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Reflective Thinking in Educational Settings: an approach to theory and research on reflection

Introduction

Many research findings conclude that reflection is the key activity for teachers' professional development in school (Postholm 2008a), but few studies have researched what teachers reflect on and how they reflect. Research studies have also found that teacher collaboration, including reflection, has contributed to the teachers' job satisfaction in a positive way (Postholm and Wæge 2016) and that it creates a school culture that embraces and supports newly qualified teachers so they do not need mentors. The teacher team that they work in functions as a supportive force for them (Aspfors 2012). Thus, it is very important to create a supportive school culture when it comes to teachers' resilience in school. In Norway, 33% of teachers have left the teaching profession within five years after they have finished their teacher training (Tiplic, Brandmo, and Elstad 2015). This challenge is present in all Western countries. The most pronounced reasons for teachers leaving their profession are, according to Tiplic et al. (2015), that they do not develop good enough relations to their pupils, that they do not handle the classroom processes adequately and that they do not develop confidence with other teachers in their schools. With this knowledge as my point of departure, the purpose of the study is to **develop an understanding of what situations teachers experience as challenging in their teaching, what type of help they turn to when trying to handle such situations and, furthermore, to understand how teachers reflect together when they have time to collaborate.** The research question framing this article is thus twofold: *What type of help do teachers turn to when handling challenging situations and how do teachers reflect together to improve their teaching?*

In the following I will present theory and research on reflection before I present the methodology for the studies that this article is based on. The findings will then be presented,

followed by an analysis and discussion of them. I will also introduce relevant research in the analysis and discussion section to illuminate and support the findings. The article will then close with some concluding reflections.

Theory and related Research

The word reflection, from the Latin *re-flexio*, means to ‘turn’ (re) ‘back’ (flecto). We think of something that is behind us in both time and space. The research behind Schön’s (1987) concept of ‘reflection in and on action’ indicates that practitioners reflect both during and after actions to improve practice, but not necessarily using theory as a reflection tool.

Dewey (1916) says that an educative experience means changes made in the people who are experiencing it. This means that change brought about by an action is reflected back to the acting persons who can then learn something. Dewey maintains that we are able to have ideas about an object, which is to foresee the probable consequences of the action of the object upon us and vice versa. Bearing this in mind, Dewey adds that language is the most significant means that can create a joint reference for our actions. According to him, language will also be an important tool for teachers in their joint activity to develop practice. As in Dewey’s idea-based social constructivism (Prawat 1996), language is also the tool of tools in socio-cultural theory, and we say that learning takes place in a social and cultural context (Vygotsky 1978, 2000).

Three forms of talk are developed within the frame of socio-cultural theory: “disputational talk”, “cumulative talk” and “exploratory talk” (Mercer 2004). Disputational talk is characterized by disagreement and individual decisions. It is a form of brainstorming in which an idea does not build on previously presented ideas. Cumulative talk is a form of dialogue in which the interlocutors positively and uncritically build on what others have said, and also confirm what others have said. During this form of dialogue, the interlocutors are

trying to create a friendly atmosphere (Mercer 2004), and in this way they find themselves in “the land of nice” (City, Elmore, Fiarma, and Tietel 2010). This means that they exclusively support each other. In exploratory talk, the interlocutors are engaged critically, but also constructively with each other’s ideas. In this way, exploratory talk can lead to a competition between ideas rather than between the interlocutors (Mercer 2004). Cumulative talk can be juxtaposed with summative relations (Bateson 1972). People in summative relations support each other and comment positively on each other. Explorative talk corresponds to Bateson’s (1972) concept of complementary relations, which means that people challenge each other with critical, constructive comments, usually by asking questions.

One Norwegian study (Junge 2012) has shown that four teachers in a lower secondary school often use narratives to share experiences from their classrooms. These narratives contribute to the teachers’ learning, but the study also shows that the learning potential is not fully exploited. The problem is that not only are the teachers in the land of nice (City et al. 2010), but the narratives are often personal stories and therefore difficult to comment on critically. The study also shows that **these** teachers rarely include theoretical considerations in their reflections.

According to Avalos (2011), teacher professional development is defined as teachers’ learning, how they learn to learn and how they use this learning in their teaching practice. Camburn’s (2010) study shows that the opportunity to reflect together with colleagues leads to more reflection, and that such reflection may be a powerful contribution to teachers’ learning. Several studies show that providing teachers with opportunities to interact in a community of professionals is a key element in a professional learning context (Fishman and Davis 2006; Grossman, Wineburg, Woolwort 2001; Meirink, Meijer, and Verloop 2009). According to Kim and Silver (2016), reflective thinking can and should be part of teachers’ professional development.

Several research findings point out that the continuing professional development of teachers is most successful when it is linked to the immediate school practice, to teachers' prior knowledge, to reflection on their own practice and to them having the opportunity to discuss their experiences in a trusted, confident and constructive atmosphere (Camburn 2010; Kennedy 2011; Margalef and Roblin 2008; Postholm and Wæge 2016; Zwart, Wubbels, Bergen, and Bolhuis 2009). Research also shows that reflection based on observation of concrete practice is the best starting point for further development of practice (Clausen, Aquino and Wideman 2009; Ono and Ferreira 2010; Postholm 2008a; Timperley, Wilson, Barrar and Fung 2007), and that observations need to have a focus (Loughran 2006; Postholm 2016). According to Elmore (2000), it is also necessary to have an organizational focus on observation and reflection to manage to change practice, and that the school leaders are the ones who must facilitate for collective learning.

