HOW TEACHERS REFLECT ON THEIR PEDAGOGY: LEARNING FROM TEACHERS' PEDAGOGICAL VOCABULARY

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Abstract: *This paper considers the importance of teachers' beliefs and pedagogical awareness in relation to their teaching practices. The paper draws on findings from an in-depth qualitative study of ten teachers of adult learners over a period of eight months. The study examined the potential of learning in practice and explored how teachers reflect on their pedagogy. In this paper, I consider what these reflections tell us about the choices teachers make about their practice. The findings reveal that teachers' gut feelings play a significant role in shaping their thoughts and beliefs and in informing their choices and teaching practices in class. I suggest, however, that these teachers' everyday practices do not hold pedagogical learning potential on their own, as individual teachers are not all capable of taking advantage of the opportunities offered to them in their everyday teaching. The study reveals that over time – when working with teachers' beliefs during the process of writing and discussing – their pedagogical awareness strengthens and they are more capable of taking advantage of the opportunities offered to them in their everyday teaching.*

Keywords: teacher beliefs, teacher education, teacher reflection, teacher thinking, teacher vocabulary

Introduction

Although teachers develop professional skills through formal teacher training, including pre-service and in-service training programs, teachers also acquire knowledge about teaching through their teaching experiences (Darling-Hammond, 1999; Richardson, 1996). Because teachers spend most of their time in the classroom it is reasonable to assume that a great deal of their competency and skills develop there too. A wealth of research explores the knowledge, skills, and awareness required of teachers of adult learners and suggests that teacher knowledge is constantly in the process of development (Merriam, Caffarella, & Baumgartner, 2007). Therefore, in many ways, teachers can be regarded as adult learners themselves. However, little is known about how teachers draw on their experiences in the classroom to develop their teaching practices. In this paper, I explore what

Schön refers to as a "swampy lowland" (1983). The swampy lowland metaphor highlights the situation where practitioners do not necessarily "make effective use of research-based theory and technique" but, as leaders of learning, articulate and justify their choices through "trial and error, intuition, and muddling through" situations that are often "confusing 'messes'" (Schön, 1983, p. 42). An investigation of how teachers' reflection processes inform their professional growth could deepen our understanding of the internal and often invisible mechanisms that affect teachers' professional decisions and shape the experiences of those with whom they interact.

This paper draws on a qualitative study of teachers teaching adults in the adult learning context. It examines the potential of learning in practice and explores how teachers reflect pedagogically and what these reflections tell us about the choices

teachers make about their practice. In the first section, I draw on the literature to explain the concept of *learning to teach*. Next, I briefly discuss the importance of continuing professional development in teacher education and highlight literature that describes research on teacher thinking. In the remaining sections I describe the research design and participants. Next, I present the study's findings and explore teachers' pedagogical awareness through three levels of reflection. The paper concludes with a discussion of the study findings including connections to the literature.

Defining *learning to teach*

The knowledge of teaching as theory and practice, or what Leinhardt (1990) refers to as "craft knowledge" suggests that "expert teachers possess a practical knowledge of their craft…" which can be considered "contextualized knowledge" (p. 19). However, assessing craft knowledge is not an easy task because the contexts in which educators teach are complex, multilayered and variable (Leinhardt, 1990). The field of adult learning specifies that learning "rarely occurs in splendid isolation from the world in which the learner lives; …it is intimately related to that world and affected by it" (Jarvis, 1987, p. 11; as cited by Merriam et al., 2007, p. 5). Therefore, it may not be meaningful to separate *what* the teacher knows from *how* he/she performs what he/she knows. Teachers' practices and contexts in which they act are key to personal cognition and learning (Greeno, 1997; Putnam & Borko, 2000). The notion that cognition is situated and social explains that much of what individuals do and think is intertwined with the contexts in which they act. Elbaz (1983) and Clandinin and Connelly (1987) explored the construct of *practical knowledge* as the foundation for much of the research on teacher thinking. The construct explains how teachers understand or know the teaching situation in a

classroom, and is similar to Schön's (1983) notion of *knowledge-in-action* and Fenstermachers' (1994) understanding of *teacher knowledge/practical*, (knowledge through experience). This entanglement of knowing and knowledge and situation calls on the perspective of embodied knowledge, a knowledge that is more than cognitive but is a kind of knowing where actions are inseparable from persons. Accordingly, teachers' thought processes and experiences must be considered when we examine processes of learning and decision-making that make up tacit knowledge. These considerations are exemplified in teacher education and continuing professional development (CPD), the topic of the next section.

