to adapt facilitation to the energy he or she feels (Tosey & Llewellyn, 2002), embracing emergent processes and having the willingness and ability to act in circumstances of uncertainty (Cook, 2009; Marshall & Reason, 2007). Instead of predicting and controlling, the researcher should be open to the dynamics within practices, prepared to learn from observed changes and capable of shifting and adapting as a result of new understandings (Lieshout van, 2013; McDaniel et al., 2009). This way of working is supported by being sensitive to and mindful of shifts in the felt energy and the uniqueness of events and possibilities that arise (Davis & Sumara, 2005; Langer, 1997; McDaniel et al., 2009; Tosey & Llewellyn, 2002), while creativity, supported for example by the use of art-based methods, encourages questioning of the familiar and thinking outside the existing boxes (Loftus et al., 2011).

Closure of this section

Besides conceptualising learning, the aim of this research is to increase understandings on how to study and promote workplace learning within the context of the care for older people. This section has focused on the second part of the research question: how can an in-depth emic understanding of learning be generated in a way that is also beneficial to generating learning itself? In answering this question it has become clear that understandings and thus learning arise by an on-going, interpretative, reflexive and recursive process of exploring embodied actions and responsive interactions by those involved (Davis & Sumara, 2005; Stacey & Griffin, 2005a). Grounded within enactivism, this process
is not limited to collective reasoning to construct or represent shared meanings intended to interpret, predict or explain the behaviour, thoughts or actions of self and/or others (Fuchs & De Jaegher, 2009). Instead, social understandings arise in the moment-to-moment (inter)action of embodied agents, and these are on-going, dynamical and sensorimotor processes of participatory sense making and mutual incorporation (De Jaegher & Di Paolo, 2007; Fuchs & De Jaegher, 2009). Consequently, there is always sense making and thus learning as these conscious or unconscious processes are interwoven in (inter)actions. This study indicates, however, that such learning processes can be enhanced by explicating and interpreting learning: these activities go beyond the intention of traditional quantitative and qualitative methodologies.

Research into workplace learning within the residential care for older people should be intersubjective, participative, and flexible. It should bring embodied and tacit knowing, unfolding as they do in action and relation, to the surface. Such surfacing is encouraged by the narrative expression of experiences (Stacey & Griffin, 2005a; Uprichard & Byrne, 2006) and the use of creative and multiple methods (Hodkinson & Macleod, 2010; McDaniel et al., 2009; Phelps & Hase, 2002; Roberts, 2008). The researcher is self a part of the research. The researcher’s being and attitude is therefore of great influence. He or she should be open and respectful, sensitive to the flows of energy within him or herself and the unit, and mindful and adaptive to dynamics and (surprising) possibilities that arise within daily practices.

Such research grounded in complexity and specifically enactivism raises, however, issues of verification. Criteria of trustworthiness (Lincoln & Guba, 1986), for example, cannot be straightforwardly applied. Consideration must be given to the ways in which others can review the research process and check if the research did justice to the complexity.

**Some methodological reflections**

The study reported in this thesis has several methodological strengths and weaknesses. One such strength is the prolonged engagement. I stayed in the research setting for a considerable time through which persistent observation of the situation was possible. Furthermore, triangulation of data and method occurred and a viable insider perspective or emic account is established as practitioners were intensively involved and questioned on their experiences in the research. Although differences in roles, knowledge and expertise might have affected the trustworthiness and authenticity of the research, participants felt they were heard and indicated experiencing a sense of safety and equality. There was space to share ideas and discuss concerns, and ownership and reciprocity were
created during the research. Nevertheless, the perspectives of residents and their family, as well as those of managers, are absent in this research. Although not the focus of this research, their voices would have given additional perspectives on the consequences of workplace learning, for example concerning the residents’ autonomy and empowerment, and could have encouraged practitioners’ further learning.

This research has been affected by my own beliefs and the experiences gained during the research. Because these experiences were powerful in causing shifts away from my initially held assumptions, I may have unconsciously used language and sought evidence to establish and confirm my shifting understandings and values. I tried to minimise this by gathering and analysing data jointly with participants and by working together with other researchers not familiar with the research context. I reflected continually on my own being as well as my assumptions and beliefs, adapting and interweaving these with perspectives of others as is congruent with a complexity view.

I am aware that the research findings are based on a single case within a specific setting limiting generalisation. Yet, the detailed narratives reflect underlying relational principals and micro-mechanisms at play and contribute to a better and in-depth understanding of workplace learning. They illustrate how knowledge actually emerges, practitioners learn and grow and practices evolve and change, all of which may be of pedagogical value for researchers and managers, and contribute to the on-going dialogue concerning emerging perspectives about learning at, through and for work.