Studies also show that collaborative processes allow teachers to summon and utilize tacit knowledge embedded in practice, that in-service education facilitates teachers in bridging the theory-practice gap and that it helps to connect learning theories to the practical knowledge of teaching (Dudley 2013; Kuusisaari 2012). Darling-Hammond and Richardson (2009) have found that the reading of literature is a useful tool in teachers' professional development. Several other studies also emphasize not only the importance of literature but also of external resource persons supporting teachers' collective learning in school (Baumfield, Hall, Higgins, and Wall 2009; Postholm 2010, 2011; Timperley, Wilson, Barrar, and Fung 2007).

Methodology

Sample and Data Collection

To answer the research question, I build on two studies that I have carried out previously. One was conducted as a qualitative interview study (Kvale and Brinkman 2009), where the data material was collected in spring 2015 and published the year after (Postholm 2016a). Prior to individual interviews with three teachers, Peter, Jane and Kari, I asked them to write log book entries on the following points for a period of fourteen days:

- Describe the challenging situations.
- How did you experience these situations?
- What did you think?
- How did you proceed – what helped you?
- How did you perceive the continuation of the process?

The intention of the log book entries was to help make the teachers aware of various situations in practice and how they responded to them, and to prepare them for the interviews. In this study I interviewed three teachers who were teaching at the same school, working at the year 8 level and members of the same teacher team. The participating teachers had from five to nine years of experience and could therefore be perceived as experienced teachers (Richter, Kunter, Klusmann, Lüdtke, and Baumert 2011). The teachers were told that the situations they were meant to focus on were ones that they perceived as challenging in their practice.

During the interviews, the teachers were asked to talk about the situations they had written about in their log book. They were also asked questions about what knowledge and beliefs they used when they responded to the situations, where this knowledge came from, how they experienced the teacher team's role when handling such situations in practice and how they eventually had changed the way they responded to such situations in their teaching career. These were the questions that framed the interviews from the outset, but my follow-up questions on what the teachers said, and also the teachers' descriptions and utterances, broke

the frames of the questions in the interview guide. Thus, these were semi-structured interviews (Fontana and Frey 1998).

The teachers were first interviewed individually. After the first analysis of the three individual interviews I conducted a focus-group interview with all of them. This interview functioned as a member-check (Lincoln and Guba 1985) for the analysis that had already been conducted, and as a continuing collective reflection on challenging situations in practice, therefore also creating data.

The interview study provides information about situations that are perceived as challenging, and about how teachers handle these situations and what is raised in their reflections. **The purpose of this interview study was to detect challenging situations in teaching and to explore how the teachers reflected on them when describing these situations. The data material collected during this interview study helped me to answer the first part of the research question raised in this article, now focusing on the type of help teachers may turn to when handling challenging situations in their teaching.**

The formative intervention study (Engeström and Sannino 2010), lasted from 2006 to 2008. The twelve teachers at a lower secondary school observed each other and afterwards jointly reflected on their observations. The teachers in this study were also experienced and all of them had taught at the school for more than five years. The researcher's role in formative intervention studies is to provoke and sustain an expansive transformation process led and owned by the practitioners (Engeström and Sannino 2010). The teachers wanted to improve their teaching and make it more varied and, furthermore, wanted to teach the pupils learning strategies to enhance their learning. The teacher who was teaching a class wrote a note about the lesson to be observed, and also wrote in this observation note what he or she wanted feedback on. **Thus, the teacher who was responsible for the lesson decided the focus of the observations, and the focus was within the scope of the development question that was**

decided by the teachers. The development question was: “How can various working methods with the focus on learning strategies contribute to each pupil’s subject and social development?”

The other articles from this study are focused on the start-up phase during the formative intervention (Postholm 2008b) and on how joint reflections can contribute to the development of practice (Postholm 2008a). The focus for my research that this article is based on is to understand how teachers use language in dialogues to develop their practice, and therefore I examine the data material with a different focus. I, the researcher, also took part during the observations and reflections. Therefore, through my participation I could indirectly give the teachers advice on how to reflect together when intervening in the dialogue. This study thus provides data representing dialogues between teachers while they were reflecting on practice that they have also observed together.

Data Analyses

I had already transcribed the audio-recorded interviews and reflection dialogues in both studies, and I now used the data material from these studies to answer my twofold research question. I analysed the material in both studies by using the constant comparative analysis method (Strauss and Corbin 1990, 1998) to find patterns and condense them to make a reader-friendly report (Garfinkel 1967; Sacks 1992). I coded the data material from the interview study by putting labels on the situations the teachers described, and this led to two main categories: “Seeing the pupils” and “Help in teaching”. These categories embraced the labels or codes and were written down in the left- margin of the transcriptions. According to Strauss and Corbin (1990, 1998), when we ask when, how, in what connection and under what conditions, we can develop sub-categories. In my analyses these questions helped me to understand the context or conditions for the teachers’ reflections on their teaching. The

teachers' log book entries structured the questions of when, how and in what connection the teachers observed their own teaching and reflected on it, and were thus already known factors. Asking under what conditions in connection with the category "Help in teaching", revealed a conditional factor, such as "Lack of time", and subsequently formed a sub-category for this main category.