Teachers' Continuing Professional Development (CPD)

Recent literature on teachers' CPD emphasizes that when teachers investigate, experiment, discuss and reflect on their teaching, and when they collaborate with fellow teachers, they become better informed critics of their practice (e.g., Atkinson & Bolt, 2010; Hammerness et al., 2005; Woolhouse & Cochrane, 2010). Critical reflection has long been considered essential in the development of teachers' professional autonomy (Calderhead, 1989; Zeichner & Liston, 1987). This article builds on the ideas of Dewey (1910) and the work of Schön (1983), which suggest that when teachers develop professionally, they engage in research on their practice. In this process, teachers are considered reflective learners who explore their own teaching and development of opinions and attitudes (Elliott, 2004).

Dale (1998) distinguishes between three levels of competency (C) in the context of what he calls "educational rationality," or the communicative act of teaching that gives "priority to goal-setting, planning, and evaluation" (p. 256):

C1. The carrying out of teaching (teaching activities).
C2. The construction of teaching programs, curriculum, and lesson planning.
C3. The communication and construction of a theory of teaching plans, the act of teaching, and pupils' learning process.

Dale's (1998) construct of educational rationality offers an ideal foundation for the teaching profession. While investment must be made in both C1 and C2 levels, teachers also must incorporate C3 - reflection and dialogue. In other words, teaching is not only a technical act but requires a combination of these three levels of competency. Level C3 articulates the importance of collaborative peer reflections and underlines the synergy between the *why* (theory) and *how* (method) in teaching and education. Teachers' practical reasoning must not preclude attention to C3 and C3 should be an integral part of teachers' workdays. A focus on all three levels reminds educators not to let the *how* dominate so that teachers only focus on and search for teaching concepts as the solution to better teaching or only measure learning in terms of student outcome. Rather, the incorporation of the third level of meta-discussions and thinking helps educators consider the *why*, which is unpredictable and open to constant negotiation (Biesta, 2009).

Teacher Thinking – Focusing on Beliefs as Predictors of Actions

Research on teacher thinking suggests there is a strong connection between teachers' actions and beliefs – sometimes understood as knowledge (Craig, Meijer & Broeckmans, 2013; Richardson, 1996). Similarly, much of this research recognizes that beliefs are the foundation of action and a major determinant of behaviour. Although the construct *belief* is complex and is associated with the construct *knowledge* (Lund, 2011; Pajares, 1992; Richardson, 1996), knowledge commonly is understood as consisting of facts whereas beliefs are regarded as opinions. However, beliefs can be much stronger predictors of behaviour and far more influential than knowledge in determining how individuals organize and define tasks and problems (Nespor, 1987). By studying the beliefs that inform teachers' thinking, educational researchers are in a better position to understand the processes that guide teacher behaviour, judgment, decision-making, and planning (Biesta, Priestley, & Robinson, 2015; Nespor, 1987). Even when teachers accept information from others "they filter it through their own personal belief system, translating and absorbing it into their own unique pedagogies" (Kagan, 1992 p. 75). Teachers lean towards their prior "implicit theories," beliefs, and experiences when learning to teach (Clark & Yinger, 1977, p. 295). Increasingly, teachers' histories – both personal and professional – are thought to play an important role in what they learn from professional development experiences (Ball & Cohen, 1999). Research shows that teacher experiences and reflections-on-action/practice may lead to changes in and/or additions to beliefs since beliefs and actions are interactive (Calderhead, 1996; Fenstermacher, 1994; Mansour, 2009; Richardson, 1996). When teachers engage others in discussions related to classroom practice, a form of reflection, teachers are better able to evaluate and learn about their teaching. In my study, I was interested in understanding how teachers of adult learners rationalize and articulate arguments for their planning choices with learners (Brinkmann, 2007; Pendlebury, 1990).

