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Exploring the relation between teachers' perceptions of workplace conditions and their professional learning goals

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Schools' structural workplace conditions (e.g. learning resources and professional development policies) and cultural workplace conditions (e.g. school leadership, teachers' collaborative culture) have been found to affect the way teachers learn. It is not so much the objective conditions that support or impede professional learning but the way teachers perceive those workplace conditions that influence teachers' learning. Not much is known, however, about how teachers' perceptions relate to the way they direct their own learning. Using a sense-making approach, we explored how four teachers' perceptions of cultural and structural workplace conditions were related with how they direct their own learning. The four cases were selected from a sample of 31 teachers from two secondary schools, and differed in the extent to which the teachers perceived their workplace as enabling or constraining their learning. We found that the content of teachers' learning goals is related to their perception of shared vision and professional dialogue in their schools, and driven by individual classroom-based concerns. Furthermore, teachers' perceptions of cultural workplace conditions and supportive leadership practices seem to be more important influences for teachers' self-directed learning than their perception of structural conditions.

Keywords: workplace conditions; teacher learning; learning goals; sense-making process

Introduction

Teachers' learning is assumed to be influenced by the school in which they work. School factors such as teacher collaboration, resources for learning, policies for professional development and school climate are understood as affecting how teachers learn (Smylie 1995, Day *et al.* 2007, Imants and Van Veen 2010). Literature reviews indicate that the effectiveness of teachers' professional development is highly dependent upon the context in which the teacher is operating (Borko *et al.* 2010). A teacher's workplace is an important environment because it could provide learning opportunities in daily teaching practice (Borko *et al.* 2010, Horn and Little

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2010, Ambler 2016, Kyndt *et al.* 2016), opportunities to learn together with colleagues (Little 2012) and opportunities to apply new knowledge and skills that are learned outside the school context. According to Little (2012, p. 25):

[s]chools that support teacher learning and foster a culture of collegiality and continuous improvement are better able to support and retain new teachers, pursue innovation, respond effectively to external changes and secure teacher commitment.

Scholars in the field of teacher learning build on insights from workplace learning to further analyse these contextual influences (Hodkinson and Hodkinson 2005, Hoekstra *et al.* 2009, Fox *et al.* 2010, Imants *et al.* 2013). Workplace learning studies aim to determine which workplace conditions enable or constrain professional learning (Smylie 1995, Ellström 2001, Hoekstra *et al.* 2009). Furthermore, in recent studies it is argued that it is not so much the objective conditions which support or impede employees' professional learning, but the way they interpret those organizational conditions in relation to their work and learning (Nishii and Wright 2007, Hoekstra *et al.* 2009, Tynjälä 2012, Imants *et al.* 2013). Previously, a few studies have demonstrated how mediating psychological factors on the part of the individual might impact the relation between structural and cultural dimensions of the school organization and teachers' professional learning (Kwakman 2003, Geijsel *et al.* 2009, Thoonen *et al.* 2011). Thus, it is of interest how teachers' perceptions of the workplace environment can be understood as affecting professional learning. We regard these perceptions of the workplace to be a consequence of sense-making processes in which the teacher interprets messages from the institutional environment and integrates these messages into their existing framework (Coburn 2001).

Furthermore, recent workplace studies relied on participatory approaches and socio-cultural theories (Tynjälä 2012) to emphasize how employees are participating in communities of practice or participating in professional development. However, within those approaches, the teacher as an individual making deliberate choices in the workplace environment is overlooked (Hodkinson and Hodkinson 2005). The individual and the environment should be seen as mutually influencing each other through the interaction of workplace affordances and individual's agency (Billett 2004, Imants *et al.* 2013). In this study, we focused particularly on teachers' actions as individuals making sense of and consequently responding to conditions for learning in the workplace (Hodkinson and Hodkinson 2005, Weick *et al.* 2005, Hoekstra *et al.* 2009, Imants *et al.* 2013, Poell and van der Krogt 2013). Moreover, the participatory approach to the processes of learning shifts the emphasis away from what is to be learnt, thus creating the risk that workplace learning is treated as 'an abstract idea or learning for learning's sake' (Manuti *et al.* 2015, p. 13). Our focus on teachers' self-articulated professional learning goals can accommodate the perspective of teachers acting upon their environment because these goals are elected by the teachers themselves. Within this focus, we sought to uncover characteristics of a school environment which can encourage teachers to direct their own learning.

This study aimed to explore the relationship between teachers' perceptions of their workplace environment and their learning goals, and was guided by the following research question: how do teachers' perceptions of workplace conditions relate to their professional learning goals?

Conceptual framework

Teachers' professional learning goals

In our study we view teachers as active agents that develop themselves professionally, not as passive recipients of professional development. Here, the term professional development is understood as activities that are organized for teachers by individuals other than the teacher (e.g. the school, university course, facilitators). The term professional learning reflects the more 'agentive nature' of teacher development as described by Taylor (2015). On the basis of studies highlighting the importance of addressing teachers as active agents in educational change efforts (Hoban 2002) and studies on employees' agency (Billett 2004, 2011), teachers can be viewed as agents that self-direct their learning process (Lohman and Woolf 2001, Janssen *et al.* 2012, Wells 2013). Self-directed learning as a concept is derived from adult learning theories that position the learner to have a sense of personal autonomy in their learning. This personal autonomy can be seen as learners taking control of the goals and purposes of learning and assuming ownership of learning (Garrison 1997, Merriam *et al.* 2007, Knowles *et al.* 2015). In addition, studies on self-directed learning claim that in day-to-day learning employees 'are responsible for most of the detailed decision-making about learning, including choices what to learn, how to learn, and at what pace the learning will occur' (Confessore and Kops 1998, pp. 367–368). The concept of self-directed learning is especially relevant in the Netherlands, because Dutch teachers are generally held responsible for their own professional learning and keeping teaching quality high. In this study we focus on teachers' professional learning goals as the initial phase of teachers' self-directed learning (Tough 1979), and we define a learning goal as desired change in behaviour or cognition (Fenstermacher 1994, Putnam and Borko 2000, Bakkenes *et al.* 2010). In our definition of learning, we understand cognition as 'the integrated whole of theoretical and practical insights, beliefs and orientations on the part of the individual' (Zwart *et al.* 2008, p. 983). In addition, we understand teachers' learning goals as influenced by both self-perceptions (e.g. self-efficacy, career aspirations), tasks characteristics and responsibilities, and teachers' perceptions of the context (e.g. as situated in practice with current classroom or school-wide issues) (Eraut 1995, Tynjälä 2008, Borko *et al.* 2010, Horn and Little 2010, Imants and Van Veen 2010, Shriki and Lavy 2012).