In the formative intervention study, I analysed the transcriptions of the reflection dialogues to gain an understanding of the form of the dialogues in the reflection activity connected to concrete practice. According to Strauss and Corbin (1990), the researcher can use predefined categories when analysing if the intention is to fill these categories with new content (p. 50). I read the transcriptions and used Mercer's theory (2004) on levels of talk, the concepts disputational talk, cumulative talk and exploratory talk, and Batesons's (1972) concepts of summative and complementary relations as categories I could use to structure the material. I put labels in the right margin in the transcriptions, such as "supporting each other" and "praising each other", and during the process I collected the labels into categories that I wrote down in the left margin of the transcriptions, in this example "cumulative talk in dialogues" or "summative relations in dialogues". I developed two categories and named them "Cumulative talk in dialogues" and "Exploratory talk in dialogues". When asking when, how, in what connection and under what conditions these dialogues were taking place when analysing my observations notes, transcriptions of the interviews with the teachers and my own log book entries, I could also focus on the context that made the premises and opened for these dialogues. This context is described first as a frame for the categories representing the dialogues.

During the selective coding process, focusing on what this is all about and what all this leads to, I developed the core category (Strauss and Corbin 1990, 1998) for the two sub-studies, which was "teachers' continuous professional development", meaning that teachers'

reflections both individually and collectively can contribute to their learning in practice. The developed categories structure the presentations of the findings and the following analyses and discussion.

Ethical Guidelines

To ensure the quality of the work I have, as mentioned above, used member-checking (Lincoln and Guba 1985) of the first analysis of each interview in the interview study. The teachers stated that they felt the descriptions of the situations, their responses and their knowledge, beliefs and attitudes were accurately reported. Participation in both studies was based on informed consent, and the article complies with the ethical principle of making participants anonymous (NESH 2006). Consequently, all the teachers have been given fictitious names.

Findings

This study, based on two separate studies, focuses on the help teachers turn to when handling challenging situations in their teaching and how teachers reflect together when there is time to collaborate to improve their teaching. In the following I will present the findings structured, as mentioned above, according to the developed categories.

Seeing the Pupils

When Peter, Jane and Kari talk about challenges in their teaching, it is about seeing each of the pupils so that they can feel safe, have well-being at school and also feel that they can master the school tasks. Peter states that it is a challenge to have pupils with special needs just for some lessons. "I have to use time to develop trust," he says. He furthermore thinks it is challenging to adapt the teaching to pupils with special needs. He thinks they are weak in various subjects, but he has also found when talking to them that they are struggling with

much more than just the subjects. He claims that he finds out very soon which pupils he really needs to see. Peter states that he feels safe in his role as a teacher, and that he usually has good relations with his pupils and thus a relationship of trust, and that he also tries to see all the pupils.

Jane is satisfied because the pupils feel comfortable in her class, but at the same time the pupils also feel that there is some amount of disturbing noise. Jane thinks that it is challenging to know how to punish the pupils because she usually gives collective punishment, even though just a few are disturbing the class. She states that they are working in the class to create a good learning environment and that she tries to establish a structure that clearly tells them the organization of the lesson and how to behave. She writes the goal of the lesson on the blackboard when starting up, and she sums up together with the pupils at the end. During the last minute the pupils are to clear their desks and find new books so they are ready for the next lesson.

Kari also thinks that it is important to see and respond to each pupil, including the high-achieving pupils. She finds it challenging to help the pupils that need assistance during a lesson when there are 30 pupils in her class. She especially mentions pupils from other countries that she finds need extra help due to language problems. She is deeply committed to helping the multilingual pupils, according to her.

Help in Teaching

Peter says that he has benefitted from his work in sports; he has learned what being a teacher is all about from serving in various roles as a coach. “That’s where I’ve learned most of my pedagogical insights; it’s practical pedagogy at its best,” he says. When it comes to ongoing help in daily practice, he mentions the teachers in his team, and how he uses this team for assistance, for instance when planning how to adapt the teaching to the pupils’ needs.

Jane thinks that her further education and her experience as a teacher help her during her practice in school, but she also thinks that it is good to reflect together with colleagues. She also finds it useful to talk to the other teachers in the team about the pupils because she then gets to know the pupils better. Jane states that she also likes to ask Peter about challenges in how to teach, for instance about some topic areas in mathematics. She thinks it is about seeing the pupils, but you also have to teach them well and adapt the teaching to them. Writing the log for fourteen days has helped her to reflect on her teaching, she adds.

Kari believes that she learns from her own mistakes in her teaching, and she also finds it very useful to ask colleagues in her team for help. She states that they discuss individual pupils in the teacher team, and that they therefore get to know their pupils better. She feels she could not have done her job as she does without her education, but it is not so obvious in her daily practice. She thinks that further education has helped her to link theory and practice because when she was studying she was also working as a teacher.

Lack of Time

According to Peter they talk about pupils with special needs in the teacher team and how they should take care of them in their teaching, but unfortunately there is little time to discuss this issue, Peter adds. Jane states that she often asks Peter to take time to reflect together with her because so little time is allotted for collaboration in the timetable. They meet for just an hour a week in the team, and they do not have teams focusing just on subjects, according to Jane. Kari also mentions lack of time as a challenge and that they also phone each other during their off-duty hours to discuss problems at school.

But how do teachers talk together when they have time to collaborate, how can this talk help them to develop and improve their teaching practice? Below I will present dialogues

from the formative intervention study to explore how teachers reflect together. First, I will present a contextual frame for these dialogues.

