

Making implicit practice explicit:

How do upper secondary teachers describe their reading comprehension strategies instruction?

Lisbeth M Brevik

Department of Education and School Research, Faculty of Educational Sciences
University of Oslo, P.O. Box 1099 Blindern, 0317 Oslo, Norway
E-mail: l.m.brevik@ils.uio.no

Abstract

This study examined the activation of teachers' tacit knowledge of reading comprehension strategy instruction as part of a teacher professional development course. Although studies have examined professional development courses that inform teachers about research-based knowledge, there has not been much research on courses activating teachers' tacit knowledge, as is the case with the present study. This qualitative study analysed 21 upper secondary teachers' instructional design; which strategies they promoted, how these differed across subjects, how their instruction was made explicit through professional development, and how the course contributed to the activation of tacit knowledge. This study demonstrated teacher learning over time, where implicit practices were made explicit through written narratives and increased metacognitive awareness.

Keywords: *Instruction; Literacy; Metacognition; Reading Comprehension Strategies; Teacher Knowledge; Teacher Professional Development*

1. Introduction

Lower reading scores than desired on the PISA literacy test for 15-year-olds have drawn attention to the reading proficiency of secondary school students and instituted a number of policy initiatives. These initiatives have prompted the search for methods to improve reading instruction at this level. Solutions have focused on training secondary school teachers to change their instructional practices and include reading comprehension strategies instruction (Hargreaves, 2003; Moje, 2008; Norwegian Directorate for Education and Training, 2012). As pointed out by Duke, Pearson, Strachan, and Billman (2011), "Teachers matter, especially for complex cognitive tasks like reading for understanding" (p. 51).

However, even as research has begun to document that teachers matter (e.g. Grossman et al., 2010; Hattie, 2009; Mortimore, Sammons, Stoll, & Ecob, 1988) and that strategy training is effective for student reading comprehension (e.g. Bernhardt, 2011; Duke et al., 2011), uncertainty remains about which strategies contribute to such an improvement and *how* teachers conceptualize the process of developing better readers (e.g. Aasen et al., 2012; Block & Duffy, 2008; Hellekjær & Hopfenbeck, 2012). Pressley (2008) recently stated the need to conduct research on the professional development of comprehension instruction teachers. He argued that, despite the urgings of the National Reading Panel (2000) and professional development initiatives, there was "no evidence of much comprehension strategies instruction occurring extensively now" (p. 406). Then he reminded us of the importance of such instruction, bearing in mind that "very effective readers actually use a small repertoire of strategies" (p. 407). Other

scholars have echoed this description (e.g. Grossman et al., 2010; Hattie, 2009; Hellekjær & Hopfenbeck, 2012; McNamara & Magliano, 2009; Parris & Block, 2008), and called for more research about teachers' metacognitive learning related to the teaching of strategic reading, along with the knowledge necessary to engage in such practices (Baker, 2008; Block & Duffy, 2008; Duke et al., 2011).

This article addresses these issues by examining how 21 teachers described their reading comprehension strategies instruction in Norwegian upper secondary schools. Norway represents an interesting case in this context. First, Norwegian students performed significantly below the OECD average on the PISA literacy test in 2006, with a decline from 2000, while this negative development was reversed from 2006 to 2012 (OECD, 2013; Roe, 2013). Second, PISA 2009 scores indicated a correlation between Norwegian students' reading literacy and their ability to recognize effective reading comprehension strategies (Hopfenbeck & Roe, 2010). Third, the national curriculum (Norwegian Ministry of Education and Research [KD], 2006, 2013) stated that teachers have methodological freedom to choose which strategies to teach and how to address strategic reading in their classrooms. This article therefore suggests that a productive means of promoting strategies instruction involves giving teachers a voice in defining practices that support comprehension.

The present study combined qualitative data from written teacher narratives and contextualized interviews. Together, these data explored how and for what purposes teachers included reading comprehension strategies by asking, "What role do reading comprehension strategies play in upper secondary teachers' instructional design?" The study further investigated *which* reading comprehension strategies the teachers promoted, how these practices *differed* across subjects, and how the teachers' strategy instruction was made *explicit* through professional development.

1.1 Strategic reading instruction development

The following review presents empirical findings of strategic reading instruction, and teacher development initiatives to foster such instruction.

1.1.1 An apparent paradox

Through guided strategy instruction, teachers have demonstrated how students can overcome problems they encounter when reading to understand (e.g., Block & Duffy, 2008; Duke et al., 2011; Fisher & Frey, 2008). This outcome proposes an apparent paradox, as research suggests that reading comprehension strategy instruction is not carried out in the majority of reading classrooms (Duke et al., 2011; Hellekjær & Hopfenbeck, 2012; McNamara, 2011; Moje, 2008; Pressley, 2008). On the one hand, student reading skills have improved markedly among secondary students in Norway (Hellekjær & Hopfenbeck, 2012; Olsen, Hopfenbeck, Lillejord, & Roe, 2012). On the other, research acknowledges a lack of information about what goes on when students are asked to read for understanding in Norwegian secondary school (Aasen et al., 2012).

1.1.2 An overwhelming number of strategies

Studies have shown that a large number of reading comprehension strategies have been successful when teaching students to read strategically. This abundance of strategies can lead to a few problems, as there are simply too many to agree on a fixed set (Roe, 2008). Teachers might feel the need to collect strategies to fill their already full lessons (Fisher & Frey, 2008), at the risk of becoming "strategy junkies" (p. 262).

Researchers have attempted to codify the useful strategies. Weinstein and Meyer (1986), for example, captured the main strategies of memorization, organization, elaboration, and monitoring. Memorization indicates surface-level processing, while the other three contribute to deeper-level processing (Bråten & Samuelstuen, 2004; Bråten & Strømsø, 2011; Weinstein,

Ridley, Dahl, & Weber, 1988). In their study of naturally-occurring strategies instruction, Anmarkrud and Bråten (2012) found that elaboration strategies were most frequent, though they identified substantial differences occurring across four lower secondary classrooms. Further, Pressley and Afflerbach (1995) found more than 100 strategies in their study of verbal protocols of reading. Block and Duffy (2008) listed 45 strategies proposed from 1978 through 2000, where main strategies such as monitoring, organizing and elaborating appear together with specific strategies such as asking questions, summarizing, and relating what one reads to prior knowledge. Similarly, Roe (2008) described 15 reading strategies in work she reviewed. She argued that, while some were main strategies (e.g. monitoring), others were specific strategies (e.g. “visualize” can be a form of monitoring). This illustrates how strategies can be complementary and interrelational.

1.1.3 Teaching a small repertoire rather than a multitude of strategies

While research conducted through 2000 focused on strategies being taught one at a time (Block & Duffy, 2008), recent research suggests that a more sensible approach would be teaching a small repertoire of strategies in combination (Dole, Nokes, & Dritis, 2009; Duke et al., 2011; McNamara & Magliano, 2009; Pressley, 2008) and increasing the use of metacognitively-oriented instruction (Baker, 2008; Parris & Block, 2008).

In line with the notion of strategies repertoires, Block and Duffy (2008) proposed nine strategies “that have been researched and validated to be highly successful since 2000” (p. 22), namely predict; monitor; question; image; look-backs, rereads, and fix-it strategies; infer; find main ideas, summarize, and draw conclusions; evaluate; and synthesize. Duke et al. (2011) proposed a similar repertoire of eight strategies: setting purposes for reading; previewing and predicting; activating prior knowledge; monitoring, clarifying, and fixing; visualizing and creating visual representations; drawing inferences; self-questioning and thinking aloud; and summarizing and retelling. However, they pointed out that, “the list of strategies that research indicated are worth teaching – that is, if taught, they improve reading comprehension – varies from one research review to another” (p. 64). In other words, even though teaching a small repertoire of strategies might be effective to help students read strategically – the question of *which* strategies to include in the repertoire remains the teacher’s challenging choice.

1.1.4 Teaching content and strategies in tandem

However, teaching comprehension strategies simply to have students learn strategies, is seldom effective (Block & Duffy, 2008). Rather, student engagement in disciplinary work (Meyer, 2013), as well as instructing content and strategies in tandem is held to be paramount (Bråten & Strømsø, 2011; Dillon, O’Brien, Sato, & Kelly, 2011; Fisher & Frey, 2008; Lee & Spratley, 2010; Moje, 2008, 2010; Parris & Block, 2008; Shanahan & Shanahan, 2008). Studies suggest making strategies “transparent” and “transportable” to help students see why a particular strategy is useful, as well as how to apply the strategies in a subject-specific manner to other content areas (Parris & Block, 2008).

1.1.5 Professional development of comprehension instruction teachers

At the core of teacher professional development (TPD) is the notion that it should benefit student growth (Avalos, 2011). Increased and improved TPD is central to promoting effective comprehension strategies instruction (Block & Duffy, 2008; Borko, Jacobs & Koellner, 2010; Duke et al., 2011; Parris & Block, 2008; Pressley, 2008). However, on a world-wide basis, teachers feel their professional development needs have not been met (OECD, 2009), and schools’ training days have not always been used productively or their impact evaluated (Aasen et al., 2012; Bubb & Earley, 2010). In addition, training days have been described as “one size fits no one,” while more tailored TPD could have been designed (Bubb & Earley, 2010). TPD is a complex process, which takes time.