Workplace conditions of schools

There is a range of studies on relevant workplace conditions for teachers to work and learn (Rosenholtz *et al.* 1986, Eraut 1995, Smylie 1995, Bredeson 2000, Ellström 2001, Smith and Gillespie 2007, Imants and Van Veen 2010, Slegers and Leithwood 2010) which share similar findings on what constitutes important workplace conditions in terms of teacher learning. Some examples of essential school conditions are that: teachers share their work, jointly prepare lessons or collaborate in a learning community (Smylie 1995, Little 2012); teachers are participating in school-wide decision-making on school improvement (Rosenholtz *et al.* 1986, Smylie 1995); and teachers are supported in their learning by resources such as time, materials, colleagues and feedback mechanisms (Ellström 2001, Smith and Gillespie 2007). This diverse set of essential conditions for teachers to learn during their work can best be understood if we consider them part of structural and cultural

organizational conditions and features of school leadership that could stimulate or hinder teachers' work and learning (Imants and Van Veen 2010).

Structural conditions refer to the way schools, teachers' work and teachers' learning are organized structurally in terms of time, space, resources, workload, task variation, evaluation and feedback, organizational goals and professional development policies. According to Ellström (2001), employees need to have access to adequate learning resources, which includes objective factors such as time for learning and reflection, and subjective factors such as knowledge of the task and work processes. As regards time, there needs to be a subtle balance between time for teaching and time for learning and reflection, both collaboratively and individually (Ellström 2001).

The term 'cultural conditions' in the literature refers to building a shared school culture, aiming for a shared school vision, a culture of collaboration, a professional learning climate and collective decision-making (cf. Jurasaitė-Harbison and Rex 2010, Little 2012, Admiraal *et al.* 2015). It is especially the culture of collaboration among teachers and a shared understanding of the school's organizational goals that work to improve teachers' on-site learning, in which continuous learning becomes a school-wide norm embedded in the professional community (Little 2012, Forte and Flores 2014).

Leadership, which can be viewed as a cultural condition, is assumed to be relevant for teachers' professional learning through the way school leaders influence structural and other cultural conditions (Bredeson 2000, Slegers and Leithwood 2010). Supportive school leadership can be considered 'transformational' (Leithwood and Jantzi 1990) if it is characterized by the following three dimensions impacting teachers' work and learning: vision (i.e. inspiring teachers to be engaged in their work by developing, identifying and articulating a particular vision); individual consideration (i.e. concern and respect for the personal feelings and needs of teachers); and intellectual stimulation (i.e. challenging teachers to professionalize in such a way that the organization as a whole is learning).

Teachers' perceptions of workplace conditions

Studies on school organizational conditions have already shown that psychological factors mediate the impact of these conditions on teachers' engagement in professional learning; for example, through teachers' commitment and self-efficacy (Kwakman 2003, Geijsel *et al.* 2009, Thoonen *et al.* 2011). Similarly, the objective workplace conditions alone do not influence teachers' learning; it is how teachers make sense of their workplace as a learning environment, and as a consequence use the learning opportunities afforded by this environment (Coburn 2001, Hoekstra *et al.* 2009, Tynjälä 2012). In this sense-making approach teachers are seen as individuals who compare school organizational messages with their pre-existing framework and decide whether to act upon school policy or not (Coburn 2001, Weick *et al.* 2005). This process is dynamic, because both organizational conditions and work and learning processes change continuously (Bryk *et al.* 2010). In a similar vein, Billett (2004, p. 316) introduced the concept of co-participation at work, referring to the process of learning 'shaped by interactions between what is afforded by the workplace and how individuals elect to engage with what is afforded'. Merely taking into account situational factors to see workplaces as learning environments is not enough. Thus, it is at the intersection of what an organization affords an

individual, and consequently the individual perceiving this learning environment, that we can understand how and what individuals are able to learn through work.

In line with Imants *et al.* (2013), we understand sense-making in this study to be the perceptions teachers have of their workplace as enabling or restrictive to their own learning, and consequently in what way they use their perceived learning environment for how they self-direct their learning (operationalized as teachers' professional learning goals). An example of this sense-making process is how teachers integrate organizational goals within their own goals and how their perception of their workplace influences this decision-making.

Method

Research design

We explored the relationship between individual teachers' learning goals and their perceptions of their workplace environment in a small-scale interview study. From a sample of interviews with 31 teachers from two Dutch schools for secondary education, we selected a subsample of four cases (two teachers from each school) to explore this relationship in more depth. Because of our specific focus on how teachers perceive their workplace as a learning environment, we needed a research design which was sensitive to particularities in different school contexts. Therefore, we first summarized how teachers within the two different school contexts perceived the schools' workplace conditions. On the basis of this descriptive analysis we were then able to make a selection of four teachers and explain context-specific particularities within and across the four cases.

School context

Because of the specific focus on the workplace as a learning environment, it was important to select schools that were comparable on general background variables (e.g. size, population, location, level of schooling) so that the differences could be attributed to school-specific cultural, structural and leadership conditions. Prior to the interviews, the first author spent four months at each school in order to learn about contextual factors that could influence teacher learning. Each four-month period was used for 60 classroom visits, and informal conversations with staff. After this socialization period, 16 and 15 teachers from School 1 and School 2, respectively, with varying levels of experience and teaching backgrounds were selected for interviews (see Table 1). In total, 31 teachers were interviewed on their perceptions of their school's workplace conditions and their learning goals. In the next paragraph, we provide overviews of both school contexts.

School 1 has approximately 1200 students and 100 teachers, is located in an urban area and offers two levels of schooling (five-year or six-year programmes, preparing students for vocational and university education, respectively). Three teachers recently went to a conference abroad to learn about information and communication technology (ICT)¹ innovations in the classroom; for example, the use of social and new media, and digital learning environments. These teachers were asked to inform their colleagues in a meeting about the use of ICT to get students more involved during lessons. Moreover, the school was investing in an induction programme for pre-service and beginning teachers as part of a school–university partnership. Over the last two years, 10 teachers had been invited to participate in

Table 1. Teachers' backgrounds.