The Context of the Dialogues

The teachers wanted to observe each other's teaching and to reflect together afterwards in subject teams. They decided which lessons should be observed and reflected on at the start of the semester and scheduled this into the timetable. Before an observation lesson, the teacher responsible for the teaching sent a planning document to the other two teachers of the same subject and to me, the researcher. On this planning document the teachers would write the aim of the lesson, what type of activities were planned, what questions they wanted to ask about their own teaching and what they wanted feedback on. During the first semester they had agreed on the development question for their work within the frame of the national curriculum plan, as requested by the school leader, and this development question also guided the sub-questions they asked for individual lessons that were observed during the second semester this school year (Postholm, 2008a). Thus, they had a common focus for the development of their teaching practice and also time to observe and reflect together. The common focus and the allotted time for observation and reflection made up both the premises and possibilities for the joint activity. During the second semester of the school year the teachers just supported each other during reflection, as in the first dialogue below. Already during this first semester with observation and reflection (the second semester of the school year), I tried to show how the teachers could help each other by asking questions, as in the second dialogue below. The third dialogue that took place towards the end of the second semester shows that the participating teachers had changed their talk, not just supporting what the other teachers said. They continued to observe and reflect together the next school year, with me, the researcher, also taking part.

Cumulative Talk in Dialogues

The dialogue below is based on observation of an English lesson where Tom starts to give Hege, who has taught the lesson, a positive comment.

- Tom: I think you have a very relaxed style in the classroom. You're positive and give the pupils a lot of energy. I think you move around in the classroom in a good way, and I noticed that you vary the way you walk, you underline what you say, you dramatize a lot when you teach, I think that's very good. I also think that the pupils appreciated that you get them to laugh, and happy pupils learn.
- Hege: Thanks, that was nice to hear.
- Tom: Yes, and I also observe that you stick to English in your practice in the English lesson, even when a pupil asks you a question in Norwegian. I think you're very good at explaining what you're doing in class, and you also ask if everybody is ready, I really like that. Then I think it's good that you don't just ask the pupils to raise their hands, but that you try to involve all the pupils. I also noticed that you changed the plan for how to end the lesson, I think that's a very good quality, that you don't just slavishly stick to the plan.
- Ella: Yes, I agree with Tom, this is what I observed as well. You're a very clear leader of the class, there is no doubt about who is leading the class.

In this dialogue the observing teachers just give positive and supportive comments to the teacher who taught the lesson. They are using cumulative talk (Mercer 2004) or communicate within symmetrical relations (Bateson 1972).

Exploratory Talk in Dialogues

In the dialogue below the researcher asks the teachers a question after observing an English lesson.

- Researcher: Some pupils aren't that active. What if you talked with the pupils at the beginning of a lesson about that as well, that they should try to be active?
- Heidi: Yes, that's true.
- Researcher: And then you could have talked about it afterwards, how it went?
- Per: Mmm, that's true. Make them aware about it.
- Researcher: Yes, it's about their metacognition again.
- Heidi: Yes, that's a good suggestion.

In this dialogue the researcher asks a question and this means they are practising complementary relations (Bateson 1972). The researcher uses exploratory talk (Mercer 2004)

and also adds a theoretical concept to the dialogue and comments that it is good to make the pupils aware of their own learning. In the dialogue below a teacher talks about her practice and another teacher gives advice by telling what she does in her English lessons.

- Tone: I have made agreements with some pupils in the class, They don't usually say anything in class. But now they're raising their hands, and that's gratifying.
- Researcher: So you think they're more active?
- Tone: Yes, we're pretty strict about requiring that they're active.
- Helen: Do you know what helps me? I take a sheet of paper out to write down who is active, and that has resulted in lots of hands being raised. The pupils think that it's okay. I write down who is active during the lesson and also afterwards. And the list really helped me when I was to give them a grade for oral English.
- Tone: I'm glad we have this time to collaborate and reflect now, that it's scheduled in the timetable. Now we have this time set aside like we have wished for, for a long time. I think we have lots of good ideas and together I think there's a lot to build on.
- Helen: And I think that we're gradually feeling secure about observing each other and reflecting together. It's good to know that what you actually do and think can also be meaningful for your colleagues.

In this dialogue the teachers reflect on how they manage to get the pupils to be more active during the lessons. Tone tells the others that she had made agreements with some pupils and Helen goes on to give Tone advice by telling her what she does to encourage pupils to be active. Here the teachers argue for the practice and are thus in complementary relations (Bateson 1972) using exploratory talk (Mercer 2004). Tone also states that she is happy that they have time to collaborate and reflect, and Helen continues this train of thought by mentioning that they are gradually feeling secure when observing and reflecting together.

Teachers' Continuous Professional Development

Jane and Kari feel that further education has been of value to their development because it has helped them to relate theory to practical situations. All three teachers, Peter, Jane and Kari, believe that they learn from their practice, and that collaboration with their colleagues and their joint reflections help them to plan teaching and to solve practical problems related to their teaching. The teachers say that they do not use theory explicitly, not during the planning

nor during the reflection on practice. The teachers agree that the pupils need teachers who are clearly present in their practice and see them. The teachers also think that their collaboration is the key for doing a good job together with the pupils, and for both their personal and academic development.

The leader, also a teacher, for all the teachers at the lower secondary school, summed up what the teachers have experienced and learned during the first year in the formative intervention study. She says that they have learned that they have a high degree of competence that has become more visible after observing and reflecting together. During their observation and reflection activities they had reflected on their own practice and all the teachers were now more familiar with learning strategies, according to the leader. Learning strategies have become part of their lesson planning, and they think that the observation and reflection activities have become important for their planning work because they received tips and ideas when observing and reflecting together. She also states that they have gained more insight into their colleagues and the pupils, and that they trust each other even more. Moreover, the teachers will be the ones learning from this, they also think that their learning will improve the pupils' learning outcomes.