Pressley (2008) expressed a concern that while teaching comprehension strategies is challenging, it is necessary to develop teachers who can provide such instruction. He suspected that at least a school year was required for successful TPD: “Such professional development will require developing modelling, explanation, and scaffolding skills in teachers, as well as developing a commitment to teach and encourage comprehension strategies use every day” (p. 407). He acknowledged that teachers have learned a great deal in less ideal solutions as well, for example through self-study, which led him to believe that through TPD, “many more teachers can learn to teach comprehension strategies than are teaching them at present” (p. 407).

Studies have suggested that TPD is more likely to be successful if teachers feel it caters to their needs. Verloop, Driel and Meijer (2001), as well as Klette and Smeby (2012) argued that professional learning deeply concerns the characteristics of the knowledge sources made available to the teachers. Teachers tend to focus on *content knowledge* rather than *pedagogical content knowledge* (Grossman, Hammerness, & McDonald, 2009; Hoyle, 2001; Klette & Smeby, 2012; Moje, 2010; Porter, Garet, Desimone, & Birman, 2003), suggesting that TPD can contribute to teachers’ understanding of procedural knowledge (Afflerbach, Pearson, & Paris, 2008) and increase their subject matter knowledge for teaching (Borko, 2004).

Research has further shown that teachers rarely integrate *theory-based knowledge* in their practices; instead, they tend to rely on so-called “craft-knowledge”, of tacit, context-dependent solutions in the classroom (Aasen et al., 2012; Hoyle, 2001; Klette & Carlsten, 2012; Klette & Smeby, 2012; Moje, 2010). Studies among Finnish, Norwegian, American, and Canadian teachers have confirmed this, showing that teachers who linked *theory-based knowledge* to experience-based classroom challenges found solutions, while those who neither articulated nor linked experiences to theory failed to solve their problems (Afdal & Nerland, 2012; Horn & Little, 2010; Wood, 2007). However, expanding teachers’ knowledge alone is not enough. The activation of *prior knowledge* is useful to make tacit knowledge explicit, as argued by Porter et al. (2003), who reported that effective TPD was strongly dependent upon teachers’ content knowledge in the subject area of their teaching, when related to prior TPD experiences. This is in line with Grossman et al. (2010), who found that teachers’ awareness of what they did during lessons differed from researchers’ observations of the same lessons, suggesting the need for increased awareness of what teachers know and do.

A variety of TPD research has comprised small studies focusing on the impact of TDP on teachers’ knowledge and practices (Avalos, 2011; Borko, 2004). Ross and Bruce (2007) found that introducing new tools in a TPD programme reinforced the value of the participating teachers’ existing practices. Similarly, Does (2012) found that applying new assessment tools helped teachers activate their prior theory-based knowledge about assessment of student comprehension. Finally, in her review of TPD studies, Avalos (2011) found evidence of improved teacher knowledge and literacy instruction skills, and studies showing that teacher reflection and narratives were instruments of change in teacher practice.

In summary, existing research has indicated that different forms of knowledge make up teachers’ knowledge base and that the core of TPD lies in the combination of knowledge sources. Building on teachers’ prior knowledge seems to be a key to transform their reading comprehension strategy practices.

1.2 Theoretical framework

Within the framework of teacher professionalism, in which the present study was grounded, *professionalism* comprises the knowledge, skills, and procedures teachers use (Hoyle, 1975), which is how this article has applied the term. In 1975, Hoyle formulated two models of teacher professionalism – *restricted* and *extended* (p. 318) – which Evans (2008) referred to as two extremes

of a continuum. The “restricted” professional depends upon intuition, being guided by a narrow, classroom-based perspective and valuing experience-based knowledge. In contrast, the “extended” professional has a wider vision of education; valuing theories underpinning pedagogy, and adopting a rationally-based approach to teaching.

Shulman (1986, 1987) argued that the professionalization of teaching relied on the content, character, and sources of teacher knowledge. He emphasized that teachers have difficulty articulating what they know, and he suggested that becoming aware of the concepts they actually use in their instruction may help teachers describe more explicitly what they do and know implicitly. Based on the work of Ball, Thames, and Phelps (2008), Borko et al. (2010), and Shulman (1986, 1987), three categories of teacher knowledge become relevant; *content knowledge* (CK: subject matter being taught and learned), *pedagogical content knowledge* (PCK: the ability to transform content knowledge into teaching), and *specialized content knowledge* (SCK: disciplinary knowledge being taught and learned in the subjects).

This highlights the importance of encouraging teachers to move towards extended professionalism by combining knowledge sources – for example when transforming reading comprehension strategies into teachable and learnable pieces. While *reading* is often understood as a bottom-up process of simply decoding or reading aloud, the OECD (2009) description complies with the interactive models of reading in their definition of *reading literacy* as “understanding, using, reflecting on and engaging with written texts, in order to achieve one’s goals, to develop one’s knowledge and potential, and to participate in society” (p. 23). This definition assumes a relation between reading skills and strategies, understood as the difference between “just reading” and being consciously aware of how readers read. Based on this conception, *reading comprehension strategy use* can be defined as consciously applied procedural knowledge as tools students learn to use critically for deep and long-lasting text comprehension (McNamara, 2011). This is how this article has applied the terms.

Interactive models of reading, based on Kintch’s (1998, 2004) Construction-Integration model, is a complex concept describing how the reader actively engages with the text, by involving perception and thought as a parallel interaction between the reader’s prior knowledge, vocabulary, grammatical knowledge, and experience with text and reading comprehension strategies (Alderson, 2000; Bernhardt, 2011; Grabe, 2009). This concept is considered a combination of lower and higher level processing of information, namely the bottom-up processes of decoding and the top-down process of more holistic text interpretation. However, students are not exclusively bottom-up or top-down readers; rather, they are always bottom-up *and* top-down readers depending on the situation (Alderson, 2000; Bernhardt, 2011; Grabe, 2009). As such, *interactive models of reading* involve cognitive and metacognitive knowledge about mental and behavioural activities that the reader can engage in before, during, or after reading. Scholars have argued that a good reader is a strategic reader and that the least effective readers are those who fail to exhibit a range of strategic reading behaviours (Alderson, 2000; Bernhardt, 2011; Grabe, 2009; Koda, 2005).

Effective strategies instruction presupposes that students are trained by their teachers to notice, and then do something in order to improve their ability to comprehend. This is emphasized in Figure 1, illustrated as two modes of reading – *the Nike mode of reading* and *the Sherlock Holmes mode of reading* – representing two extremes of a continuum. In the “Nike mode of reading,” students read as suggested by the Nike “Just do it!” slogan; in other words, they read without analysing the task or considering how to read. In contrast, the “Sherlock Holmes mode of reading” has a broader vision of analysing the task, choosing and applying potentially effective strategies, searching for clues, drawing inferences based on textual evidence, monitoring comprehension progress, and modifying the choice of strategies when necessary. When students monitor their

reading process and recognize a gap between what they understand and what they are expected to understand, they ideally apply strategies as tools to bridge the gap in comprehension. This is illustrated by the arrows in Figure 1, pointing to the continuum where the student identifies the need for strategic reading.

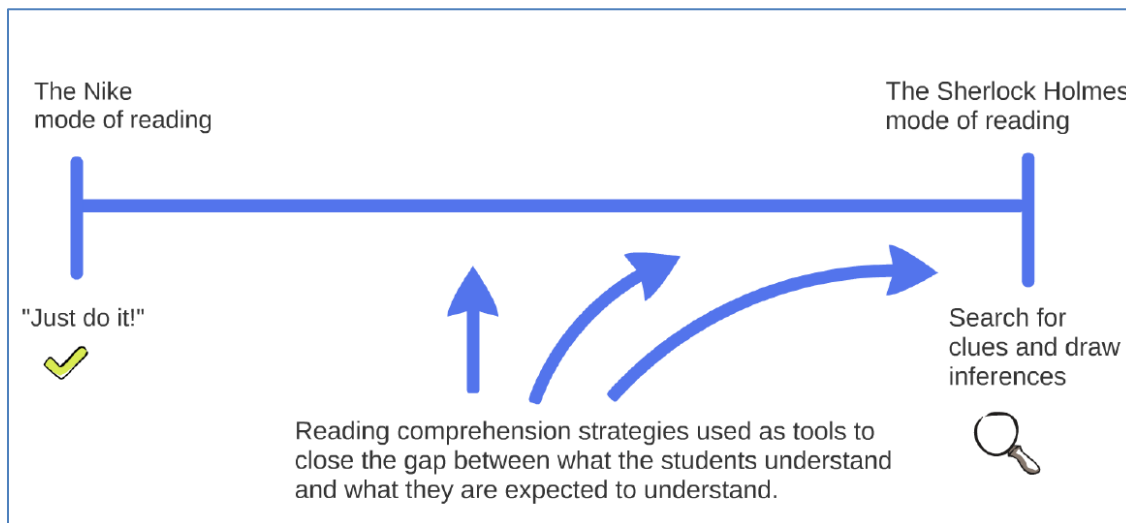


Figure 1. *Mode of reading continuum*¹.