Research Design

Following Giorgi's (1985) phenomenological process, this study explored learning from a first-person

perspective. I used thick description and triangulation to deepen the analysis of the data and support the validity of the study. For example, I used an open coding process that was data-driven (Miles & Hubermann, 1994), employed Nvivo qualitative data analysis software to maximize transparency (Lund, 2015), and distilled hundreds of open-ended themes down to 61 themes. Furthermore, to understand the teachers' process of reflection on the *why* and *how* in education, I studied both the tacit aspects of teachers' unspoken beliefs and their actual actions/performances. Building on Dale's (1998) 3rd level of competency, C3, I also examined teachers' ways of thinking before, during and after teaching.

The study included several stages (see Appendix A). First, I focused on teachers' experiences in specific situations. For example, teachers were asked to document their experiences by addressing several open-ended questions in reflective journals, to which I had access. This type of approach enabled me to consider the teachers' thoughts alongside various actions and events. Second, I built on the teachers' journal entries to develop an interview guide, which I used to conduct individual semi-structured interviews with the teachers. Third, I conducted observations in the teachers' classrooms. Fourth, I conducted a second round of semi-structured interviews with the teachers. In all stages, discussions between the researcher and the participants were designed to uncover connections between teachers' practices and beliefs including practical reasoning and arguments (through elicitation and reconstruction) behind their practice (Fenstermacher & Richardson, 1993).

I also was informed by the following five premises of a practical argument (Fenstermacher & Richardson, 1993, p. 106-107):

1. The value premise: statements describing the benefit derived from an action.

2. The stipulative premise: statements that interpret, provide meaning, or offer theoretical rationale for the activities under inquiry.

3. The empirical premise: statements that are empirically tested and can be supported or rejected through scientific methods.

4. The situational premise: Statements that clarify and describe the context for the action.

5. An action or intention to act: the conclusion of a practical argument. Teacher reasoning becomes a topic for inquiry only after the teacher has acted.

Data collection and analysis of the teachers' vocabulary and reflections also used Toulmin's model of argumentation. The model of argumentation is a method of reasoning. It involves the *fact, claim,* and *warrant* of an argument. The fact (sometimes labelled data) is the evidence used to prove something. The claim is what you are proving with the fact (data). The warrant is the principle or assumption that connects the fact (data) to the claim. These three elements of an argument are all regarded as necessary to support a good argument (Horner, 1988). I used this model when analyzing Fenstermacher and Richardson's (1993) five premises of reasonable, warranted practical arguments.

Participants

Ten teachers of adult learners (3 males and 7 females) volunteered to participate in this study. Participants' teaching experience ranged between 1-27 years (see Appendix

B). Their head teachers characterized participants as eager to investigate and question their own teaching. Interviews were conducted in Adult Education Centres (AEC) in Denmark over a period of eight months (see Appendix B). All participants were teachers at the AECs. In Denmark, all students who attend AEC's and participate in general qualification educational settings are 18 years old or older and are therefore considered to be adults. These students have attended compulsory school but may not have passed exams. AEC classrooms present a range of challenges for teachers since classrooms are heterogeneous, provide courses at the lower-secondary, upper-secondary, and post-secondary levels (Lund, 2015) and include students with a range of life experiences, educational backgrounds, personalities, and learning styles and needs. In the next section I explore findings that emerged from the teachers' journal writing and my interviews and observations of these teachers. Of significance was teachers' vocabulary (how they talked) and how it affected their ability to reflect pedagogically or to be pedagogically aware.

Teachers' Pedagogical Awareness

The data analysis revealed three levels of reflection, or the use of different pedagogical vocabulary, among teachers about their practice: Random Non-Pedagogical Justification (R), Random Pedagogical Justification (R+), and Specific Pedagogical Justification (R++). These levels offer important insights into teachers' pedagogical awareness. The following sections elaborate on each theme as described by the teachers.

Random non-pedagogical justification – gut feelings.

At this level, teachers' arguments contain random justifications for their reasoning.

With reference to Toulmin's model of argumentation, at this level, facts are justified based on experience (what Toulmin refers to as warranty). Practical arguments are based on a value premise. At this level, the teachers' pedagogical vocabulary is largely non-existent.