Analysis and Discussion

The research question for this article was twofold, asking *what type of help do teachers turn to when handling challenging situations and how do teachers reflect together to improve their teaching*. I will analyse and discuss the answers I have found to these questions from the two studies following the structure of the developed categories.

Seeing the Pupils and Help in Teaching

The teachers point out that having good relations with their pupils is important. Marzano (2009) maintains that good relations are the cornerstone of classroom management. Teachers

and pupils are continuously in a dynamic relationship with each other and this demands that teachers as carriers of responsibility are present in their practice so they can adapt to situations at all times. The teachers show that their actions are directed by their intention of seeing the pupils, and that they are striving to develop good relations to them (Tiplic et al. 2015). Peter aims to adapt his teaching to all his pupils and to develop a relationship of trust with them all. He wants to see and help each individual and the class as a group at the same time (Hoekstra and Korthagen 2011). Jane wants her pupils to feel comfortable, and Kari wants to make a good learning situation for all pupils, including the high-achieving and multilingual pupils. What the teachers are bringing into focus here is reflection on practice (Schön 1987), and they need to have a repertoire to choose from when addressing the various and many situations. The teachers have both varied and similar preferences when talking about what help they receive in their teaching.

Peter mentions that he has learnt from being a sports coach. He also functions as an expert teacher for both Jane and Kari as both want to reflect together with him when they encounter challenges in their practice. They act in a community of professionals, but these teachers are not given time to reflect together, which is described as a necessity (Fishman and Davis 2006; Grossman et al. 2001; Meirink et al. 2009). They find time themselves during their busy workdays, but this is not an easy task, according to the teachers, but they meet because they believe that they learn from each other. The teacher team functions as a supportive force for these experienced teachers (Aspfors 2012), and they also have confidence in each other (Tiplic et al. 2015). Related research supports the idea that interaction in communities of professionals is a key element in a professional learning context (Fishman and Davis 2006; Grossman et al. 2001; Meirink et al. 2009), and that reflective thinking can and should be part of teachers' professional development (Kim and Silver 2016).

Cumulative and Exploratory Talk in Dialogues

In the first dialogue, the teachers are just supporting the teacher who has been observed. They are cumulative (Mercer 2004) and find themselves in summative relations (Bateson 1972); they are in the so-called land of nice (Junge 2012; City et al. 2010). In the second dialogue, the researcher challenges the observed teacher in exploratory talk (Mercer 2004). The researcher gives advice and also introduces a theoretical concept, metacognition, to the dialogue. According to Bjørndal (2011), supporters who have developed a relation of trust with the person they are advising are in a position to give advice. If there is a relation of trust between the parties it is also easier to turn down proffered advice if teachers find it unsuitable for their situations. In a relation of trust, teachers will have tolerance for this. In the third dialogue, the teacher gives advice to her colleague, but no theoretical grounds are included in the dialogue. Darling-Hammond and Richardson (2009) maintain that theory is a useful tool in teachers' professional development, but theory is not used in this dialogue.

It is important that teachers can discuss their experiences in a trusted, confident and constructive atmosphere (Camburn 2010; Kennedy 2011; Margalef and Roblin 2008; Postholm and Wæge 2016; Zwart et al. 2009). Research shows that group processes lead to improved collaboration between teachers and that they learn to trust each other even more from these group processes (Given, et al. 2010). This is also what the teachers in the lower secondary school taking part in the formative intervention study experience. **In the third dialogue, the teacher says that they gradually feel secure when they observe and reflect together. The teachers' leader also claims that they support each other and trust each other even more than before the project started.**

Teachers' Continuous Professional Development

Several research findings show that reflection based on observation of concrete practice is the best starting point for further development of practice (Clausen, Aquino and Wideman 2009;

Ono and Ferreira 2010; Postholm 2008a; Timperley, Wilson, Barrar and Fung 2007). In other words, the teacher either can observe his or her own teaching or teachers can observe each other and reflect together afterwards. In this way both social and inner dialogues that promote learning can be started (Vygotsky 1978). This learning can promote change in practice that is then reflected back to the acting persons and thus creates iterative educative experiences (Dewey 1916).

Elmore's (2000) research also shows that time must be allotted for observation and reflection, and that it has to be given room in the timetable. According to Newmann, Rutter, Marshall and Smith (1989), teachers' knowledge about each other's teaching, a focus on improvement of practice and satisfying pupil behaviour are the most important factors for the teachers' perception of their own effectiveness. However, if teachers are going to be more aware of their practice, they need to have a focus that directs their gaze into their own practice and their colleagues' practice (Postholm 2016b). Korthagen and Wubbels (2001) have found that feedback in reflection dialogues can be too general and needs to be more focused. They have also found that teachers need to feel they own the focus of the reflection, meaning that they must decide what they are to receive feedback on. According to Elmore (2000), a continuous focus on concrete teaching is also decisive for change and improvement of practice in school. The interview study shows that the log book entries helped one of the teachers to be aware of her own practice. She then had a focus for her observations in practice. This indicates that teachers need to have a focus or an **overarching development question, as the teachers in the formative intervention study had**, that directs their gaze, in other words a **development question** that makes them researchers in their own practice (Postholm 2016b). Unless teachers recognize an issue as a problem, they are unlikely to change, according to Loughran (2006).