To sum up, understanding the strategic processing that goes on in the classroom implies a conceptualization of teachers' instructional practices to foster student comprehension. Researchers have argued that these processes should initially be modelled by the teacher, and gradually be applied by the autonomous learner (Bernhardt, 2011; Duke et al., 2011; Grabe, 2009). Based on this conception, the present study aimed to identify how teachers made their implicit reading comprehension strategies practices explicit, as few studies have explored strategic reading instruction in Norwegian upper secondary school. The following section explains the methods and context in more detail.

2. Methods

The present study used a qualitative approach that involved collecting data from group interviews and written narratives. The study was based on a TPD course in reading comprehension strategies instruction for upper secondary teachers. This was a deliberate choice to study learning experiences among teachers who chose to participate in such a course, bearing in mind Borko's (2004) and Pressley's (2008) consistent findings that the most motivated and effective teachers seek professional development, while the weaker ones are confident that they already teach well. The TPD course was initiated by the local government management in a Norwegian county², who required the course to be aligned with national standards, as part of their coherent TPD programme.

¹The model was created by the author, based on the two modes of reading provided by Professor P. David Pearson in a private conversation on 23 October 2013 at the University of California, Berkeley, arranged by NATED – National Graduate School in Education.

² In Norway, upper secondary school management operates on three levels: (1) The national level: The Ministry of Education and Research [KD], which is responsible for kindergarten, education and research, and The Norwegian Directorate for Education and Training [UDIR], which is responsible for the development of kindergarten and primary and secondary education. UDIR is the executive agency for KD. (2) The regional level: The school district management is responsible for all upper secondary education in Norway. (3) The local level: The leadership at each upper secondary school is responsible for providing education to their students according to the laws and regulations.

2.1 Ethical considerations

As the author was invited regularly to facilitate TPD courses in various counties, one of these was randomly chosen for data collection, independent of the county's interests. The county management suggested the participants be asked directly if they wanted to participate in the study, which conforms well to the ethical notion of avoiding gatekeepers. Ryen (2011) has pointed out that some people hold positions as gatekeepers where they are able to provide a researcher access to a group that is willing to consent in that particular context (Brevik, 2013). It might have been problematic for the county management to grant participation in the study, if the teachers participating in the TPD course had perceived the power relation between themselves and the county management as uneven, and had felt that they had to consent to what the county management proposed. The right to freedom and self-determination should include the right to choose whether or not to take part in the research study (Busher & James, 2012).

2.2 Participants

The county management practiced voluntary course participation, and 35 teachers registered. Of these, 21 were willing and able to participate in the study. They gave their voluntary consent in each data collection situation, not only to safeguard their interests and right to withdraw their consent at any point (Busher & James, 2012; Ryen, 2011), but also to provide information perceived as relevant from the participants' point of view (Brevik, 2013; Fowler, 2009). The participants were teachers of different subjects: English Language Arts (L2), Norwegian Language Arts (L1), Religion and Ethics, Social Studies, and Vocational subjects. They worked at 11 schools (suburban and rural) offering general studies and/or vocational programmes. In the findings section, all 21 teachers are referred to. In addition, examples from five focus teachers illustrate the findings; to retain anonymity, they are called Stine, Nora, Magne, Andreas and Maria.

2.3 Study design

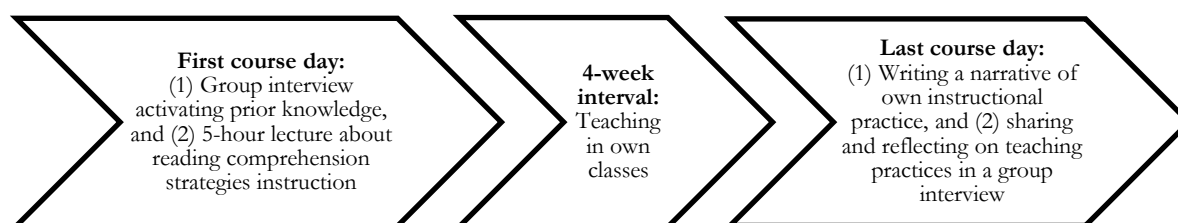


Figure 2. The study design; a four-week professional development course.

First course day: As shown by Figure 2, the TPD course included *activating prior knowledge* to elicit the teachers' general knowledge of reading comprehension instruction. The researcher designed and facilitated the *lecture* to align it with national initiatives and curriculum requirements about reading comprehension strategies (see Table 1); describing and modelling when and how each strategy could be used, providing examples and offering scaffolding of classroom-based teacher talk (Pearson, 2010), emphasising the importance of collaborative and guided student practice, with gradual release of responsibility towards independent strategy use (Duke et al., 2011). The lecture focused on the flexible use of strategies adapted to the classroom context, emphasising the notion of teaching students, not cognitive strategies (Duke et al., 2011; Underwood, Yoo, & Pearson, 2007).

	Strategy description	Examples from the lecture (scaffolding teacher talk)
Activation strategies		
Setting purposes	Students have clear comprehension goals in mind for their reading of a particular text (Duke et al., 2011; Grabe, 2009).	When you work through the tough parts of the text – which strategies do you need? Which can you select to meet your comprehension goals?
Activating prior knowledge	Students activate prior knowledge about strategies and the topic, and integrate it with text information (Block & Duffy, 2008; Duke et al., 2011; Fisher & Frey, 2008; Grabe, 2009).	Which comprehension strategies do you know to decode and derive meaning from texts? What do you know about the topic...? Which words can we use to talk about...?
Previewing and predicting	Students preview a text in advance and as they read by looking over titles, text features, pictures, captions, etc., making predictions (guesses) about what is to come (Block & Duffy, 2008; Duke et al., 2011; Grabe, 2009).	What do you think the text is about? Preview by briefly skimming the headings, pictures and captions, then use what you see to predict (guess) what the text is about. Stop every 2-3 pages to predict what will happen next in the text.
Strategies for reading focus		
Skimming & scanning	Students search a text for information; by skimming for the main idea or scanning for specific details (Grabe, 2009).	You can skim to locate main ideas (see above) or scan for important details by searching for a specific term, name, year, the first sentence in each paragraph, etc.
Careful reading	Students read the text carefully (Duke et al., 2011). They read to understand the content, details and nuances as expressed explicitly in the text.	Read the text from beginning to end, including heading, pictures, captions, and figures. Read closely to determine what the text says explicitly.
Contextual reading	Students use the context to try to determine the meaning of unfamiliar words and concepts (Block & Duffy, 2008; Duke et al., 2011; Grabe, 2009).	Skip unfamiliar words or phrases in a text, read on for clues and then come back to it. Guess the meaning from the context (sentence or paragraph before and after the unfamiliar words).
Making inferences	Students make inferences by connecting ideas in a text, reading between the lines, building coherence between separate parts of the text (Block & Duffy, 2008; Grabe, 2009).	Connect ideas in the text based on your personal experiences, your knowledge of other texts and the world, to help you understand the text.
Note-taking strategies		
Underlining/ highlighting	Students highlight important text information; identifying main ideas (OECD, 2009)	Underline or highlight information in the text that helps you identify main ideas.
Key words	Students collect words, by identifying key words in a text (Grabe, 2009)	Underline, write down or list key words in the text that help you identify main ideas.
Visualize (graphic organizers)	Students construct meanings expressed in text, to display information in visual form. They can do so by taking notes in visual, holistic diagrams, typically using key words and/or illustrations (Duke & Pearson, 2002; Duke et al., 2011; Fisher & Frey, 2008; Grabe, 2009).	<i>Mind map:</i> Write the main idea in the centre of a circle, with key words or illustrations around. Connect ideas by drawing lines. <i>Timeline:</i> Write years and/or events chronologically along a vertical or horizontal line. <i>Venn diagram:</i> Compare events or persons in overlapping circles; differences in the outer circles and similarities in the overlap. <i>Word cloud:</i> Generate a digital, visual representation of a text, where the largest words are the most frequent ones in the text. <i>KWL form:</i> What you know (K), want to know (W), and what have learnt (L).
Question	Students stop to reread when the meaning is unclear, and generate questions about the text (Block & Duffy, 2008; Fisher & Frey, 2008; Grabe, 2009; OECD, 2009)	Form questions and find answers in the text as it is read. These questions might be of the what, who, where, how, or why variety.
Summarize	Students sum up important text information; identifying main ideas as they read (Block & Duffy, 2008; Duke et al., 2011; Grabe, 2009; OECD, 2009)	While reading, frequently construct and revise summaries of what you have read. Then form a valid summary of the information in the text. Create a coherent representation of the original.

Table 1. Specific reading comprehension strategies covered in the lecture.

Mindful of the non-specific nature of teachers' use of "varied work methods" expressed in the national curriculum (KD, 2006, 2013), the facilitator referred to PCK to suggest how strategies instruction could be linked to SCK and transformed into teaching in the subjects (Ball et al., 2008; Borko et al., 2010; Shulman, 1986, 1987). Acting as students, the teachers participated in two activities to experience collaborative use of a small repertoire of strategies in action. In

Activity 1 (Science), the selected strategies were *skimming*, *scanning*, and *careful reading*. In Activity 2 (English Language Arts), the selected strategies were *skimming*, *contextual reading*, *making inferences*, and *graphic organizer*. At the end of the first day, the teachers were encouraged to adapt their prior strategic knowledge and the lecture to meet their students' needs during the four weeks of teaching locally.