The interviews illustrate that teachers tended to develop effective routines through repetition. Teachers used words and phrases such as, "I usually do this," "habit," "a bag of experiences," "routine," and "my own gut feeling." Also predominant in teachers' vocabulary were embodied phrases such as, "I constantly keep my ear to the ground," "I feel and sense the room and the students." They also used emotionally charged words such as: "sweating," "crying," "anxiety," "frustration," "stress," "tension," "feeling," "awareness," and so on. Teachers' responses suggest that they relied mostly on what they labelled as their *gut feelings* and their *learning styles* and referred to their learning experiences both as children and in teacher training. The teachers learned from experience primarily while teaching through trial and error. Surprisingly, effective routines did not necessarily depend on a pedagogically justified foundation relating to the pedagogical awareness of teaching, as outlined in Fenstermacher and Richardson's (1993) five premises of a reasonable, warranted practical argument. The findings showed that the teachers' rationale was weak both in everyday practice and when discussing their practice. The findings showed that teachers' pedagogical vocabulary and reflections were sometimes only vaguely grounded in educational arguments. The findings also revealed a complexity about teachers' reflexive practices. My primary findings revealed that routine practices learned through trial and error were mainly based on gut feelings and unreflective testing in practice. For example, when teachers were asked to describe an

unsuccessful situation, one teacher recalled the following situation where experiences and trials did not generate solutions to classroom challenges,

> The best I could think of was to try to discipline 'let us try to…' or 'Peter, now you must listen' etc…. The situation ended up with my throwing one of the guys [an adult learner] out. Then there was peace; it was as quiet as a morgue. The operation was successful but the patient died.... I felt taken by surprise, had no cards to play apart from showing who decides in the classroom. (Teacher A)

Another teacher shared a similar situation in a journal entry, describing challenges with disengaged learners who prefer to use the Internet during class, which annoyed other students.

> I hate to scold the students as I experience it as a kind of impotence. And basically I feel a sense of powerlessness in relation to the actual class... I feel sort of helpless, both professionally because I do not think the students benefit from the lesson, but also educationally/ pedagogically because I do not like having to ask the students to close computers and put away cell phones and stuff. Without being able to put my finger on why, I have not found the right way to address this and I end up just letting myself be irritated. (Teacher B)

These statements demonstrated that the teachers' practice does not in itself offer a pedagogical learning potential. What is illustrated here is that a pedagogical dilemma emerged when teachers' impotence becomes evident and their practical experience seemingly failed to provide educationally sound solutions. All participants described similar dilemmas and described situations where they failed to find solutions based on trial and error.

Teachers recounted and remembered these situations as horrible and frustrating. However, a small part of the teachers' trial and error approach did lead some to engage in considerations of and reactions to broken routines, abrupt occurrences, or sudden change. Dewey (1910) understood these occurrences as "problems" or problematic situations that change an individual's way of thinking and knowing. For Dewey (1910), a problematic situation emerges when one experiences sudden change that "perplexes and challenges the mind so that it makes belief … uncertain" (p. 9). This approach is elaborated in the next sections.

Random pedagogical justification – topic and test related.

At this level, teachers' arguments used more random pedagogical justifications to support their reasoning. With reference to Toulmin's model of argumentation, facts were justified in part on pedagogical grounds, but were still mainly based on assumptions grounded in their experience. The practical argument contained one or more of the five premises for a practical argument. The teachers' pedagogical vocabulary was articulated.

At the R+ level, teachers' vocabulary included superficial reference to pedagogy. At this level, teachers might justify their teaching practice in relation to curriculum and tests. For example, in an interview, I asked Teacher A to elaborate on an entry in her journal where she said she was keen on making students wonder in her lessons. As Teacher A explained, "I've read about the wondering in the official curriculum guidelines [her fact/data] from the Ministry of Education [the warrant]." She later elaborated on how she tries to make the students wonder and think critically about topics and described how she "uses more modern social media such as *Youtube* and homepages … because the students are such terribly weak readers and they need

something to refer to in order to pass the exam." In this example, her fact/data and warrant are related to the students' low ability to learn.

Teacher A further elaborates on why she uses social media and movies to help the students to think critically. She makes this argument:

> And by showing small video sessions and stuff, you [the students] can actually get a feeling for a subject and knowledge on some themes and stuff that is much harder if you have to read it. So in that sense you can say that pictures in this context can sometimes say more than a thousand words. (Teacher A)

In this sense, the teachers' arguments for the *why* in teaching often related to the official curriculum demands (testing), but teachers rarely made connections between testing and their choice of methods. The teachers' reasoning on the *why* and *how* was illustrated in the following observation, taken from my field notes, "Teacher D is saying that the class is doing a web quest on the specific topic and some experiments in the laboratory in order to prepare the students for the summer tests." In this scenario, the teacher's argument for the *why* of teaching is unrelated to the *how* of teaching.