	School 1	School 2
Number of teachers	16	15
Number of female teachers	8	7
Subject domain		
Language	5	7
Science	5	5
Social sciences	5	2
Other	2	2
Mean teaching experience (years)	14.66	13.77
Minimum experience (years)	0.5	1.0
Maximum experience (years)	35	34

a course on coaching beginning teachers and to obtain a coaching certificate. The school offers teachers the opportunity to spend 10% of their working hours on professional development, part of which is filled automatically with required school-based professional development, and the remaining hours with professional development chosen by the teachers themselves. According to the school's managing director, there is no explicit plan for teachers' professional development, so school leaders can react to changes in the school as and when necessary. The school's personnel policy does not include formal performance interviews.

School 2 has approximately 1700 students and 120 teachers, is located in a suburban area and offers the same two levels of schooling as School 1. School leaders recently held performance interviews with their teaching staff that included a lesson visit, feedback, student questionnaires and a conversation on current performance. In addition, school leaders organized a short survey to understand the causes and consequences of their teachers' workload experiences. For the past three years, the school's plenary study days (compulsory for all teachers) have focused on ICT use in classrooms, primarily on implementing laptop education for the lower grades and on teachers' skills regarding the use of the digital whiteboards in the classroom. School 2 is part of a larger school partnership which organizes professional development for beginning teachers. This school's professional development policy is that professional development is considered part of a teacher's regular task, that there is a budget for professional development (roughly \$600/year) and that it is up to the teacher to take up new initiatives for professional learning. Although there is no explicit plan for professional development, most school-wide professional development focuses on learning about ICT in the classroom.

Instrument

Interviews were held on the basis of a semi-structured questionnaire and lasted approximately 75 minutes. At the start of each interview it was emphasized that teachers should feel free to articulate their own learning goals, without taking into account what others would like them to be learning. Because teachers may experience difficulty with articulating concrete learning goals for themselves (van Eekelen *et al.* 2006, Janssen *et al.* 2012), we designed interview questions from various perspectives intended to support teachers to talk about their own learning. The combination of questions aimed to let teachers discuss such things as their concerns

(cf. Hoekstra *et al.* 2007), recent learning experiences and activities (Lohman and Woolf 2001), feelings of mastery and their aims and long-term plans (Janssen *et al.* 2012). From these various perspectives and the follow up-questions we aimed to deduce teachers' professional learning goals (see Data analysis section).

To study teachers' perceptions of workplace conditions, questions were designed to stimulate teachers to talk about the learning resources available in the school, learning culture and the way their school management stimulates teacher learning. A sample question was: what do you see as concrete learning opportunities in this school, and what learning resources are available for teacher learning (e.g. books, instructional methods, websites, courses, professional learning communities)?

Data analysis

All interviews were transcribed verbatim. We first compared 31 teachers' perceptions of their workplace to arrive at a selection of cases. These cases were used to explore the relation between teachers' perceptions and their learning goals in more depth.

Selection of cases based on teachers' perceptions of workplace conditions

First, summaries were made of each teacher's responses regarding the questions on workplace conditions in their school. Next, all remarks on workplace conditions were listed in key sentences per teacher. A coding scheme was designed based on sensitizing concepts from the workplace conditions literature (for example, Smylie 1995, Ellström 2001, Slegers and Leithwood 2010). Sample sensitizing concepts were 'Learning resources' (structural conditions), 'Professional learning climate' (cultural conditions) and 'Stimulating initiatives' (leadership). Every key sentence received at least one code from the coding scheme. The code could be either 'Constraining', if the matching sensitizing concept was experienced as constraining teachers' learning (example statements: 'little teacher influence in ...', 'too little time for ...', 'too much emphasis on ...'), or 'Enabling', if the sensitizing concept was experienced as enabling teachers' learning (example statements: '... stimulates my learning', '... is made available', 'there is a culture/norm of ...'). On the basis of frequency counts we created a summary per school of teachers' perceptions of workplace conditions (see Table 2).

Based on the coding of teachers' perceptions of workplace conditions, we distinguished similarities and differences both within and across schools. The data from Table 2 show that schools differed mainly in their mean average key sentences about structural conditions (i.e. a higher mean score of enabling structural conditions in School 2 compared with School 1). The numbers for each teacher show great variation within each school. For example, in School 2 the teachers differed in their perceptions about the structural conditions: Nicole sees them as both constraining (5) and enabling (6), Helen perceives them as clearly enabling (8) and Caspar perceives these conditions as mainly constraining (6). In addition, these numbers show that some teachers explained extensively how the school was supportive (or not) to their professional learning (e.g. Gerard in School 1), whereas others did not make a lot of remarks (Richard in School 1).

Differences between schools also became clear from the content of the remarks teachers made. In School 1, teachers mentioned a lack of opportunities to learn from

Table 2. Number of key sentences coded as constraining or enabling workplace conditions per teacher.

	Structural		Cultural		Leadership	
	Constraining	Enabling	Constraining	Enabling	Constraining	Enabling
<i>School 1</i>						
Duncan	3	1	0	1	0	1
Ryan	3 ^a	4	2	4	1	1
Barbara	1	4	1	3	2	3
Susan	2	5	4	2	3	3
Sarah	2	6	1	2	3	3
Courtney	1	3	2	2	0	1
Gerard	4	2	5	2	6	1
Anna	1	4	3	0	0	2
Ronda	2	0	1	1	5	1
Richard	2	1	1	0	0	1
Paul	1	5	1	1	0	2
Henry	0	4	0	1	0	4
Patricia	0	4	0	2	1	1
Philip	0	5	0	1	1	2
Vicky	4	4	3	1	2	3
Bernard	4	1	1	0	2	1
<i>School 1 totals</i>						
Sum	30	53	25	23	26	30
Mean ^b	1.84	3.28	1.53	1.41	1.47	1.72
<i>School 2</i>						
Hanna	1	7	2	1	1	2
Alex	5	6	1	0	1	0
Alissa	0	6	0	1	0	2
Johan	0	4	0	2	0	1
Erik	1	6	1	3	1	2
Helen	0	8	0	3	2	4
Nicole	5	6	1	2	3	2
Vera	3	7	2	3	4	7
Ferdinand	2	7	3	1	1	1
Bart	2	4	3	0	3	1
Rick	2	6	0	4	2	3
Hester	3	3	0	2	1	1
Lois	4	7	3	5	4	2
Caspar	6	3	2	2	4	0
Karel	5	3	6	1	6	0
<i>School 2 totals</i>						
Sum	39	83	24	30	33	28
Mean ^b	2.43	5.37	1.57	1.97	2.17	1.83