4-week interval: The middle section of the TPD course, which involved *teaching in their own classes*, was considered relevant because Norwegian upper secondary schools typically offer three academic years (year 11–13) at the 16–19 age range, where local variations meant that any changes in teaching practices must be implemented locally. Also, effective professional development is situated in teachers' own practices (Borko et al., 2010). The researcher was not present in any of the classrooms, which meant that the teachers had autonomy in choosing whether or not to transform the strategies to their classroom contexts.

Last course day: The *writing of narratives* was included to make the teachers' practices explicit, in line with research showing the impact of writing as a tool for metacognitive reflection and awareness (e.g., Avalos, 2011; Borko, 2004; Myhill, Jones, Lines, & Watson, 2012). The researcher had prepared a template for the teachers (Appendix A), but did not tell them beforehand that they would be asked to write these narratives. Finally, *sharing and reflecting* put the teachers in a position of knowledge-sharing and reflecting on their reading comprehension strategies instruction, both in general and in relation to the specific lesson.

2.4 Data collection

The researcher collected data using a dual approach (see Table 2) that involved written teacher narratives and contextualized group interviews. The main approach was to ask in line with Creswell (2013), "What is the person saying (or doing) in this passage?" (p. 205). Hence, the written narratives comprised the primary data corpus because they addressed how each teacher described his or her practice. The interviews comprised an additional data corpus to provide richer information and a more robust dataset.

Primary data corpus	
Written teacher narratives (last day)	21 teachers described 23 lessons of reading comprehension strategies instruction across subjects: Norwegian language arts (13), English language arts (3), Social Studies (1), Religion and Ethics (1), and Vocational subjects (5).
Additional data corpus	
Pre-interview (first day)	Semi-structured focus group interview with the 21 teachers, to activate prior knowledge
Post-interview (last day)	Semi-structured focus group interview with the 21 teachers, using the written narratives as contextualizing material

Table 2. *Corpus data 1 and 2.*

Written narratives: The teachers spent 20 minutes writing individual narratives about a reading comprehension instruction that they felt had been successful. The selected instruction could be either during the four-week interval or earlier. After 20 minutes, the researcher photocopied their narratives and handed them back, so they could present them in groups of four, while the researcher read through each narrative to prepare for the post-interview. The narratives provided a record of *which* specific reading comprehension strategies the teachers reported using in their teaching, how these practices *differed* across subjects, and whether the teachers made their practices *explicit*. Two teachers wrote two narratives each; both were kept, as they provided examples of strategy instruction across subjects and languages (L1–L2) among the same teachers.

Interviews: These were conversational and resembled naturally occurring data (Kitzinger, 1995), initiating interaction to hear multiple voices within the same interview (Creswell, 2013). Two primary questions prompted discussion: *What do you ask your students to do during reading comprehension instruction?* and *Which reading comprehension strategies do you ask your students to use before, during, or after reading?* Both group interviews lasted for approximately 20 minutes, during which the researcher took field notes including quotations from the teachers. When validation or clarification was required, the researcher summarized their responses by asking, “Do you mean that...?” and made corrections to the notes based on their responses. Since the teachers in the post-interview often quoted what they had written in their narratives, the researcher underlined their quotations. Immediately after the interviews, the researcher read through the notes and added reflective passages (Creswell, 2013).

2.5 Data analysis

As shown in Table 3, the first reading of the narratives focused on identifying main strategies.

Readings	Aim	Tools of analysis	Research question
1 st reading (narratives)	To identify main strategies referred to in the narratives.	Ways of representing memorization, elaboration, organization, monitoring	Which specific reading comprehension strategies did the teachers report to use?
2 nd reading (narratives)	To identify specific strategies referred to in the narratives.	Strategies recognized in the review and the lecture.	Which specific reading comprehension strategies did the teachers report to use?
3 rd reading (narratives)	To identify subject specific strategies instruction.	Linking the identified strategies with subjects.	How did strategies differ across subjects?
4 th reading (interviews)	To identify how the teachers talked about their practices.	Referring to reading comprehension strategies instruction.	How did the teachers make his or her practice explicit?

Table 3. *Steps of analysis.*

However, realizing that they were too broad to catch all aspects of the strategies described in the narratives, a second reading was used to categorize the narratives using inductive coding and identifying each strategy described. The researcher then created categories that emerged from the narratives, and identified strategies that were presented in the lecture and those that were not. The third reading focused on finding systematic similarities and differences within each subject. In reading four, the researcher analysed the interviews based on the teachers’ expressed knowledge about reading comprehension strategies and how they applied these in their instruction.

2.6 Validity, reliability, and limitations

A number of steps were taken to assure the validity and reliability of the data. First, since self-reported data might reflect intentions rather than practices (McNamara, 2011); the interview data was combined with individually written narratives describing a specific lesson. The consistency in teacher responses strengthened the confidence in the validity of the data (Porter et al., 2003). In addition, all teachers received a copy of the original, handwritten narratives, and also, half of the teachers were randomly selected to receive a transcribed version of their narrative for member checking (Creswell, 2013).

The clearest limitation of these data was the double role the researcher had acting as facilitator leading the TPD course, which may have influenced the interpretation of the findings. This was addressed by using the qualitative software NVivo 9/10 for transparency (Creswell, 2013), to code and reanalyse the data after two, six, and 18 months. Comparisons of the coding into categories indicated satisfactory overlap, in line with Anmarkrud and Bråten (2012) who argued

that “such intra-rater agreement has been discussed and used to assess reliability in qualitative research by several authors” (p. 605). In the following analysis and discussion, there has been no claim to generalizability due to the sample size; rather, the transferability of the data has been addressed.

3. Findings

Throughout the TPD course, there was an observed change in how the teachers described their teaching practices. While in the pre-interview their practices came across as implicit and unarticulated, they described their instruction quite explicitly in the narratives and the post-interview. Three patterns emerged in the teachers’ instructional design: (1) in the written form, the teachers were more explicit about their instruction than in the interviews, (2) multiple strategies were combined in each instruction, and (3) subjects seemed to matter more than strategies.

3.1 Written narratives made strategies instruction explicit

In the pre-interview, the teachers were asked to express their prior knowledge of what they generally do when teaching reading comprehension. In their responses, they emphasised the act of reading; how they simply asked their students “to read the text”. A common response was, “I present the title, provide the text or the page number in the textbook, and ask the students to start reading.” When asked specifically about whether they included reading comprehension strategies, one teacher said, “Reading strategies? We don’t use them. We just read.” Others agreed by saying “yes” or nodding. When encouraging them to give examples of strategies, they seemed to find this difficult. Maria, a Norwegian Language Arts teacher explained, “Well, it’s hard to describe, as I use reading strategies as an integrated, natural part of my teaching.”

The relative lack of explicit descriptions of what the teachers did in their instruction did not come across as a confirmation that they could not or did not teach reading comprehension strategies; it merely seemed like they did not articulate their practices. Indeed, this lack of explicitness became obvious during the last day of the course, four weeks later, when all the teachers in their written narratives described comprehension strategies as part of their instruction. They elaborated on these practices later, in the post-interview.

In the pre-interview, however, one group of teachers had expressed that they usually applied reading comprehension strategies in their instruction, without providing any examples. Then, in their narratives, two of these teachers, Stine and Nora, not only described which specific strategies they taught in their Norwegian Language Arts lessons, but also explained that “the students are used to this” (Stine) and “we do this once a month, with varying length” (Nora). In other words, their written narratives suggested that their prior implicit practices – which they did not mention in the pre-interview – were made explicit in writing.

Another group of teachers, including the English Language Arts teacher Magne, did not say in the pre-interview whether they, in their teaching, included reading comprehension strategies. Still, Magne had asked his students to create a *word cloud* of words associated with “ballad”, to activate *prior knowledge*, before *scanning* the text:

I wanted to include another before-reading strategy and asked my students to scan the lines to search for rhyme. The students noticed that the end rhymes became more dramatic for each verse. Later, while listening to the ballad, they commented that the music was dramatic where the dramatic words were, and I noticed that some got tears in their eyes while listening. They were obviously well prepared through the before-reading strategy.

As suggested by the quote, Magne asked his students to *listen actively* while reading silently along. This strategy was not presented in the lecture, and Magne acknowledged that, although he did not mention it in the pre-interview, he frequently used it when introducing new texts.

There was also a third group of teachers, who in the pre-interview had said that they did not teach strategic reading. One of these was Andreas, who had instructed his students in English Language Arts to *make inferences* and *discuss with peers*, while applying different strategies in his Vocational lesson:

My students study to become welders. They spend a lot of time in the workshop. I asked them to skim and scan two texts in the textbook about two different welding methods. Then they took notes in a Venn diagram about similarities and differences, to compare the methods. Finally, I brought them to the workshop to see how they used the two methods in practice, providing the opportunity to experience first-hand what they had understood from reading.

While *making inferences*, *skimming*, *scanning* and *Venn diagram* were presented in the lecture, *relating to study* and *discussing with peers* were not. Arguably, including strategies not presented in the lecture, suggested that the strategies might have been part of Andreas's implicit practice and made explicit in his narratives.