Specific pedagogical justification – juggling between thoughts and practice

In the final level, teachers' arguments contained more thorough pedagogical justifications. In reference to Toulmin's model of argumentation, facts are justified mainly on pedagogical warranty (assumptions). At this level, there is proficient juggling between C1-C2-C3. Moreover, the practical argument entails the main part of the premises for a practical argument. At this level, teachers have mastery of pedagogical vocabulary.

Interviews revealed that when teachers made pedagogical justifications grounded in the how and why of education, a new level of reflection was reached. This level combined each of Dale's (1998) three levels of competency (C1, C2 and C3). For example, Teacher B explained her underlying thoughts about teaching in her journal, noting her frustration with students who just wanted categorized facts and who resisted focusing on argumentation and discussion or developing a social and philosophical understanding of concepts. Her students felt they needed to be able to quote facts on periods of literature and models for text analysis. Teacher B explained that she did not believe a focus on facts was appropriate for study in the humanities. The teacher used her reflective journal to illustrate her concern. In her entry she described an experience taking her class to visit an art exhibition at the museum and explained how she had faced resistance from a student who did not understand what she could gain out of the visit. When asked to elaborate on this example during the interview the teacher said:

> If I had been a little more honest, I would have said to her: 'This/it doesn't matter at all, what matters is that we are in a process where we experience something'. But instead I said to her that 'It's true it's hard, I want to help you with some more structures on the subject'. I think that Danish as a subject contains levels of abstractions that can be very high. And there is also a limit to how much I want to reduce art just to make it clear and understandable. So I talked with the students about Bloom's taxonomy and abstraction levels, and about being independent and to move away from interpreting the text closely and refer more to one's own thoughts and even draw some independent conclusions. But whether or not the student got the point, I do not know. I think it takes

some time to adjust and learn. Sometimes it's just like a coffee machine where the coffee drips slowly through the machine. It may well be that the students have not got my point right now, but it could be that there will be a coffee production at some point because it simply works in the subconscious. (Teacher B)

Teacher B's reflections connected conclusions and facts. Her considerations showed how she is grounded in the pedagogical considerations of performing, planning and justifying her teaching.

Teachers' Practices – A Space for Learning when Supported

All participants articulated the benefit of having to share their reflections with others. Being included in a research project also encouraged teachers to reflect on their teaching. Teacher B provided a powerful statement about the role of written reflection in her professional development, likening the experience to a litmus test (and indicative of individuals' opinions of a subject).

> When I've been writing this, it was amazing how much it's about myself ... You could suddenly see some things. Yes some patterns and the moment you see them, then you start – you might be able to work a little with them ... Maybe something that has been developing gradually.... the moment you suddenly see that then things have a certain colour and then thinking, well, it's there, I have to work. So in this way there will be a move in a new direction ... [like using] Litmus paper! (Teacher B)

Similarly, when responding to the question (in an interview) "what circumstances could have changed the unsuccessful situation for the better" (see Appendix A), Teacher C explained that such instances

encouraged her to think and act differently when faced with similar incidents. She added that she benefited from participating in the study, noting that she would like to incorporate this form of reflection on her practice into her daily routine.

> ... It is nice to be able to sit down quietly and point-by-point and then just write a little because I am not accustomed to ... It was especially the last question 'what will you do?' or the coaching-style question 'what will you do differently next time?' (Teacher C)

Teacher C added that the journal writing exercise changed her perspective on her classroom and made her more aware of her actions. This awareness allowed her to make successful changes that addressed previously problematic situations. Her new vocabulary and ability to articulate her teaching experiences ultimately helped her tackle and meet students' needs more effectively.