Inspirations for practice

Workplace learning, defined as the on-going and relational adapting through the enactment of small and large perturbations in which both agent(s) and environment change and co-evolve, is not completely predictable or manageable. Given the complex nature of learning, learning facilitators (for example (action) researchers, supervisors, mentors, managers and colleagues) should value the happenstance character by which people learn and should not have the ambition to completely plan, organise and manage learning processes and outcomes in advance. Instead of applying prescribed learning objectives, linear action plans and rigid management strategies, they should inspire and invite others to participate and engage (together) in daily work situations and sense making (De Jaegher & Di Paolo, 2007; Weick et al., 2005), and encourage conditions that preserve and promote complexity and emergence (Davis & Sumara, 2005; McMurtry, 2010). To help achieve this some suggestions for practice are given here in the form of suggestions for facilitators.
Realising decentralised forms of organisation in which bottom-up changes can emerge and in which decisions are made collectively and shared with all members seem to be important, as decentralisation is more effective in adapting to changing circumstances (Davis & Sumara, 2005; McMurtry, 2010). Allowing messiness (Cook, 2009) and minimising the structures and rules through which the unit or organisation balances on the edge of chaos without actually drifting into chaos (McMurtry, 2010; Pina e Cunha & Vieira da Cunha, 2006) will also facilitate emergence, learning and rapid action. Furthermore, promoting reciprocal relationships and collaboration within the unit and organisation as well as with other (health care or educational) organisations, for example by working in shared projects and by inviting nurse teachers to educate within the care organisation, are crucial for learning as well as for creating possibilities for interactions (Davis & Sumara, 2005; McMurtry, 2010). Through collaboration and in interaction people can influence each other, creating perturbation, especially when diversity is valued and promoted. As such, achieving a second-order democracy that welcomes and appreciates differences and promotes responsibility for continuous processes of relating, instead of a first-order democracy that emphasises coherence, agreement and effective coordination (Gergen, 2003) will increase momentum, thereby enhancing learning and change.

Other suggestions for encouraging challenging and changing workplaces and advancing responsive, embedded, and embodied learning processes include offering multiple learning placements to students in the unit, job rotation and working together side-by-side with (experienced) others in daily activities. Both staff and more experienced students can function as role models and coaches in an experienced and non-verbal manner providing living examples of best practice, or can ask critical questions which encourage sense making and mutual learning. Moreover, workplace learning can be advanced and accelerated by researching learning in ways which include the encouragement of occasions for active learning, the narrative expression of experiences and the use of multiple creative methods aimed at promoting dialogue with self and others using all senses (Battisti & Eiselen, 2008; Dewing, 2008; Loftus et al., 2011; Stacey & Griffin, 2005b; Uprichard & Byrne, 2006). These dialogical and creative constructions and opportunities for participatory sense making (De Jaegher & Di Paolo, 2007; Fuchs & De Jaegher, 2009) can advance reflexive processes in routine practices and afford moments of evaluation and opportunities for intentional actions.

Finally, learning facilitators should develop and embrace self-observation, and a sensitive and mindful attitude to noticing shifts in own and others’ felt energy, and becoming aware of unanticipated directions and possibilities for action that emerge (Davis & Sumara, 2005; Langer, 1997; McDaniel et al., 2009; Tosey & Llewellyn, 2002). This could be supported by valuing and taking seriously felt senses and bodily experiences but also by realising a system of support, for
example by engagement in a mentoring relationship, and critical and creative dialogues about self with others may be helpful (Lieshout van, 2013).

Recommendations for further research

As this research has taken place in just one residential care organisation for older people, more research into how complexity could be maintained and how learning at, through and for work can be advanced is necessary in other health care organisations within the care for older people as well as in other fields. Findings arising from this study could be further refined and developed while insights in workplace learning within other types of health care organisations could give new suggestions for advancing and researching learning from a complexity approach. Such research should explore in more depth the relational and emergent processes within the spheres as well as between multiple learning spheres. To explore such interdependent relational processes, longitudinal, flexible and participatory research designs and the use of mixed methods are advised as well as analyses of different narrative data gathered within the diverse spheres from a multiple emic perspective. Besides involving health care practitioners, it would be useful to include service users and their family as well as managers and executives in such study. Their perspectives on workplace learning will likely influence the relational processes in ways unexplored in the present research. Furthermore, transcending organisational boundaries by researching more expansive environments would also seem useful (Engeström, 2011; Fuller & Unwin, 2011). Exploring for example the collaboration and learning between different organisations, like a health care organisation and an educational institute, could extend the interrelated spheres giving insights into the bigger whole and inter-organisational spheres as subsystems.

Further development and trying out of methodologies to achieve a better fit with complexity and more specifically workplace learning grounded within an enactivist worldview are necessary (Ali, 2014; Jörg, 2009). Besides experimenting with art-based and other methods that may be helpful in exploring embodied knowing and supporting sense making and workplace learning, it seems useful to further explore how learning and knowing unfolding in the midst of action could be researched and thus promoted (Fenwick, 2008). These insights could contribute to a greater use of opportunities and occasions that arise in daily practices, however may require less well-known or not yet developed research methods and approaches. An important focus of future research should be the further development of quality and ethical procedures appropriate to a flexible and emergent research design, procedures that go beyond those used within participatory or narrative and auto-ethnographic research.
Finally, as the researcher’s attitude and being is of great influence, further insights are needed into how learning facilitators or researchers could develop sensitivity for felt energies and inner and bodily signals, as well as an attitude mindful of others’ needs and the surprising learning opportunities within daily practices. Research is necessary into how to develop and cultivate such an enacted stance of inter-being, and how such a stance is able to facilitate research that is also enhancing learning and human flourishing. Such research should be longitudinal, multi-method and acquired in relation with knowledgeable others so that subtle changes within the person as well as other living systems can be brought to the surface, articulated and cultivated.
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GENERAL DISCUSSION AND CONCLUSION

Lieshout van, F. (2013). Taking action for action. A study of the interplay between contextual and facilitator characteristics in developing an effective workplace culture in a Dutch hospital setting, through action research. (PhD Thesis), University of Ulster, Ridderkerk, the Netherlands.