To sum up, whether or not these teachers expressed in the pre-interview that they taught strategic reading, they explicitly described strategies instruction in their narratives. In the post-interview they reflected on their descriptions, making the findings from the narratives more robust. Some explained new strategic instruction, while others made prior implicit practices explicit; as a result, it became clear that they were not primarily acquiring new strategic knowledge, but rather experiencing a renewed strategic awareness. Magne voiced this by saying, "Now that we have discussed reading strategies ... I realize that I do. I do use reading strategies a lot in my teaching." This awareness was not only apparent among the focus teachers, but across all the narratives.

3.2 Multiple strategies design

The most prominent feature across the 23 narratives was that the teachers described a combination of strategies in their instruction. In Figure 3, the strategies have been categorised based on the empirical findings in the narratives, suggesting three categories: *activation strategies*, *reading with specific focus*, and *note-taking strategies*.

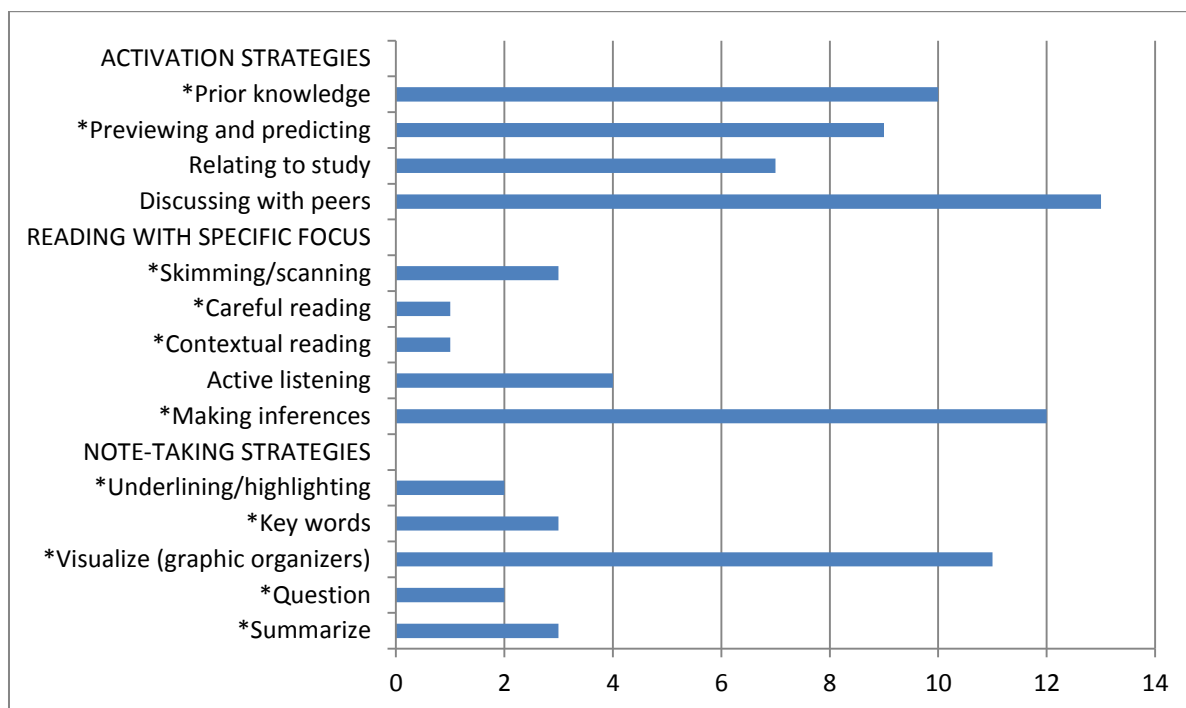


Figure 3. Specific strategies described across the narratives. Since each narrative mentioned more than one specific strategy, the total number was greater than 23. An asterisk (*) marks strategies presented in the lecture.

Typically, the teachers' instructional designs combined strategies from two or three of the categories in Figure 3, suggesting a multiple strategy repertoire. For instance, in Magne's narrative (section 3.1) he combined two strategies for *reading with specific focus* (scanning and active listening) and one *note-taking strategy* (word cloud). Andreas combined one *activating strategy* (discussing with peers) and one strategy for *reading with specific focus* (making inferences) in his English Language Arts narrative, while in his Vocational narrative he combined one *activating strategy* (relating to study), two strategies for *reading with specific focus* (skimming and scanning), and one *note-taking strategy* (Venn diagram).

Also, most narratives combined one or more strategies from the lecture (marked with an asterisk), while several narratives also described strategies not covered in the lecture. As shown in Figure 3, one such strategy was *relating to study* (Block & Duffy, 2008), where the teachers instructed their students to connect ideas in the text to their study programme. A second was *active listening* (Block & Duffy, 2008), where the teacher instructed the students to listen to an audio text, while reading along silently. A third was *discussing with peers* (Hopfenbeck & Roe, 2010), where the students reflected together in order to improve comprehension, as planned strategic reading rather than unplanned social activity (Blatchford, Kutnick, Baines, & Galton, 2003) or cooperative learning activities (Topping et al., 2011).

As shown in Figure 3, the dominant strategies across the narratives were *discussing with peers*, *making inferences*, and *graphic organizers*. It was interesting to note that the most frequently reported strategy, *discussing with peers*, was not covered in the lecture. By contrast, the lack of *careful reading* and *contextual reading* was striking, because both are strategies for reading in a detailed manner. However, in four narratives the teachers instructed the students to "read a part of a novel each," "read the short story," "spend time at school reading," and do "regular reading (reading text)," implying that the students were instructed to read the text carefully, but without asking them to read strategically. Also, during *active listening*, the students were instructed to read along, suggesting careful reading.

The main strategies of memorization, organization, elaboration, and monitoring also emerged in the narratives with the prevailing ones being *elaboration* and *organization*. Since these are considered deeper-level strategies, the teachers' strategy design seemed to support deeper-level processing. However, it became apparent that the main strategies were too broad to catch detailed aspects of the strategies described in the narratives. For example, Magne instructed his students to use a graphic organizer as a specific strategy to *elaborate* on their associations of the word "ballad," while Andreas asked his students to use a graphic organizer to *organize* content from two different texts. Furthermore, none of the teachers referred explicitly to the main strategies in the narratives or in the interviews.

To sum up, when considering how the strategies in Figure 3 were combined in the narratives, a pattern of multiple strategy design emerged, which was interesting considering the subject-specific nature of the strategies instruction.

3.3 Subjects mattered more than strategy instruction

The second feature of the teachers' instructional practices pointed to SCK. None of the narratives described lessons where strategy instruction was the primary goal; rather, disciplinary understanding seemed to be at the core, applying discipline-specific strategies to promote student understanding in the subjects. Maria confirmed this in her Norwegian Language Arts lesson where the learning aim was repetition of literary analysis. She wrote, "Here I have focused more on the analysis [...] than the reading strategy as such".

Another example was Andreas's Vocational narrative, providing the following learning aim: "learning differences and similarities among welding methods." To promote this subject-specific aim, he asked his students to use *skimming* and *scanning* while reading two texts about welding; and then to use a *Venn diagram* as a note-taking strategy to compare the text content. Finally, the students were to *relate the content to their study*, namely welding. Andreas explained that he assessed his students to see whether strategic reading helped them not only to become better readers, but also better workers: "See whether the students used the tools correctly. Test practically/theoretically". Similarly, the Religion and Ethics narrative confirmed the SCK focus. Although learning goals were not provided, the strategies were applied to enhance subject matter. The teacher asked her students to *make inferences* to assist them in comparing characters from the film *The Chronicles of Narnia* to their *prior knowledge* of biblical persons taught in the previous lessons.

A subject-specific strategies repertoire emerged in two subjects; English Language Arts and Vocational studies. In English Language Arts, all three narratives described how the teachers instructed their students to activate *prior knowledge* before reading, to use *active listening* while reading and to *summarize* the content after reading. These strategies have been recognized as being effective to understand subject matter in second language learning (Grabe, 2009). Similarly, in Vocational studies (communication and service, hairdressing, health work, welding, and wood turning), all five narratives included *note-taking strategies* and *relating to study*, assisting the students in relating the content to their studies.

To sum up, the narratives suggested that the teachers instructed their students to do more than "just read", and rather guide them to combine reading comprehension strategies as tools to understand subject matter. Although Shulman (1987) expressed concern that subject matter has had a tendency to come second to pedagogy when teaching basic skills, the subject-specific nature of the strategies instruction in this study revealed that this was not the case in the participating teachers' classrooms. The teachers seemed to have increased their metacognitive awareness throughout the teacher development, which will be discussed below.

4. Discussion

As emphasized in the review, it has been suggested that teachers know and do more than they articulate. Thus, that the teachers in this study had tacit knowledge and experiences of how to teach reading comprehension strategies should not surprise anyone. It is worth discussing further which role these strategies played in the teachers' instructional design – especially how they made their practices explicit. The striking difference between asking the teachers orally what they do in general, as opposed to asking them to write about a specific reading comprehension strategies instruction that they considered to have been successful will be discussed. The discussion will further consider the teachers' combination of knowledge sources, before addressing their tendency to design multiple strategies instruction that related to subject-matter learning. Finally, it will be argued that, if participating in a brief TPD course increased teachers' ability to teach strategic reading, then such courses might be profitable.