All the same, according to Elmore (2000), it is not likely that observation and reflection connected to concrete practice will result in a changed practice if there is no organizational focus on it. This means that practice in school should have an overarching **development question guiding collective development**, and that questions for classroom teaching should be sub-questions that are given direction by the overarching **development question, as in the formative intervention study**. Research also shows that reflection is more effective when the improvement priorities of teachers are identified and taken into account and teachers are encouraged to develop action plans which address their professional needs (Antoniou and Kyriakides 2013). Thus, what the teachers reflect on is important. **The teachers in the formative intervention study also formulated the development question. They were engaged in their practice, but they did not have any time to either observe and reflect or to have a joint focus to act on. With an organizational focus, all teachers and leaders at a school need to collaborate and agree on an overarching goal that guides the development processes.**

Change and improvement are, according to Elmore (2000) and Vygotsky (1978), a result of social learning. Elmore (2000) maintains that the school leaders' task is to arrange for learning in a collective of teachers. This means that the school leader must appreciate and understand the importance of social learning and must be the one who establishes how this time is to be used. The leader also has to understand how practice can be changed and improved, and function as support and a driving force both before and during the development processes. Change and development work thus requires a democratic attitude, structure and a positive learning culture for the teachers. If change and development are to occur, structure and culture need to interact (Forte and Flores 2014; Postholm and Wæge 2016). If a collective of teachers is to develop a culture for learning and joint development, they also have to feel confident in being observed by the others and in reflecting together so that they get to know both their own and their colleagues' practice. Then they will be ready to develop further with

support from their colleagues. The teachers taking part in the formative intervention study wanted to continue with the observation and reflection processes, showing that they were ready to develop further with support from each other.

In addition to a good personal climate, a joint focus for development and a timetable that makes it possible to observe and reflect together, what is also necessary is an understanding that change is about teachers in a team developing knowledge on how reflection dialogues can be accomplished, and what can be used as a tool in these dialogues. Avalos (2011) defines teachers' professional development as the teachers' learning, their meta-learning, and how they use their knowledge in practical situations. According to Morton (2012), teachers need opportunities to reflect on their talk in the classroom and also a meta-language to describe their use of talk. In the study focusing on challenging situations, the teachers state that they learn from joint reflections with colleagues, and from colleagues giving them advice. But they do not use theory explicitly when they talk about their teaching. In the formative intervention study the dialogues also show that the teachers do not use theory to support their utterances, and they do not use a meta-language to describe their use of talk. Rather their action theories (Argyris & Schön, 1978) permeate their reflections, and they utilize their tacit knowledge (Dudley 2013; Kuusisaari 2012). With an external researcher taking part, they managed to develop both their trust in each other and their talk. A recent study shows that external resource persons, school leaders and teachers in school find that there is a potential for learning in talk that is not fully exploited, and that all parties have more to learn about language use in collaboration (Postholm 2018).

Concluding Reflections

The study shows that teachers are engaged in developing good relations with their pupils, and that they also need a good and secure learning environment if they are to develop together. If

schools as organizations focus on development and a common overarching **development question that** directs the teachers' practice, school leaders can also invite external resource persons to fill the gaps in the teaching collective (Baumfield, Hall, Higgins, and Wall 2009; Postholm 2010, 2011; Timperley, Wilson, Barrar, and Fung 2007). There can be different kinds of gaps. The school leaders and teachers may feel the need to develop their understanding of a special theme. Then it may be appropriate that the external resource person delivers a lecture to the teachers at the school. If we follow the research finding that teachers are most likely to change their practice when reflections are based on concrete practice, the researcher should also take part during observations and reflections. But, according to Murphy and Ermeling (2016), there must be a threshold level for reflection before teachers can benefit from a collaborative process. Thus, it is also important that external resource persons supporting teachers during their collaboration also focus on the language used and help teachers to develop their talk to enhance their learning and to improve their teaching practice.

This means that knowledge and competence are required at every level in the education system. A school's teachers and leaders need to develop their practice towards a common goal, and must be aware of what knowledge and competence they need to develop towards this goal. **The school leader needs knowledge and competence about how to lead a collective of learning teachers, and teachers need knowledge and competence when it comes to how they should support and encourage each other to enhance development of teaching that will support pupils' learning outcomes. The current study based on the interview study and the formative intervention study shows that teachers want to have time to reflect together. It also shows that having this time to both observe and reflect together and having a focus for the development processes are not enough. It is also important to focus attention on how language is used during joint reflection. As mentioned above, all participants can feel that**

they need to develop their knowledge on how to use language in dialogues during collaboration aimed at improving teaching. From this it follows that there are heavy demands on both teacher education and the education of teachers and school leaders.

References:

- Argyris, C., and D. A. Schön. 1978. *Organizational learning: A theory of action perspective*. Reading, Massachusetts: Addison-Wesley.
- Antoniou, P., and I. Kyriakides. 2013. A Dynamic Integrated Approach to teacher professional development: Impact and sustainability of the effects on improving teacher behavior and student outcomes. *Teaching and Teacher Education*, 29, 1-12.
- Aspfors, J. 2012. Mentoring as dialogue, collaboration and/or assessment? In P. Tynjälä Paivi, M-J. Stenström, and M. Saarnivaara (eds.), *Transitions and Transformations in leaning and education* (p. 271-290). Berlin: Springer Science+Business.
- Avalos, B. 2011. Teacher professional development in Teaching and Teacher Education over ten years. *Teaching and Teacher Education*, 27(1), 10-20.
- Bateson, G. 1972. *Steps to an Ecology of Mind*. San Francisco: Chandler.
- Baumfield, V. M., E. Hall, S. Higgins, and K. Wall. 2009. Catalytic tools: Understanding the interaction of enquiry and feedback in teachers' learning. *European Journal of Teacher Education* 32(4), 423-435.
- Bjørndal, C. R. P. 2011. Rådgiver eller veileder [Councillor or supervisor] In K. Skagen (ed.) *Kunnskap og handling i Pedagogisk veiledning*, 2nd edition [Knowledge and action in pedagogical supervision]. (p. 189-212). Bergen: Fagbokforlaget [Publishing Firm].
- Camburn, E. M. 2010. Embedded teacher learning opportunities as a site for reflective practice: An exploratory study. *American Journal of Education*, 16(4), 463-489.
- City, E. A., R. F. Elmore, R. F. Fiarman, and L. Tietel, L. 2010. *Instructional Rounds in Education: A Network Approach to Improving Teaching and Learning*. Cambridge, Mass: Harvard Education Press.
- Clausen, K. W., A-M. Aquino, and R. Wideman. 2009. Bridging the real and ideal: A comparison between learning community characteristics and a school-based case study. *Teaching and Teacher Education*, 25(3), 444-452.
- Creswell. J. 2013. *Qualitative inquiry and research design: choosing among five approaches* (3.ed.). Sage: Los Angeles.
- Darling-Hammond, L., and N. Richardson. 2009. Teacher learning: what matters? *Educational leadership*, 66(5), 46-53.
- Dewey, J. 1916. *Democracy and Education. An Introduction to the Philosophy of Education*. New York: Macmillan Company.
- Dudley, P. 2013. Teacher learning in lesson study: What interaction-level discourse analysis revealed about how teachers utilised imagination, tacit knowledge of teaching and fresh evidence of pupils' learning, to develop practice knowledge and so enhance their pupils' learning. *Teacher and Teacher Education*, 34, 107-121.
- Elmore, R. F. 2000. Building a new structure for school leadership. *American Educator*, 23(4), 1-9.
- Engeström, Y., and A. Sannino. 2010. Studies of expansive learning: Foundations, findings and future challenges. *Educational Research Review*, 5(1), 1-24.
- Evertson, C. M., and C. S. Weinstein. 2006. Classroom management as a field of inquiry. In C.M. Evertson and C.S. Weinstein (eds.), *Handbook of classroom management:*

- Research, practice, and competence issues* (p. 3–5). Mahwah: Lawrence Erlbaum Associated.
- Fishman, B. J., and E. A. Davis. 2006. Teachers learning research and the learning sciences. In R.K. Sawyer (ed.), *The Cambridge handbook of the learning sciences* (p. 535-559). Cambridge: Cambridge University Press.
- Fontana, A., and J. H. Frey. 1998. Interviewing: The Art of Science. In N. K. Denzin and Y. S. Lincoln (ed.), *Collecting and Interpreting Qualitative Materials* (p. 47-78). Thousand Oaks: Sage Publications, Inc.
- Forte, A. M., and M. A. Flores. 2014. Teacher Collaboration and Professional Development in the Workplace: A Study of Portuguese Teachers. *European Journal of Teacher Education* 37(1), 91–105.
- Garfinkel, H. 1967. *Studies in Ethnomethodology*. Englewood Cliffs, NJ: Prentice Hall.
- Given, H., L. Kuh, D. LeeKeenan, B. Mardell, S. Redditt, and S. Twombly. 2010. Changing school culture: Using documentation to support collaborative inquiry. *Theory into practice*, 49(1), 36-46.
- Grossman, P., S. Wineburg, and S. Woolwort. 2001. Toward a theory of teacher community. *Teachers College Record*, 103(6), 942-1012.
- Hoekstra, A., and F. Korthagen. 2011. Teacher learning in a context of educational change: informal learning versus systematically supported learning. *Journal of Teacher Education*, 62(1), 76-92.
- Junge, J. 2012. Læreres bruk av narrative i kollegasamtaler [The teachers' use of narratives in conversations with colleagues]. *Nordic Studies in Education*, 2, 126-138.
- Kennedy, A. 2011. Collaborative continuing professional development (CPD) for teachers in Scotland: aspirations, opportunities and barriers. *European Journal of Teacher Education*, 34(1), 25-41.
- Kim, Y., and R. E. Silver. 2016. Provoking Reflective Thinking in Post Observation Conversations. *Journal of Teacher Education*, 67(3), 203-219.
- Korthagen, F., and T. Wubbels. 2001. Evaluating research on the realistic approach and on the promotion of reflection. In F. Korthagen (ed.), *Linking practice and theory: The pedagogy of realistic teacher education* (p. 88-107). Mahwah, NJ: Lawrence Erlbaum Associates, Inc.
- Kuusisaari, H. 2012. Teachers' collaborative learning – development of teaching in group discussions. *Teachers and Teaching: Theory and Practice*, 18(1), 50-62.
- Kvale, S., and S. Brinkmann. 2009. Det kvalitative forskningsintervju. [The qualitative research interview]. Oslo: Gyldendal akademisk.
- Lincoln, Y. S., and Guba, E. G. (1985). *Naturalistic Inquiry*. Beverly Hills, CA: Sage Publications, Inc.
- Loughran, J. 2006. A response to “Reflecting on the self”. *Reflective practice*, 7(1), 45-53.
- Marzano, R.J. 2009. *Classroom management that works – research based strategies for every teacher*. New Jersey: Pearson Education Inc.
- Margalef, G.L., and P. Roblin. 2008. Innovation, research and professional development in higher education: learning from our expertise. *Teaching and Teacher Education*, 24(1), 104-116.
- Meirink, J. A., P. C. Meijer, and N. Verloop. 2009. How do teachers learn in the workplace? An examination of teacher learning activities. *European Journal of Teacher Education*, 32(3), 209-224.
- Mercer, N. 2004. Sociocultural discourse analysis: analysing classroom talk as a social mode of thinking. *Journal of Applied Linguistics*, 1(2), 137-168.
- Morton, T. 2012. Classroom talk, conceptual change and teacher reflection in bilingual science teaching. *Teaching and Teacher Education*, 28, 101-110.