Summing Up – Teachers' Vocabulary and Pedagogical Awareness

In sum, these teachers' everyday teaching practices do not in themselves offer a pedagogical learning potential. Rather, teachers' experiences highlight the difficulties they faced taking advantage of the pedagogical opportunities offered to them in their everyday teaching. An exploration of teachers' vocabulary revealed that teachers' gut feelings (R) took up most of the their thinking. Teachers spoke to the different levels of reflection as follows: (R) = 131 quotes, R+ = 77 quotes, R++ = 35 quotes. Thus, teachers most frequently developed and reconstructed their practical arguments at the (R) level and their teaching practice was based mainly on gut feelings rather than on pedagogical justifications. However, teachers did engage at the R+ and R++ levels, indicating that their experiences talking and writing about their

teaching reflections as participants in the project highlighted that they were capable of providing pedagogically justified and sound arguments that worked with their beliefs.

Discussion and Concluding Remarks

The findings demonstrate that teachers learned from experience and often engaged in trial and error approaches to their practice. Although this may not be surprising, it is nonetheless concerning that their routines did not seem informed by pedagogical rationales or a pedagogical awareness of teaching. The findings demonstrated that teachers who lack an educational and pedagogical vocabulary tend to rely on their gut feelings (R) and seldom grounded their teaching practice in pedagogical theory. Actions were based mainly on feelings, and these feelings were seldom related to a higher pedagogical goal, such as the level C3. However, when teachers were supported through collegial dialogue, supervision, and debate they tended to develop a deeper understanding of their beliefs and actions (R+ and R++), a finding supported in the Continuing Professional Development (CPD) literature (Atkinson & Bolt, 2010; Hammerness et al., 2005; Woolhouse & Cochrane, 2010). Building on this CPD literature, this research draws attention to the importance of teachers' prior classroom experiences and beliefs about teaching in the development of pedagogical awareness.

This study suggested that teachers may benefit from critical pedagogical reflection that exposes the hidden aspects of their everyday teaching. The study illustrates that it may be rewarding to engage teachers in a reflective dialogue about their actions and beliefs in relation to their teaching goals, highlighting the interrelationship between actions and beliefs. My data analysis suggests that in the absence of solutions to problems in their classrooms, teachers tended to overemphasize gut feelings rather than pedagogical theory when they reflected on their practice. Working with reflective journal writing (Kaplan, Rupley, Sparks, & Holcomb, 2007; Surbeck, 1994), developing practical arguments (Fenstermacher & Richardson, 1993), playing the part of a critical friend (Baskerville, Goldblatt, & Ccje, 2009) or acting as the devil's advocate in epistemic interviews (Brinkmann, 2007) with colleagues or researchers – could have potential benefits to routine practice particularly if teachers are considered as researchers of their own practice.

This study showed that when teachers explained their practical reasoning by articulating a practical argument, they became empowered with a meta-perspective on their teaching. The interaction between different competence levels is achieved when working with practical arguments. The idea that research can simply be internalized by teachers must be dismissed as the practical reasoning behind the teaching practices takes place in a complex and personally orientated situation. The dialogical approach therefore generates pedagogical questions to support reflection by encouraging teachers to develop their pedagogical vocabulary. The dialogical approach has the potential to help teachers make sense of the basis for their actions. Teachers' reflection on and work with expanding their vocabulary and pedagogical awareness is a process that may benefit them in making sense of experience and developing their non-tacit knowledge.

Although many school reforms seek to establish team building and knowledge sharing, teachers remain relatively isolated in their classroom. When working with the development of the professions, it is still teachers' personal reflections and actions that take up most of the working day. There is room for improvement in this area

if we are to steer away from a purely technical approach to teaching. The paper recommends that we should strive for active dialogical participation in a collegial learning community, an argument that is in line with international literature (Flores, 2006; Mansour, 2009). Moreover, if teachers' preconceptions are not addressed through dialogue or other means, teachers may retain problematic beliefs throughout their programs and careers. Opportunities to reflect through writing and discussion, as illustrated in this paper, can support and foster different approaches to teaching and learning.