4.1 Making practices explicit through writing

Being unaware of what they actually know and do might make it difficult for teachers to move beyond restricted professionalism in the manner argued by Hoyle (1975). While the teachers in the pre-interview did not articulate how they taught reading comprehension or which strategies they generally used in their instruction, the same teachers explicitly described strategies in their written narratives and in the post-interview. Since the three data sets were collected among the same teachers, this discrepancy suggested some sort of teacher learning throughout the TPD course.

However, making tacit knowledge explicit involved more than translating the invisible into something visible. It was interesting to note that writing the narratives seemed to increase the teachers' metacognitive awareness of their instructional practices. Furthermore, the narratives presented substantial evidence of how the teachers conceptualized to make better readers. Writing the narratives seemed to have placed the teachers in a "strategic state of mind" because it forced them to focus for 20 minutes in silence on a situation they already knew since they had experienced it. In line with Avalos (2011), the teachers appreciated the template as a "thinking sheet" with headings that made them not only reflect on *what* they had done in a specific situation, but also *how* and *why*. This was of course due to the fact that the teachers were present at the same course, which again points to there being an effect of even such a small scale TPD. In other words, asking the teachers to write about their comprehension instruction in detail lead them to articulate in more depth the strategies they used.

4.2 Teacher's combination of knowledge sources

These findings suggest an apparent contradiction, as discussed by Aasen et al. (2012), Borko (2004), and Shulman (1986, 1987), between the teachers' knowledge and the way they articulated their knowledge to themselves and others. The narratives indicated that the teachers knew and did more than they initially articulated; *knew*, because they described strategies in their narratives that were not described in the lecture, as shown in Figure 3, and *did*, because they practiced strategies instruction prior to the course, as Nora and Stine explicitly described in their narratives and Magne in the post-interview (section 3.1). Some of the strategies presented in the lecture might have been part of the teachers' prior knowledge and activated through the lecture.

Similarly, Stine's and Nora's explanations of their systematic teaching of comprehension strategies echoed what Bråten and Samuelstuen (2004) labelled as forms of procedural knowledge. This is also in line with Klette and Carlsten (2012), who argued that procedural knowledge is often implicit and a part of teachers' tacit knowledge. The narratives suggested that, just as students are unlikely to appear before their teachers as "blank slates" (Shulman, 1986), the same applied to the teachers. It goes without saying that they drew upon experience-based knowledge to some extent, either as their only source of strategic knowledge, or in addition to

new strategic knowledge acquired. As such, this study provided information of teachers' knowledge and metacognitive learning related to the teaching of strategic reading, as called for by Baker (2008), Block and Duffy (2008,) and Duke et al. (2011).

It is tempting to suggest that the teachers profited by activating their prior knowledge, in line with Porter et al. (2003), and combined it with theories underpinning PCK of how to make strategic reading teachable. This is possibly what Magne did when he recognized the potential of adding theory-based before-reading strategies to lessons already designed. Such a combination of knowledge sources might help the teachers orient themselves towards extended professionalism, as argued by Hoyle (1975).

4.3 Designing multiple strategies instructions in the subject areas

This study has illuminated the notion that the teachers combined multiple strategies in their instructional design, as suggested in the review section. By sharing a repertoire of specific reading comprehension strategies (Figure 3) the teachers seemed to have become aware of strategic reading, not only as part of their SCK, but also as detailed PCK of how to activate student knowledge, how to instruct the students to read with a specific focus, and to take notes before, during, and after reading.

It was interesting to note that the teachers referred to specific strategies (Block & Duffy, 2008; Duke & Pearson, 2002; Duke et al., 2011; Fisher & Frey, 2008; Grabe, 2009; Hopfenbeck & Roe, 2010; OECD, 2009), rather than the broader main strategies of memorization, organization, elaboration, and monitoring (Weinstein & Meyer, 1986). The main strategies appeared as relevant categories for the researcher in the analysis of the narratives, but did not come across as a set of strategies immediately transferable to the practicalities of classroom teaching. Considering that Norwegian students are expected to apply reading comprehension strategies in the subjects (KD, 2006, 2013), it was interesting that the teachers seemed to apply subject-specific strategies to teaching in their subjects (Dillon et al., 2011; Grossman et al., 2010; Lee & Spratley, 2010; Moje, 2008; Shanahan & Shanahan, 2008). However, as pointed out by Moje (2010), since students move between classes and subjects, the practices may appear to be specific to the particular teacher in the specific subject, rather than strategies related to disciplinary thinking.

4.4 Designing short teacher professional development courses

The findings suggest that the participants in this small study were able to make their practices more explicit through this methodology. This is in line with the studies reviewed by Avalos (2011), where findings indicated that teacher reflection and narratives were successful tools for changing practices. This further indicates that this way of asking the teachers to document their practices in writing might be transferable to other teachers as well.

Although TPD takes time, a notable difference exists, between TPD that intends to teach teachers new knowledge, and TPD that makes them aware of the knowledge they already have and how they actually teach. In the latter case, shorter TPDs might prove successful, as experienced by Pressley (2008) and suggested by this study. Although short courses are used to *inform* teachers of research-based knowledge (Anmarkrud & Bråten, 2012), an observed difference related to the TPD course designed in the present study was the combination of information *and* modelling of strategies while inviting the teachers to participate in strategic reading activities and activating the teachers' prior knowledge. Another element was the interval between the first and last course day, providing the participants with the opportunity to reflect on their practices, in the manner argued by Avalos (2011), and enact reading comprehension strategies instruction in line with interactive models (Bernhardt, 2011; Duke et al., 2011; Grabe, 2009), and *the Sherlock Holmes mode of reading* (see Figure 1).

The short course format applies to teacher training days (five in Norway and some other countries) that are available for TPD (Bubb & Earley, 2010). There is a need for further research not only on the effectiveness of such short courses, but also on how teacher training days relate to the vast amount of knowledge among teachers, for example about reading comprehension strategies instruction. Is the increased articulation of teacher practices found in the present study a sign of their having acquired new theory-based knowledge or of experiencing raised strategic awareness, which TPD sometimes leads to? The research community could also benefit from further research on how some teachers have managed to incorporate strategic reading, for instance, in practices that require subject-specific strategies for reading in the disciplines. The findings also raise questions of how the participating teachers implement strategic reading in their further teaching, which the researcher have chosen to investigate by observing the classrooms of eight of the 21 teachers – one year after their participation in the present study.

5. Conclusion

The initial lack of articulation of what the teachers generally did when engaging their students in reading comprehension suggests that the abstract nature of comprehension is a challenging concept. It does not mean that the teachers did not or could not teach reading comprehension strategies; rather it merely suggested that the teachers might not have been explicitly aware of their reading comprehension strategy instruction. It appeared that, during professional development, the upper secondary teachers in this study compensated between knowledge sources. In other words, they did not necessarily acquire new strategic knowledge, but rather experienced a renewed strategic awareness of how to make their tacit knowledge and implicit practices explicit.

Acknowledgements

The author would like to thank Associate Dean Jennifer Whitcomb at the University of Colorado at Boulder, Associate Professor Gunn Søreide at the University of Bergen, as well as Associate Professor Glenn Ole Hellekjær and Dr. Marte Blikstad-Balas at the University of Oslo, for their invaluable comments on an earlier draft of this article. The author would also like to thank her research group, Teacher Professionalism and Educational Change: Practices, Purposes, Policies (TEPEC) at the Department of Teacher Education and School Research, University of Oslo, for funding this study.

References

- Aasen, P., Møller, J., Rye, E., Ottesen, E., Prøitz, T. S., & Hertzberg, F. (2012). *Kunnskapsløftet som styringsreform – et løft eller et løfte? Forvaltningsnivåenes og institusjonenes rolle i implementeringen av reformen*. NIFU Report, 20.
- Afdal, H. W., & Nerland, M. (2012). Does teacher education matter? An analysis of relations to knowledge among Norwegian and Finnish novice teachers. *Scandinavian Journal of Educational Research*, 1–19. <http://dx.doi.org/10.1080/00313831.2012.726274>
- Afflerbach, P., Pearson, D., & Paris, S. G. (2008). Clarifying Differences Between Reading Skills and Reading Strategies. *The Reading Teacher*, 61(5), 364–373. <http://dx.doi.org/10.1598/RT.61.5.1>
- Alderson, C. (2000). *Assessing Reading*. Cambridge: Cambridge University Press.
- Anmarkrud, Ø., & Bråten, I. (2012). Naturally-Occurring Comprehension Strategies Instruction in 9th-Grade Language Arts Classrooms. *Scandinavian Journal of Educational Research*, 56(6), 591–623. <http://dx.doi.org/10.1080/00313831.2011.621134>