Notes: All names are pseudonyms. Names in bold are the cases selected for further analyses.^aItalic number-pairs indicate that at least one of the key sentences for this teacher (in this category) was coded as both enabling and constraining. ^bMean key sentences were corrected for the double-coded key sentences; that is, if one key sentence was coded as both enabling and constraining.

each other and opportunities for feedback and evaluation. For example, four teachers were negative about the absence of performance interviews in the school (structural). Negative perceptions about collegial collaboration were mainly articulated with respect to some subject departments that were not perceived as supportive to their work and where opportunities to exchange ideas for lessons were missed (cultural). Teachers from School 1 acknowledged that the school leader is accessible

and supportive of their initiatives (leadership). Simultaneously, nine teachers were negative about top-down leadership and a lack of shared decision-making in the school (culture and leadership). For example, one teacher explained:

We are not being heard. School management decides top-down, and that goes like ‘this is how you are going to do it’, which results in resistance from teachers.

In School 2, teachers’ initiatives are stimulated and rewarded, and at the same time eight teachers mentioned experiencing a heavy workload (structural). This workload seems related to the high number of innovations (ICT) and school activities that the school has been introducing over the past couple of years. Eight teachers feel that the school is focused too narrowly on ICT, and too much time is spent on learning about ICT (structural and cultural). The school leader is perceived as being accessible and having good relationships with the teachers, although seven teachers experienced the school leadership as directive, because they do not have a say in what they want to focus on themselves (leadership). For example, one teacher said:

Within the themes which the school deems important, everything is possible. There is much pressure to learn about ICT and to implement school policies.

Teachers from both schools perceived the following structural and cultural workplace conditions and leadership practices as enabling their learning: learning opportunities provided (i.e. time, facilities, resources), collaboration among colleagues, support from management and autonomy for teachers to decide what they want to learn individually (i.e. initiatives are rewarded and requests to do a workshop or follow a course are usually approved). What were perceived as constraining were a lack of teacher participation in decision-making (top-down) and a lack of a clear vision in the school and the accompanying policies and procedures.

In addition to these differences between schools, Table 2 also shows that the school’s workplace conditions could be perceived as enabling and constraining by teachers from the same school. An example of this within-school variation can be found in teachers’ perceptions of school leadership. In both schools, teachers perceive their school leadership as accessible and as stimulating initiatives for professional learning; however, there were nine teachers from School 1 and seven teachers from School 2 who experienced a directive school leadership. To explore such within-school variation in more depth and how different perceptions of the workplace conditions relates to teachers’ self-directed learning, we selected two cases from each school.

For this selection we used a purposive sampling technique, to arrive at maximum variation between cases (Creswell 2007). We wanted to select four teachers, two teachers from each school, with one teacher from each pair perceiving the workplace as clearly enabling learning and one teacher perceiving it as clearly constraining learning. We selected four teachers from our sample of 31, namely Patricia and Bernard from School 1 and Erik and Vera from School 2. The selected cases also differed in the way their perception of the workplace related to their learning goals, so we were able to show the variation that exists in these relationships. For example, the case of Vera does not show a clearly enabling or clearly constraining perception about her school’s workplace conditions from Table 2, but an interesting relationship with her learning goals could be demonstrated from her ‘constraining’ remarks. This is why we included her. These four teachers, two men and two women, also differed regarding years of experience and the subject they taught.

Exploring the relation between perceptions of workplace conditions and learning goals

To be able to relate the four teachers' perceptions of workplace conditions to their learning goals, we first had to deduce their learning goals from their answers to the questions on teacher learning. In this study, we defined professional learning goals as desired change(s) in behaviour or cognition. A learning goal could start from a task that had been imposed on the teacher or in response to school-wide issues, but it only counts as a goal if the teachers themselves approach it as something to learn about (according to our perspective of teachers as self-directed learners). Teachers could formulate learning goals related to their classroom context and learning goals that were related to their broader school context. Sample learning goals related to classroom context were: how to adapt my teaching to students on different cognitive levels (School 1 teacher); trying to enliven the lessons with new subject content (School 1 teacher); or how to restore a disturbed relationship with one of my students (School 2 teacher). Sample learning goals related to broader school contexts were: learning in their new role as coach for beginning teachers (School 1 teacher); or learning about their role as a coordinator for curriculum innovation (School 2 teacher).

To explore the relationship between teachers' perceptions of the workplace and their learning goals, a profile of each teacher was created in which the teacher's learning goals and workplace perceptions were summarized. First, we explored within each case how teachers' perceptions of the workplace as enabling or constraining their learning were related to their learning goals and looked for examples that would demonstrate this sense-making process. Finally, we compared cases in order to distinguish thematic similarities across cases that could answer our research question (Miles and Huberman 1994).

Results

Two cases: perceptions of workplace conditions as enabling

Patricia (27 years of experience, School 1)

Patricia is a music teacher who started working at this school 15 years ago as a part-time teacher. She now works full-time, with half of her time teaching (15 lessons per week) and half of her time filled with extra-curricular responsibilities, such as coordinator of the school's international programme, coaching beginning teachers, mentor of two classes and coordinator of a compulsory in-school professional development course. One of her learning goals focuses on implementing more ICT technology in her classroom, because at the moment she does not feel comfortable using new digital technologies and software programs in her class. She just returned from a week-long masterclass on international education in Lapland and got inspired to use the digital technology that was presented there. She has a strong preference for learning by doing (e.g. hands-on), in courses, through interaction with (international) subject colleagues and by reflecting on her teaching with and without others. According to Patricia her school offers both compulsory learning opportunities and opportunities upon your own request. For example, her masterclass was facilitated by the school leader in terms of scheduling her for a week off and stimulating her to go. Patricia arranged a European grant for herself to be able to attend this international masterclass.

Patricia also experiences a clear school vision on active student learning which matches her own ideas of effective teaching:

You see, in this school active student learning was emphasized in the school's vision. They really want teachers to use teaching methods that foster active student learning in class. As a teacher working in a school where there is no such vision, you might find yourself alone in learning about this topic and then it gets really hard.