- Murphy, D.L., and B. A. Ermeling. 2016. Feedback on reflection: comparing rating-scale and forced-choice formats for measuring and facilitating teacher team reflective practice. *Reflective practice*, 17(3), 317-333. doi.org/10.1080/14623943.2016.1164681.
- NESH. 2006. *Forskningsetiske retningslinjer for samfunnsvitenskap, jus og humaniora* [Research ethical guidelines for social science, law and the humanities]. Oslo: Norwegian National Committees for Research Ethics. Downloaded 6 June 2011 from <http://www.etikkom.no/no/Vart-arbeid/Hvem-er-vi/Komite-for-samfunnsvitenskap-og-humaniora/>
- Newmann, F. M., R. A. Rutter, S. Marshall, and M. S. Smith. 1989. Organizational Factors that Affect School's Sense of Efficacy, Community, and Expectations. In *Sociology of Education*, 62(4), 221–238.
- Ono, Y., and J. Ferreira. 2010. A case study of continuing teacher professional development through lesson study in South Africa. *South Africa Journal of education*, 30(1), 59-74.
- Postholm, M. B. 2008a. Teachers Developing Practice: Reflection as Key Activity. *Teaching and Teacher Education*, 24(7), 1717-1728.
- Postholm, M. B. 2008b. The Start-Up Phase in a Research and Development Work Project: A Foundation for Development". *Teaching and Teacher Education*, 24(3), 575-584.
- Postholm, M. B. 2010. Læring i reflekterende lærerteam: prosess og forutsetninger. [Learning in reflecting teaching teams: process and premises]. In R. A. Andreassen, E. J. Irgens, and E. M. Skaalvik. (eds.). *Kompetent skoleledelse [Competent school leadership]* (p. 195-209). Trondheim: Tapir Akademisk Forlag. [Publishing Firm].
- Postholm, M. B. 2011. A Completed Research and Development Work Project in School: The Teachers' Learning and Possibilities, Premises and Challenges for Further Development. *Teaching and Teacher Education*, 27(3), 560-568.
- Postholm, M. B. 2016a. Experienced Teachers reflecting on challenging Situations in School. *Creative education*, 7(9), 1314-1327.
- Postholm, M. B. 2016b. Forskende skoler [Researching schools]. In M. Ulvik, H. Riese, and D. Ronæss. *Å forske på egen praksis. Aksjonsforskning og andre tilnærminger til profesjonell utvikling i utdanningsfeltet [Researching one's own practice. Action research and other approaches to professional development in the education field]* (194-210). Bergen: Fagbokforlaget
- Postholm, M. B. 2018. Case A. In M.B. Postholm, A. Normann, T. Dahl, E. Dehlin, G. Engvik, and E. J. Irgens (eds.) *Ungdomstrinn i utvikling. En mulighetenes gavepakke til skole- og utdanningssektoren [Developing lower secondary school. Quite possibly a gift to the school and educational sector]*. Downloaded 2 January, 2018 from <https://www.udir.no/tall-og-forskning/finn-forskning/rapporter/ungdomstrinn-i-utvikling---en-mulighetens-gavepakke-til-skole--og-utdanningssektoren/>
- Postholm, M. B., and K. Wæge. 2016. Teachers' learning in school-based development. *Educational Research*, 58(1), 24-38.
- Prawat, R. S. 1996. Constructivisms, modern and postmodern. *Educational Psychologist*, 31(3/4), 191-206.
- Richter, D., M. Kunter, U. Klausmann, O. Lüdtke, and J. Baumert. 2011. Professional development across the teaching career: Teachers' uptake of formal and informal learning opportunities. *Teaching and Teacher Education*, 27(1), 116-126.
- Sacks, H. 1992. *Lectures on Conversation*. Oxford: Blackwell.
- Schön, D. 1987. *Educating the reflective practitioner*. San Francisco: Jossey-Bass.
- Strauss, A., and J. Corbin. 1998. *Basics of Qualitative Research: Techniques and Procedures for Developing Grounded Theory*. Thousand Oaks, CA: Sage Publications, Inc.

- Timperley, H., A. Wilson, H. Barrar, and I. Fung. 2007. *Teacher professional learning and development: Best evidence synthesis iteration*. Wellington, New Zealand: Ministry of Education.
- Tiplic, D., C. Brandmo, and E. Elstad. 2015. Antecedents of Norwegian beginning teachers' turnover intentions. *Cambridge Journal of Education*, 45(4), 451–474
doi.org/10.1080/0305764X.2014.987642.
- Vygotsky, L. S. 1978. *Mind in Society. The Development of Higher Psychological Processes*. Cambridge: Harvard University Press.
- Vygotsky, L. S. 2000. *Thought and Language*. Cambridge, MA: MIT Press.
- Zwart, R.C., T. Wubbels, T. Bergen, and S. Bolhuis. 2009. Which characteristics of a reciprocal peer coaching context affect teacher learning as perceived by teachers and their students? *Journal of Teacher Education*, 60(3), 243-257.