- Avalos, B. (2011). Teacher professional development in teaching and teacher education over ten years. *Teaching and Teacher Education*, 27, 10–20. <http://dx.doi.org/10.1016/j.tate.2010.08.007>
- Baker, L. (2008). Metacognition in Comprehension Instruction. What We've Learned Since NRP. In C. C. Block & S. R. Parris, (Eds.), *Comprehension Instruction. Research-Based Best Practices* (2nd ed.) (pp. 65–79). New York: The Guilford Press.
- Ball, D. L., Thames, M. H., & Phelps, G. (2008). Content Knowledge for Teaching: What makes it special? *Journal of Teacher Education*, 59(5), 389–407. <http://dx.doi.org/10.1177/0022487108324554>
- Bernhardt, E. (2011). *Understanding advanced second language reading*. NY: Routledge.
- Blatchford, P., Kutnick, P., Baines, E. and Galton, M. (2003). Toward a social pedagogy of classroom group work. *International Journal of Educational Research*, 39(1–2), 153–172. [http://dx.doi.org/10.1016/S0883-0355\(03\)00078-8](http://dx.doi.org/10.1016/S0883-0355(03)00078-8)
- Block, C. C., & Duffy, G. G. (2008). Research on Teaching Comprehension. Where We've Been and Where We're Going. In C. C. Block & S. R. Parris, (Eds.), *Comprehension Instruction. Research-Based Best Practices* (2nd ed.) (pp. 19–37). New York: The Guilford Press.
- Borko, H. (2004). Professional Development and Teacher Learning: Mapping the Terrain. *Educational Researcher*, 33(8), 3–15. <http://dx.doi.org/10.3102/0013189X033008003>
- Borko, H., Jacobs, J., & Koellner, K. (2010). Contemporary approaches to teacher professional development. In P. Peterson, E. Baker, & B. McGaw, (Eds.), *International Encyclopedia of Education* (Vol. 7) (pp. 548–556). Oxford, England: Elsevier.
- Brevik, L. M. (2013). Research ethics: An investigation into why school leaders agree or refuse to participate in educational research. *Problems of Education in the 21st Century*, 52, 7–20. Retrieved from <http://urn.nb.no/URN:NBN:no-34383>
- Brevik, L. M., & Gunnulfsen, A. E. (2012). *Les mindre – Forstå Mer! Strategier for lesing av fagtekster. 8.–13. trinn.* (1st ed.). Oslo: Gyldendal Akademisk.
- Bråten, I., & Samuelstuen, M. S. (2004). Does the influence of reading purpose on reports of strategic text processing depend on students' topic knowledge? *Journal of Educational Psychology*, 96(2), 324–336. <http://dx.doi.org/10.1037/0022-0663.96.2.324>
- Bråten, I., & Strømsø, H. (2011). Measuring strategic processing when students read multiple texts. *Metacognition and Learning*, 6(2), 111–130. <http://dx.doi.org/10.1007/s11409-011-9075-7>
- Bubb, S., & Earley, P. (2010) *Helping Staff Develop in Schools*. London: Sage.
- Busher, H., & James, N. (2012). The Ethical Framework of Research Practice. In A. Briggs, M. Coleman, & M. Morrison, (Eds.), *Research Methods in Educational Leadership & Management* (3rd ed.). London: SAGE Publications, Ltd.
- Creswell, J. W. (2013). *Qualitative Inquiry & Research Design. Choosing Among Five Approaches* (3rd ed.). Los Angeles: SAGE Publications Inc.
- Dillon, D. R., O'Brien, D. G., Sato, M., & Kelly, C. M. (2011). Professional development and teacher education for reading instruction. In M. L. Kamil, P. D. Pearson, E. B. Moje, & P. P. Afflerbach (Eds.), *Handbook of reading research* (Vol. IV) (Chapter 26). NY & London: Routledge.
- Does, S. (2012). *Describing comprehension: Teachers' observations of students' reading comprehension*. Master's theses, dissertations and graduate research overview. Paper 56. USA: Rhode Island University.
- Dole, J. A., Nokes, J. D., & Drits, D. (2009). Cognitive strategy instruction. In S.E. Israel & G.G. Duffy, (Eds.), *Handbook of research on reading comprehension* (pp. 347–372). New York: Routledge.
- Duke, N. K., Pearson, P. D., Strachan, S. L., & Billman, A. K. (2011). Essential elements of fostering and teaching reading comprehension. In S. J. Samuels & A. E. Farstrup, (Eds.), *What research has to say about reading instruction* (4th ed.) (pp. 51–93). Newark, DE: International Reading Association.

- Evans, L. (2008). Professionalism, professionalism and the development of education professionals. *British Journal of Educational Studies*, 56 (1), 20–38. <http://dx.doi.org/10.1111/j.1467-8527.2007.00392.x>
- Fisher, D., & Frey, N. (2008). Comprehension Instruction in Action. The Secondary Classroom. In C. C. Block & S. R. Parris, (Eds.), *Comprehension Instruction. Research-Based Best Practices* (2nd ed.) (pp. 258–270). New York: The Guilford Press.
- Fowler, F. J. (2009). *Survey Research Methods* (4th ed). Thousand Oaks, CA: Sage Publications, Inc.
- Grabe, W. (2009). *Reading in a Second Language: Moving From Theory to Practice*. Cambridge: Cambridge University Press.
- Grossman, P., Hammerness, K., & McDonald, M. (2009). Redefining teaching, re-imagining teacher education. *Teachers and Teaching: theory and practice*, 15(2), 273–289. <http://dx.doi.org/10.1080/13540600902875340>
- Grossman, P., Loeb, S., Cohen, J., Hammerness, K., Wyckoff, J., Boyd, D., & Lankford, H. (2010). *Measure for measure: The relationship between measures of instructional practice in middle school English Language Arts and Teachers' Value Added Scores*. Cambridge: NBER.
- Hargreaves, D. H. (2003). *Education Epidemic. Transforming secondary schools through innovation networks*. London: Demos.
- Hattie, J. (2009). *Visible Learning. A synthesis of over 800 meta-analyses relating to achievement*. NY: Routledge.
- Hellekjær, G. O., & Hopfenbeck, T. N. (2012). CLIL og lesing. En sammenligning av Vg3-elevs leseferdigheter og lesestrategibruk i 2002 og 2011. Report to the Norwegian Centre for Foreign Languages in Education, investigating students' reading comprehension at the age of 18, comparing IB, CLIL and ordinary ESL students in Upper Secondary Schools. In B. W. Svenhard, (Ed.), *CLIL: Kombinert fag- og engelskopplæring i videregående skole. Fokus på Språk*, 28, 84–124. Retrieved from <http://fremmedspraksenteret.no/neted/modules/archive/front/file.php?data=4661d2a1e517eb4f134b3938b25ce12b>
- Hopfenbeck, T. N., & Roe, A. (2010). Lese- og læringsstrategier [Reading and learning strategies]. In M. Kjærnsli & A. Roe (Eds.), *På rett spor - Norske elevers kompetanse i lesing, matematikk og naturfag i PISA 2009* (pp. 118–137). Oslo: Universitetsforlaget.
- Horn, I. S., & 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. <http://dx.doi.org/10.3102/0002831209345158>
- Hoyle, E. (1975). Professionalism, professionalism and control in teaching. In V. Houghton et al., (Eds.), *Management in Education: the Management of Organisations and Individuals*. London: Ward Lock Educational in association with Open University Press.
- Hoyle, E. (2001). Teaching: prestige, status and esteem. *Educational Management & Administration*, 29(2), 139–152.
- Kintch, W. (1998). *Comprehension: A paradigm for cognition*. New York: Cambridge University Press.
- Kintch, W. (2004). The Construction-Integration model of text comprehension and its implications for instruction. In R. B. Ruddell & N. J. Unrau, (Eds.), *Theoretical models and processes of reading* (5th ed.) (pp. 1270–1328). Newark, DE: International Reading Association.
- Kitzinger, J. (1995). Introducing Focus Groups. *British Medical Journal*, 311, 299–302. Retrieved from <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2550365/pdf/bmj00603-0031.pdf>
- Klette, K., & Carlsten, T. C. (2012). Knowledge in teacher learning: New professional challenges. In K. Jensen, L. Lahn, & M. Nerland, (Eds.), *Professional learning in the knowledge society* (pp. 69–84). Rotterdam: Sense Publishers.