She is coordinator of the compulsory in-school professional development course for second-year teachers. The focus in this course is on how to use activating teaching strategies in class. In the course, a small group of teachers come together regularly and share their experiences and give advice on implementing new activating teaching methods in their classrooms. Patricia explains that she also learns from these suggestions for her own teaching practice. She aims for a continuous adaptation of instruction to match students' learning processes and students' worlds.

The case of Patricia shows how her perception of the school as offering learning opportunities upon teacher requests in combination with the school's vision that fits her ideas of good instruction makes her positive about the learning opportunities in this school. She acts upon these school conditions by organizing an international grant and masterclass for herself that provide her with hands-on experiences to feel comfortable in learning about digital technologies in the classroom. Her learning goals seem to result from creating her own learning opportunities by going abroad and her involvement as coordinator of the in-school professional development course. In terms of sense-making, we found that Patricia's positive experiences with structural and cultural conditions in her school strongly relate with her ambition to continuously develop herself as a teacher.

Erik (four years of experience, School 2)

Erik has taught religious studies at this school for four years, and this year started a university programme to become a licensed teacher. When he talks about his workplace environment he states that this is a great, if not the best, school for teacher professional learning, because there are so many learning opportunities, opportunities for task differentiation, a strong learning culture and an accessible school leader. He compliments the school leaders for having an eye for individual teachers and their professional learning.

Regarding his learning goals, he is determined to grow professionally but feels obstructed by his current workload. This year he has an increased workload due to task differentiation (e.g. coordinating school activities, teaching a new subject). He now needs to set his boundaries and learn to say 'no' to any more differentiation:

I want to deliver quality in my lessons (now it's more about quantity), so I want to acquire more content knowledge, which I can do by spending more time preparing classes, but I do not have time for that.

An important detail is that he does not blame the school for this high workload, but accepts that the workload is part of a teacher's job. Although he is really positive about the school as a learning environment, he cannot seize the opportunities offered because he feels he lacks time to develop himself professionally. His learning goals are therefore related to reducing this workload and his school duties, in order for him to make room for deepening his content knowledge and subject-specific pedagogies.

Erik's case shows us how a teacher's agency is played out in a high-workload environment, because he tries to change the tide by focusing his learning goals on managing his workload before moving on to what he actually wants to learn. In terms of sense-making, we found Erik's perception of the work environment as supportive (although restricting his learning opportunities because of the high workload), combined with his personal ambitions to deliver quality in his lessons, to be key for him to take responsibility and try to self-direct his learning.

Two cases: perceptions of workplace conditions as constraining

Bernard (34 years of experience, School 1)

Bernard has 34 years of teaching experience and will soon retire as a teacher. He predicts he will leave this school with a feeling of bitterness because he does not receive any appreciation and recognition for his work. In all those years he has worked hard and conscientiously to prepare his mathematics lessons and tests, and has 'delivered' students with good examination grades. He feels that he is not rewarded for these efforts. Instead, he feels that appreciation goes to teachers that organize extra-curricular activities:

In this school there is a lot of appreciation for everything, they think it's amazing if you organize a school trip to Burundi, but if I'm at home designing a school exam, that takes me longer. Then they act as if every teacher in this school performs equally well when it comes to teaching, but that is not true. [...] And I'm part of an organization in which I feel I have less and less to say, whilst I'm still good at my job, I think that's weird.

Bernard gives an example of how he became disenchanted with the school organization; an occasion when things were decided without input from the teachers. He explains that he used to be very involved in school and organized a Project Week for students for more than 15 years in a row, but during one management meeting it was decided that from then on there was no longer going to be a Project Week.

Concerning his learning goal, Bernard feels that there is no reason to change his teaching because his students' performance on the examinations is above average. If he feels he needs to learn anything, he does not need any support or training to do so. Whenever there were curriculum changes in the past, he taught himself the new material because he knew his students would also have to learn it themselves. Although he does not articulate explicit learning goals, he keeps investing in drawing up good examples and assignments for his students to practice with, because he does get appreciation from his students and simply because he gets paid to make his students do well in their examinations.

To sum up, Bernard experiences the school as a constraining workplace due to a lack of recognition for his work, and its top-down leadership and decision-making; neither does he see an urgent need to change his teaching practices. The case of Bernard shows us that teachers who experience their workplace as constraining their work and learning might focus their learning on assisting student learning (classroom context goals), and turn away from issues in the broader school context (school context goals). In terms of sense-making, Bernard's case provides a good example of how a teacher's personal history (cf. ontogeny, as described by Billett 2011) serves as a filter for how he perceives his current workplace environment.

This, together with Bernard approaching retirement and lowered investment, may have resulted in a teacher who does not see a need to change (Beynon 1985).

Vera (12 years of experience, School 2)

Vera works as a Dutch language teacher at this school and, in general, values the opportunities for learning in terms of time, facilities and differentiation in tasks. She is eager to take up new challenges within and outside the school in order to keep herself motivated as a teacher. Nonetheless, she does not feel the urge to go along with the current emphasis on digital learning (ICT) in her school. Her learning goals are aimed at developing her content knowledge, guiding special needs students and coaching beginning teachers. She does not feel comfortable with the direction in which the school is heading; that is, towards more use of digital devices and – to prepare for that – spending many plenary team sessions on improving teachers' digital competences and software use. Therefore, she experiences the school's ICT learning environment negatively because there does not appear to be sufficient time for developing digital content, and for discussing the vision behind the use of ICT in the school and the way teachers can use it effectively:

I'm frustrated during the ICT team sessions. We're going really fast in the domain of ICT, but they do not consider the negative sides of it, that is what we as school need to think about, what do we want to achieve by using ICT in our school.

Instead of moving along with current innovations in her school (i.e. ICT) and without experiencing enough challenges in teaching itself, Vera now focuses on out-of-school learning such as developing a literature course for retirees which is subject related, but not school related, and challenges her to develop interesting subject materials.

To sum up, Vera perceives the current ICT trend in school negatively, which sometimes frustrates her, but she still likes to learn a lot and wants to experience challenges in her work. The case of Vera shows how schools might offer many learning opportunities in terms of team sessions and facilities on a certain topic, but if teachers experience no shared vision or space for exploring the possibilities, they may focus their learning on other topics of interest. In terms of sense-making, Vera finds it difficult to integrate the implementation of the innovation with her own beliefs of what good education constitutes. As a result, she creates new (out-of-school) learning opportunities for herself.