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Appendix A

Teachers were asked to address the following questions in their reflective journal writing:

1. Please describe a successful teaching experience you've had. • Try to think of your teaching within the last couple of days or weeks and try to describe a specific successful situation from the classroom. • If you have a hard time remembering a specific present situation you may think further back in time. • Describe the situation as detailed as possible. • What happened? What did you do?
2. Please describe why this specific situation was successful in your opinion? • Try to describe what it was about the situation that made it successful in your point of view?
3. Please describe what have affected that the situation turned out well? • Try to describe what might have affected the situation in a positive way?
4. Please describe a unsuccessful teaching experience you've had • Try to think of your teaching within the last couple of days or weeks and try to describe a specific unsuccessful situation from the classroom. • If you have a hard time remembering a specific present situation you may think further back in time. • Describe the situation as detailed as possible. What happened? What did you do?
5. Please describe why this specific situation was unsuccessful in your opinion? • Try to describe what it was about the situation that made it unsuccessful in your point of view. • For instance point to the obstacles.
6. Please describe what have affected that the situation did not turn out well? • Try to describe what might have affected the situation in a negative way?
8. Please describe what circumstances could have changed the unsuccessful situation for the better? • Try to describe what you think might have contributed to the situation had not been unsuccessful/unsatisfactory. • What could, for example, have been done differently? • What could you do differently in a similar situation?
7. Please describe what happened after the unsatisfactory/unsuccessful teaching situation? • Try to describe what you where thinking or how you acted or reacted just immediately after the failed situation.

Appendix B

Data collection took place over a period of eight months during the fall of 2011 and spring of 2012.

Informant pseudonym	Sex Female or Male	Age	Years of experience of teaching	Date and year of receiving the teachers' reflections journal	Interview #1: On the basis of the teachers' written reflection journals	Length of the interview #1: Hours, minutes, seconds	Date, year / time of observation	Number of classes	Teachers' subject during observation	Interview #2 Date and year	Length of interview #2: Hours, minutes, seconds
A	M	42	11	Sept. 17. / 2011	Sept. 19. 2011 / 12:30 PM	1:03:14	Jan. 10. 2012 / 10:05 -11:45 AM	2	Social science	Jan. 10. 2012	0:40:49
B	F	40	7	Oct. 05. / 2011	Oct. 07. 2011 / 10:00 AM	1:18:54	March 22. 2012 / 02:45-03:30 PM	1	Language	March 22. 2012	0:43:27
C	F	35	3	Oct. 04. / 2011	Oct. 06. 2011 / 02:00 PM	1:05:00	Jan. 11. 2012 / 08:05-09:45 AM	2	Language	Jan. 11. 2012	0:42:00
D	F	46	13	Oct. 10. / 2011	Oct. 12. 2011 / 01:00 PM	1:15:02	March 21. 2012 / 10:05-12:45 AM	2	Geographic	March 21. 2012	1:32:59
E	M	30	1	Sept. 27. / 2011	Sept. 29. 2011 / 08:30 AM	0:56:20	Feb. 22. 2012 / 08:05-08:55 AM	1	Social science	Feb. 22.2012	0:19:47
F	F	49	22	Sept. 04. / 2011	Sept. 06. 2011 / 11:00 AM	1:20:20	March 28. 2012 / 08:05-10:55 AM	3	English	March 28. 2012	0:53:09
G	M	61	25	Oct. 23. / 2011	Oct. 25. 2011 / 10:00 AM	1:25:52	Feb. 29. 2012 / 12:05- 01:45 PM	2	Language	Feb. 29. 2012	0:36:06
H	F	48	6	Sept. 12. / 2011	Sept.12. 2011 / 09:00 AM	1:01:38	March 01. 2012 / 12:05-01:45 PM	2	Language	March 01. 2012	0:39:00
I	F	56	15	Sept. 11. / 2011	Sept. 13. 2011 / 10:00 AM	1:05:31	Feb. 24. 2012 /11:05-12:50 AM/PM	2	Language	Feb. 24. 2012	0:42:20
J	F	52	17	Sept. 17. / 2011	Sept. 19. 2011 / 02:00 PM	1:05:55	Feb. 23. 2012 / 01:00-01:45 PM	1	Social science	Feb. 23. 2012	0:29:55
Text in total*				10 written reflection journals	10 interviews Interview #1 = 12 hours of interviews		18 classes= 13 hours of observation 10 pieces of handwritten field notes from 13 hours of observation during class		7 different subjects/ disciplines	10 interviews Interview #2 = 7 hours of interviews	

*50 pages of transcription per informant= transcriptions in total= 500 pages of text excluding the handwritten field notes contained in Nvivo during the analysis.