- Klette, K., & Smeby, J. C. (2012). Professional Training and Knowledge Sources. In K. Jensen, L. Lahn, & M. Nerland, (Eds.), *Professional learning in the knowledge society* (pp. 143–162). Rotterdam: Sense Publishers.
- Koda, K. (2005). *Insights into second language reading*. Cambridge, England: Cambridge University Press.
- Lee, C. D., & Spratley, A. (2010). *Reading in the disciplines: The challenges of adolescent literacy*. New York, NY: Carnegie Corporation of New York.
- McNamara, D. S. (2011). Measuring deep, reflective comprehension and learning strategies: challenges and success. *Metacognition and Learning*, 6(2), 195–203.
<http://dx.doi.org/10.1007/s11409-011-9082-8>
- McNamara, D. S., & Magliano, J. T. (2009). Chapter 9 Toward a Comprehensive Model of Comprehension. *Psychology of Learning and Motivation*, 51, 297–384.
[http://dx.doi.org/10.1016/S0079-7421\(09\)51009-2](http://dx.doi.org/10.1016/S0079-7421(09)51009-2)
- Meyer, X. (2013). Productive disciplinary engagement as a recursive process: Initial engagement in a scientific investigation as a resource for deeper engagement in the scientific discipline. *International Journal of Educational Research*, available online 19 August 2013.
<http://dx.doi:10.1016/j.ijer.2013.07.002>
- Moje, E. B. (2008). Foregrounding the Disciplines in Secondary Literacy Teaching and Learning: A Call for Change. *Journal of Adolescent & Adult Literacy*, 52(2), 96–107. Retrieved from
<http://www.jstor.org/stable/20111747>
- Moje, E. B. (2010). Developing disciplinary discourses and identities: What's knowledge got to do with it? In G. L. Bonilla & K. Englander, (Eds.), *Discourses and identities in contexts of educational change*. New York: Peter Lang
- Mortimore, P., Sammons, P., Stoll, L., & Ecob, R. (1988). *School matters*. CA: University of California Press.
- Myhill, D. A., Jones, S. M., Lines, H., & Watson, A. (2012). Re-thinking grammar: the impact of embedded grammar teaching on students' writing and students' metalinguistic understanding. *Research Papers in Education*, 27(2), 139–166.
<http://dx.doi.org/10.1080/02671522.2011.637640>
- National Reading Panel (2000). *Teaching children to read: An evidence-based assessment of the scientific literature on reading and its implications for reading instruction: Reports of the sub-groups*. Bethesda, MD: National Institute of Child Health and Human Development.
- Norwegian Directorate for Education and Training (2012). *Lærerskolering Ny GIV, Public Letter*. Retrieved from
<http://www.udir.no/Udir/PrintPageAsPdfService.ashx?pid=46748&epslanguage=no>
- Norwegian Ministry of Education and Research [KD] (2006, 2013). *Læreplan for grunnskolen og videregående skole [Curriculum for elementary and secondary school]*. Oslo: Author.
- OECD. (2009). *PISA 2009. Assessment Framework. Key competencies in reading, mathematics and science*. Paris: OECD Publications. Retrieved from
<http://www.oecd.org/pisa/pisaproducts/44455820.pdf>
- OECD. (2013). *PISA 2012 Results: Ready to Learn – Students' Engagement, Drive and Self-beliefs* (Vol. III). Paris: OECD Publishing. doi:10.1787/9789264201170-en
- Olsen, R. V., Hopfenbeck, T. N., Lillejord, S., & Roe, A. (2012). Elevenes lærings situasjon etter innføringen av ny reform. Synteserapport fra evalueringen av Kunnskapsløftet. *Acta Didactica* 1. Oslo: University of Oslo. Retrieved from
<http://www.udir.no/Upload/Rapporter/2013/Synteserapport%20RVO%20endelig%20jan%202013.pdf>

- Parris, S. R., & Block, C. C. (2008). Summing Up. In C. C. Block & S. R. Parris, (Eds.), *Comprehension Instruction. Research-Based Best Practices* (2nd ed.) (pp. 381–390). New York: The Guilford Press.
- Person, P. D. (2010). *A Rich Talk About Text*. Talk given at the University of Wyoming. Retrieved from <http://wyocast.uwyo.edu/WyoCast/Play/55179fde7ce64fe1b66750269a3a3d2b1d>
- Porter, A. C., Garet, M. S., Desimone, L. M., & Birman, B. (2003). Providing Effective Professional Development: Lessons From the Eisenhower program. *Science Educator*, 12(1), 23–40. Retrieved from <http://www.andyporter.org/sites/andyporter.org/files/papers/EffectiveProfessionalDevelopment.pdf>
- Pressley, M. (2008). Epilogue. What the Future of Reading Research Could Be. In C. C. Block & S. R. Parris, (Eds.), *Comprehension Instruction. Research-Based Best Practices* (2nd ed.) (pp. 391–413). New York: The Guilford Press.
- Pressley, M., & Afflerbach, P. (1995). *Verbal protocols of reading*. Hillsdale, NJ: Erlbaum.
- Roe, A. (2008). *Lesedidaktikk – etter den første leseoppleringen*. Oslo: Universitetsforlaget.
- Roe, A. (2013). Lesing [Reading]. In M. Kjærnsli & R. V. Olsen, (Eds.), *Fortsatt en vei å gå. Norske elevers kompetanse i matematikk, naturfag og lesing i PISA 2012* (1st ed.) (pp. 177–200). Oslo: Universitetsforlaget.
- Ross, J. A., & Bruce, C. D. (2007). Teacher self-assessment: A mechanism for facilitating professional growth. *Teaching and Teacher Education*, 23(2), 146–159. <http://dx.doi.org/10.1016/j.tate.2006.04.035>
- Ryen, A. (2011). Ethics and Qualitative Research. In D. Silverman, (Ed.), *Qualitative Research* (3rd ed.) (pp. 416–438). London: SAGE Publications Ltd.
- Shanahan, T., & Shanahan, C. (2008). Teaching disciplinary literacy to adolescents: Rethinking content-area literacy. *Harvard Educational Review*, 78(1), 40–59. Retrieved from <http://her.hepg.org/content/v62444321p602101/?p=edb3ceddf7e594da9bfe514436f8b9f6d&pi=15>
- Shulman, L. S. (1986). Those Who Understand Knowledge Growth in Teaching. *Educational Researcher*, 15(2), 4–14. Retrieved from <http://www.jstor.org/stable/1175860>
- Shulman, L. S. (1987). Knowledge and Teaching: Foundations of the New Reform. *Harvard Educational Review*, 57(1), 1–21. Retrieved from <http://her.hepg.org/content/j463w79r56455411/?p=b34e90bd653642a889110338b933a9df&pi=0>
- Topping, K. J., Thurston, A., Tolmie, A., Christie, D., Murray, P., & Karagiannidou, E. (2011). Cooperative learning in science: intervention in the secondary school. *Research in Science & Technological Education*, 29(1), 91–106. <http://dx.doi.org/10.1080/02635143.2010.539972>
- Underwood, T., Yoo, M. S., & Pearson, P. D. (2007). Understanding reading comprehension in secondary schools through the lens of the four resources model. In L. Rush, A. J. Eakle, & A. Berger, (Eds.), *Secondary school literacy: What research reveals for classroom practice* (pp. 90–116). National Council of Teachers of English
- Verloop, N., Driel, J. V., & Meijer, P. (2001). Teacher knowledge and the knowledge base of teaching. *International Journal of Educational Research*, 35(5), 441–461.
- Weinstein, C. E., & Meyer, R. E. (1986). The teaching of learning strategies. In L. Wittrock, (Ed.), *Handbook of Research on Teaching* (pp. 315–327). New York, NY: McMillan.
- Weinstein, C. E., Ridley, D. S., Dahl, T., & Weber, E. S. (1988). *Helping Students Develop Strategies for Effective Learning*. The Association for Supervision and Curriculum Development.

Wood, D. (2007). Teachers' Learning Communities: Catalyst for Change or a New Infrastructure for the Status Quo? *Teachers College Record*, 109(3), 699–739.

Appendix A

Teacher narrative form used to describe a best practice reading instruction. The teachers could use the heading or cross out any of them (based on Brevik & Gunnulfsen, 2012)

Subject & year:

Comprehension strategies:

School:

Teacher:

Topic:

Duration:

Learning aim

Preparations

Instruction

Before reading:

During reading:

After reading:

Didactic reflection

Appendix B

Analytic categories for reading comprehension strategies instruction found in the narratives.

Narratives*	Subject**	Text#	Main comprehension strategies Mem=memorization Org=organization Ela=elaboration Mon=monitoring				Specific strategies AS=activation strategies SF=specific reading focus NS=note-taking strategies		
			Mem	Org	Ela	Mon	AS	SF	NS
1	Norwegian (L1)	Fiction	x	x	x		x	x	x
2: Nora	Norwegian (L1)	Expository			x		x	x	
3	Norwegian (L1)	Fiction			x		x	x	x
4	Norwegian (L1)	Expository			x		x		
5	Norwegian (L1)	Fiction		x	x		x	x	x
6	Norwegian (L1)	Fiction		x				x	x
7	Norwegian (L1)	Expository		x	x			x	x
8: Stine	Norwegian (L1)	Expository		x	x				x
9	Norwegian (L1)	Fiction		x		x	x		x
10	Norwegian (L1)	Fiction		x				x	x
11: Maria	Norwegian (L1)	Fiction		x	x		x		x
12	Norwegian (L1)	Fiction			x		x	x	
13	Norwegian (L1)	Fiction		x	x	x	x	x	
14	Religion & ethics	Fiction			x		x	x	
15: Magne	English (L2)	Fiction		x	x		x	x	x
16: Andreas	English (L2)	Expository		x	x		x	x	
17	English (L2)	Fiction			x		x	x	
18	Social science	Expository	x	x				x	x
19	Vocational	Expository		x	x		x	x	
20	Vocational	Expository		x	x		x	x	x
21: Andreas	Vocational	Expository		x	x	x	x	x	x
22	Vocational	Expository	x	x	x	x	x	x	x
23	Vocational	Expository		x	x	x	x		x
SUM			3	17	19	5	18	18	15

* Each narrative is numbered 1–23, including the pseudonyms for the four focus teachers used as examples in the Findings section 3.1. Nora, Stine and Magne handed in one narrative each. Andreas handed in two narratives, no. 16 and 21.

** The subject areas in the narratives.

The text genre the students were instructed to read during the instruction described in the narratives.

Main comprehension strategies refer to Weinstein & Meyer's (1986) categories described in the review section 1.1.2, and the methods section 2.4.

Specific strategies refer to the categories described in the methods section 2.4, and found in the narratives as described in the findings section 3.2.