Combining results

The structural conditions that were mentioned in these four cases concerned resources (in terms of permission for cancelled classes) for Patricia, enough time for Erik and learning opportunities and task differentiation for Vera. The cultural conditions and leadership characteristics that mattered for teachers' self-directed learning were a clear school vision for Patricia, opening the school dialogue about workload for Erik, not being recognized and top-down leadership for Bernard, and lacking school dialogue on the underlying arguments for the innovation at Vera's school. Both Patricia and Bernard (School 1) and Erik and Vera (School 2) work in the same school environment but perceive it quite differently, but also the two 'enabling'

cases and the ‘constraining’ cases differed in the way they made sense of the workplace conditions.

In general, we saw that Patricia and Erik, who experienced their workplace as enabling learning, differed in the way they articulated their learning goals. They were similar in that they both showed a high level of agency by either organizing their own learning opportunity abroad (Patricia) or by taking responsibility for their own workload (Erik), but different in what they would like to learn, depending on their interests, levels of experience and school-based learning opportunities. The learning goals formulated by Bernard and Vera, who perceived some characteristics of their workplace as constraining teacher learning, had in common that they focused on different goals to those the school management envisioned for their organization. Bernard focused solely on his classroom context and his students’ learning. The content of Vera’s learning goals related to other school responsibilities (coaching colleagues, coaching students) and learning goals outside the school context (organizing a literature course for adults).

Conclusion and implications

Conclusions

From the 31 interviews about teachers’ perceptions of the workplace conditions, we can conclude that learning opportunities, collaboration among colleagues, support from management and autonomy to decide what to learn were regarded as enabling teacher learning. Teacher participation in decision-making (top-down), a lack of clear vision and accompanying policies and procedures were perceived as constraining teacher learning. By exploring four teachers’ cases in more depth, we tried to gain further insight into how these perceptions about the workplace as enabling or constraining relate to teachers’ self-directed learning. We addressed the following research question: how do teachers’ perceptions of workplace conditions relate to their professional learning goals?

Based on four different cases, it seems that structural conditions played a minor role in how teachers perceived their workplace as a learning environment compared with the cultural conditions and characteristics of leadership. Teachers’ perceptions of the cultural conditions and leadership characteristics seemed more important when teachers formulate learning goals for themselves. This finding relates to earlier studies on the importance of a shared understanding of school goals, professional learning climate and transformational leadership practices for teacher learning (Leithwood and Jantzi 1990, Jurasaitė-Harison and Rex 2010, Little 2012, Forte and Flores 2014, Admiraal *et al.* 2015). The cultural conditions and leadership characteristics in this study concerned a clear school vision (Patricia), having a school-wide dialogue on issues that matter most (Erik and Vera) and being heard, feedback and recognition (Bernard). Teachers’ perception of structural conditions (i.e. resources, time, task differentiation) seemed to be of lesser importance to influence the direction of their goal-setting because there were enough learning resources available at the two secondary schools where this research took place and therefore less a topic of concern for these teachers’ self-directed learning.

The case of Bernard emphasizes the importance of individual support, recognition of performance and school management’s involvement in teachers’ teaching. Not feeling recognized in your work narrows teachers’ focus down to

doing only what teachers are paid to do, namely to teach. An important implication of this case might be that being recognized as a professional or feeling heard can have a positive effect on teachers' self-directed learning. On the other hand, we do not know whether Bernard would formulate more learning goals if his perception of the school as a learning environment was more enabling. The career phase before leaving teaching is characterized either with confidently looking back on their career and gradual withdrawal from the profession or with dissatisfaction and increasing disillusionment due to tensions in the workplace (Beynon 1985, Huberman 1993, Day *et al.* 2007). It seems that Bernard falls into the latter category and his (lack of explicit) learning goals are perhaps more a result of an interaction of his perception of the current workplace environment, his personal history with this environment and his current career phase. Late-career teacher Patricia does not seem to fall into either of these end-of-career categories. In contrast, her perception of the same school as Bernard's is one that clearly enables teacher learning by offering plenty learning opportunities and communicating a clear vision on good education. Interestingly, both Patricia and Bernard perceive the same school environment quite differently. This also seems to relate to what both teachers need from their environment for their specific learning goals; Patricia likes to learn in courses and through interaction with (subject) colleagues, which she can easily organize for herself in this context and within her responsibility as coordinator of an in-school professional development course. Bernard would probably benefit from more recognition of his teaching. Apparently, the same environment can be perceived differently as a result of different concerns and learning goals of teachers (cf. Hoekstra *et al.* 2009).

The cases of Erik and Vera illustrate how a professional dialogue in school can influence the direction of teachers' learning. Erik's school leaders try to understand the causes and consequences of teachers' workload experiences, and at the same time Erik perceives it as his responsibility as a teaching professional to be able to manage his workload. The management being understanding and having teachers discover the causes of their own workload might have made teachers more aware of their own responsibility in managing the workload. In contrast, the case of Vera shows how a lack of dialogue in the school or of school leaders' vision on (ICT) innovations can influence the way teachers make sense of the innovation ('why are we doing this in the first place?') and shifts their focus away from it. Vera decides to move away from the current innovation and search for other topics that interest her. Both Erik and Vera work in the same school environment but perceive it quite differently. As a consequence of this sense-making process, their enactment of their school environment differs in relation to their classroom concerns and learning goals. From these cases we inferred that besides their perceptions of their workplace environment, teachers' learning goals are a result of an interaction between their own concerns of the classroom and the context of the school.

A methodological consideration for the conclusions derived from our cases is related to the selection of cases. The cases were not only selected based on various perceptions of the workplace conditions, but they also differed from each other on subject taught and teachers' level of experience. Especially the latter variable, teaching experience, can be considered to influence the formulation of learning goals due to different professional life phases (see Huberman 1993). By selecting teachers with varying levels of experience, we were able to show that even if teachers had

similar levels of teaching experience (e.g. the cases of Bernard and Patricia) they could still express quite different learning goals. It could be possible that teaching experience makes a difference to how teachers perceive the affordances available in their workplace because more teaching experience might co-occur with teachers having a more profound understanding of their workplace. Future research could address the extent to which teaching experience influences teachers' perceptions of the workplace conditions in more depth.

Implications

This study took place in a Dutch professional development context. In general, schools in the Netherlands do not have a strong culture of performance evaluation of teachers, nor is there yet a mandatory national system of continuous evaluation or qualification (points) for teachers. Compared with other countries (e.g. Spain, the United Kingdom, the USA), Dutch teachers have a lot of professional autonomy to engage in professional development: participation is usually voluntary, not linked to salary or career incentives, and dependent on the school context in which the teacher works. The teachers from our study thus had a choice in what they want to learn and how they elect to engage in the learning opportunities available at their school. In this type of contexts where there is a lot of professional autonomy for teachers, it is important to study teachers' professional learning needs and explore how schools as learning environments can encourage teachers to direct their own learning. Our study can be regarded as an attempt to draw inferences about schools as learning environments for teachers' self-directed learning.

Furthermore, our findings demonstrate teachers to differ greatly in how they perceived the same work environment and what consequences this has for how they direct their own learning. Future studies on workplace conditions for teachers' learning should take this sense-making process into account when drawing inferences about how the school as a learning environment can support teacher learning. If we are to organize professional schools for teachers to learn, school organizational workplace conditions are still granted a central role (Smylie 1995, Van Veen *et al.* 2012). For school leaders it can be very complex to steer teachers' learning in a particular direction or to experience any direct influence at all on teachers' learning pathways (Leithwood and Jantzi 1990, Poell and van der Krogt 2013). Nevertheless, it remains important for school leaders to show interest in teachers' individual learning pathways and recognize their current performances and professional life phase, and to stimulate a shared vision while maintaining a professional learning climate (Huberman 1993, Hoekstra *et al.* 2009, Janssen *et al.* 2012, Little 2012, Tynjälä 2012, Admiraal *et al.* 2015, Kyndt *et al.* 2016). Because of teachers making sense of what their school environment affords and actively directing their learning (Billett 2004, Bryk *et al.* 2010), we should not expect school leaders to have a one-way influence on what teachers learn. It is at the intersection of what a school affords and the sense-making processes of teachers that professional teacher learning emerges. The task and challenge for school leaders is to create such workplace 'norms' that teachers feel it is their own responsibility to continue learning, but at the same time keep the school's collective goals in mind (Little 2012). Furthermore, school leaders should be aware of the dynamic character of teacher learning in the workplace, which implies that the ways teachers perceive their workplace environment and the ways this influences their learning can differ within and across

teachers and from time to time (Bryk *et al.* 2010). Our study showed that keeping this balance between individual and collective goals and creating an environment for teacher learning is a complex endeavour.

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Note

1. In our study, ICT refers to all technological innovations related to digital whiteboards in classrooms, digital learning environments, laptop use by students and the use of multimedia in the curriculum.

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References

- Admiraal, W., *et al.*, 2015. Affordances of teacher professional learning in secondary schools. *Studies in continuing education*, 38 (3): 281–298. doi:10.1080/0158037X.2015.1114469.
- Ambler, T.B., 2016. The day-to-day work of primary school teachers: a source of professional learning. *Professional development in education*, 42 (2), 276–289.
- Bakkenes, I., Vermunt, J.D., and Wubbels, T., 2010. Teacher learning in the context of educational innovation: learning activities and learning outcomes of experienced teachers. *Learning and instruction*, 20 (6), 533–548.
- Beynon, J., 1985. Institutional change and career histories in a comprehensive school. In: S. Ball and I. Goodson, eds. *Teachers' lives and careers*. London: Falmer Press, 158–179.
- Billett, S., 2004. Workplace participatory practices: conceptualising workplaces as learning environments. *Journal of workplace learning*, 16 (6), 312–324.
- Billett, S., 2011. Subjectivity, self and personal agency in learning through and for work. In: M. Malloch, L. Cairns, K. Evans, and B.N. O'Connor, eds. *The SAGE handbook of workplace learning*. London: Sage, 60–72.
- Borko, H., Jacobs, J., and Koellner, K., 2010. Contemporary approaches to teacher professional development. In: P. Peterson, E. Baker, and B. McGaw, eds. *International encyclopedia of education*. Oxford: Elsevier, 548–556.
- Bredeson, P.V., 2000. The school principal's role in teacher professional development. *Journal of in-service education*, 26 (2), 385–401.
- Bryk, A.S., *et al.*, 2010. *Organizing schools for improvement: lessons from Chicago*. Chicago, IL: University of Chicago Press.
- Coburn, C.E., 2001. Collective sensemaking about reading: how teachers mediate reading policy in their professional communities. *Educational evaluation and policy analysis*, 23 (2), 145–170.
- Confessore, S.J. and Kops, W.J., 1998. Self-directed learning and the learning organization: examining the connection between the individual and the learning environment. *Human resource development quarterly*, 9 (4), 365–375.
- Creswell, J.W., 2007. *Qualitative inquiry and research design: choosing among five approaches*. Thousand Oaks, CA: Sage.

- Day, C., et al., 2007. *Teachers matter: connecting work, lives and effectiveness*. London: Open University Press.
- Ellström, P., 2001. Integrating learning and work: problems and prospects. *Human resource development quarterly*, 12 (4), 421–436.
- Eraut, M., 1995. Developing professional knowledge within a client-centered orientation. In: T. Guskey and A.M. Huberman, eds. *Professional development in education: new paradigms and practices*. New York, NY: Teachers College Press, 227–252.
- Fenstermacher, G.D., 1994. The knower and the known – the nature of knowledge in research on teaching. *Review of research in education*, 20, 3–56.
- Forte, A.M. and Flores, M.A., 2014. Teacher collaboration and professional development in the workplace: a study of Portuguese teachers. *European Journal of Teacher Education*, 37 (1), 91–105.
- Fox, A., Wilson, E., and Deaney, R., 2010. Beginning teachers' workplace experiences: perceptions of and use of support. *Vocations and learning*, 4 (1), 1–24.
- Garrison, D.R., 1997. Self-directed learning: toward a comprehensive model. *Adult education quarterly*, 48 (1), 18–33.
- Geijsel, F., et al., 2009. The effect of teacher psychological and school organizational and leadership factors on teachers' professional learning in Dutch schools. *The elementary school journal*, 109 (4), 406–427.
- Hoban, G.F., 2002. *Teacher learning for educational change*. Buckingham: Open University Press.
- Hodkinson, H. and Hodkinson, P., 2005. Improving schoolteachers' workplace learning. *Research papers in education*, 20 (2), 109–131.
- Hoekstra, A., et al., 2007. Experienced teachers' informal learning from classroom teaching. *Teachers and teaching: theory and practice*, 13 (2), 191–208.
- Hoekstra, A., et al., 2009. Experienced teachers' informal workplace learning and perceptions of workplace conditions. *Journal of workplace learning*, 21 (4), 276–298.
- Horn, I.S. and Little, J.W., 2010. Attending to problems of practice: routines and resources for professional learning in teachers' workplace interactions. *American educational research journal*, 47 (1), 181–217.
- Huberman, M., 1993. *The lives of teachers*. New York, NY: Teachers College Press.
- Imants, J. and Van Veen, K., 2010. Teacher learning as workplace learning. In: P. Peterson, E. Baker and B. McGaw, eds. *International encyclopedia of education*. Oxford: Elsevier, 569–574.
- Imants, J., Wubbels, T., and Vermunt, J.D., 2013. Teachers' enactments of workplace conditions and their beliefs and attitudes toward reform. *Vocations and learning*, 6 (3), 323–346.
- Janssen, S., et al., 2012. Teachers' professional development: an analysis of the use of professional development plans in a Dutch school. *Professional development in education*, 38 (3), 453–469.
- Jurasaitė-Harbišon, E. and Rex, L.A., 2010. School cultures as contexts for informal teacher learning. *Teaching and teacher education*, 26 (2), 267–277.
- Knowles, M.S., Holton, E.F., and Swanson, R.A., 2015. *The adult learner: the definitive classic in adult education and human resource development*. Abingdon, Oxon: Routledge.
- Kwakman, K., 2003. Factors affecting teachers' participation in professional learning activities. *Teaching and teacher education*, 19 (2), 149–170.
- Kyndt, E., et al., 2016. Teachers' everyday professional development: mapping informal learning activities, antecedents, and learning outcomes. *Review of educational research*. Advance online publication. doi:10.3102/0034654315627864.
- Leithwood, K. and Jantzi, D., 1990. Transformational leadership: how principals can help reform school cultures. *School effectiveness and school improvement*, 1 (4), 249–280.
- Little, J.W., 2012. Professional community and professional development in the learning-centered school. In: M. Kooy and K. Van Veen, eds. *Teacher learning that matters: international perspectives*. London: Routledge, 22–43.
- Lohman, M. and Wolf, N., 2001. Self-initiated learning activities of experienced public school teachers: methods, sources, and relevant organizational influences. *Teachers and teaching: theory and practice*, 7 (1), 59–74.

- Manuti, A., et al., 2015. Formal and informal learning in the workplace: a research review. *International journal of training and development*, 19 (1), 1–17.
- Merriam, S.B., Caffarella, R.S., and Baumgartner, L.M., 2007. *Learning in adulthood: a comprehensive guide*. San Francisco, CA: John Wiley & Sons.
- Miles, M.B. and Huberman, A.M., 1994. *Qualitative data analysis: an expanded sourcebook*. Thousand Oaks, CA: Sage.
- Nishii, L.H. and Wright, P.M., 2007. *Variability within organizations: implications for strategic human management* [online]. CAHRS Working Paper #07-02. Available from: <http://digitalcommons.ilr.cornell.edu/cahrswp/> [Accessed April 2015].
- Poell, R.F. and Van der Krogt, F.J., 2013. The role of human resource development in organizational change: professional development strategies of employees, managers and HRD practitioners. In: S. Billet, C. Harteis, and H. Gruber, eds. *International handbook of research in professional and practice-based learning*. Dordrecht: Springer, 1043–1070.
- Putnam, R.T. and Borko, H., 2000. What do new views of knowledge and thinking have to say about research on teacher learning? *Educational researcher*, 29 (1), 4–15.
- Rosenholtz, S.J. Bassler, and Hoover-Dempsey, 1986. Organizational conditions of teacher learning. *Teaching and teacher education*, 2 (2), 91–104.
- Shriki, A. and Lavy, I., 2012. Perceptions of Israeli mathematics teachers regarding their professional development needs. *Professional development in education*, 38 (3), 411–433.
- Slegers, P.J.C. and Leithwood, K., 2010. School development for teacher learning and change. In: P. Peterson, E. Baker, and B. McGaw, eds. *International encyclopedia of education*. Oxford: Elsevier, 557–562.
- Smith, C. and Gillespie, M., 2007. Research on professional development and teacher change. *Review of adult learning and literacy*, 7, 205–244.
- Smylie, M., 1995. Teacher learning in the workplace: Implications for school reform. In: T.R.E. Guskey and M.E. Huberman, eds. *Professional development in education: new paradigms and practices*. New York, NY: Teachers College Press, 92–113.
- Taylor, P., 2015. Learning about professional growth through listening to teachers. *Professional development in education*. Advance online publication. Doi:10.1080/19415257.2015.1030035.
- Thoonen, E.E.J., et al., 2011. How to improve teaching practices: the role of teacher motivation, organizational factors, and leadership practices. *Educational administration quarterly*, 47 (3), 496–536.
- Tough, A., 1979. *The adult's learning projects: a fresh approach to theory and practice in adult learning*. Toronto: Ontario Institute for Studies in Education.
- Tynjälä, P., 2008. Perspectives into learning at the workplace. *Educational research review*, 3 (2), 130–154.
- Tynjälä, P., 2012. Toward a 3-P model of workplace learning: a literature review. *Vocations and learning*, 6 (1), 11–36.
- Van Eekelen, I.M., Vermunt, J.D., and Boshuizen, H.P.A., 2006. Exploring teachers' will to learn. *Teaching and teacher education*, 22 (4), 408–423.
- Van Veen, K., Zwart, R., and Meirink, J., 2012. What makes teacher professional development effective? A literature review. In: M. Kooy and K. Van Veen, eds. *Teacher learning that matters: international perspectives*. London: Routledge, 3–21.
- Weick, K.E., Sutcliffe, K.M., and Obstfeld, D., 2005. Organizing and the process of sense-making. *Organization science*, 16 (4), 409–421.
- Wells, M., 2013. Elements of effective and sustainable professional learning. *Professional development in education*, 40 (3), 488–504.
- Zwart, R.C., et al., 2008. Teacher learning through reciprocal peer coaching: an analysis of activity sequences. *Teaching and teacher education*, 24 (4), 982–1002.