

# How teachers teach and readers read

*Developing reading comprehension in English  
in Norwegian upper secondary school*

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Lisbeth M Brevik,  
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# Summary

This thesis investigates practices of how teachers teach and readers read involved in developing reading comprehension in English in Norwegian upper secondary school.

It is an article-based thesis comprising three articles and an extended abstract. The latter includes a review of reading research, theoretical framing, methods and research design, and a summary and discussion of the three articles. The general theoretical and conceptual framing of this thesis is that reading instruction and reading comprehension in Norwegian upper secondary school take place within a sociocultural environment. Therefore, the thesis draws primarily on Vygotskian thinking on the importance of the active learner and the teacher who supports such learners, the use of reading comprehension strategies as tools for learning, and reading proficiency as an externalisation of reading comprehension. This theoretical framing is integrated with reading theories and reading comprehension research. Methodologically, the thesis uses a mixed methods approach to study the qualitative *and* quantitative aspects of practices involved in developing reading comprehension in English as a second language (L2).

Article I is a qualitative study which investigated reading instruction, reading strategies, and metacognitive awareness among teachers. It examined how English teachers and those who taught in the first language (L1) reported to include reading comprehension strategies in their instruction, and how they made their tacit knowledge of such instruction explicit after participating in a teacher professional development (TPD) course. The findings showed a change in how the teachers described their teaching over time. A small repertoire of reading strategies was identified, along with how and why these were used in the reading instructions.

Article II is another qualitative study of reading instruction, reading strategies, and metacognitive awareness, this time among teachers and their students. This study investigated how L2 teachers taught reading comprehension strategies in their instruction one year after the TPD course, how their students used the strategies offered to them, and how the students reflected on their strategy use. Classroom observation showed that reading strategies were not only taught by the teachers and used by the students; interestingly, strategy use seemed to have a personal purpose for the students in vocational programmes, but not for the students in general programmes. Moreover, while the teachers in vocational programmes demonstrated a

gradual release of responsibility for strategy use to their students, the teachers in general programmes did not.

Article III is a large-scale quantitative study that investigated reading proficiency within and across English L2 and Norwegian L1 across a national sample of upper secondary school students, including a number of those in Article II. The results of this study support the view that girls read better than boys and that students in general studies read better than vocational students. However, while the gender effect was relatively smaller for the L2 than the L1, the study programme effect was relatively larger for the L2 than the L1. This study also found that, while vocational students were in majority among the poor readers, only half of them were poor readers in both languages; the others were poor readers in one language and proficient readers in the other. Contrary to expectations, among the latter was a group of boys in both study programmes who were proficient readers in the L2, while being poor readers in the L1. A final finding was that, in the sample as a whole, 49% of the explained variance in the students' reading proficiency in English L2 was accounted for by a combination of gender, study programme, and L1 reading proficiency.

Based on the findings in the three articles, the main contribution of this thesis is increased knowledge about how teachers teach and readers read when developing reading comprehension in English in Norwegian upper secondary school. The findings show that reading proficiency in the L2 is closely related to reading proficiency in the L1 and study programme, although this is not a linear relationship for all students. The findings further show that reading strategies can be valuable learning tools that help readers develop their L2 comprehension, and that the teachers do indeed teach such strategies. Nevertheless, the findings also suggest little reason to claim that reading strategies are effective when taught in isolation. Instead, they have to be *explicitly* taught by the teachers, and then *used* individually and independently by the students seeing personal purposes to do so.



# Part I: Extended Abstract

<b>1</b>	<b>Introduction</b>	<b>1</b>
1.1	The Norwegian educational environment	4
1.1.1	English as a second language in Norway	4
1.1.2	The Norwegian school system	5
1.1.3	Reading comprehension in the national curriculum	5
1.1.4	Reading assessment in L1 and L2 in Norway	7
1.2	Overarching aim and research topics	7
1.3	The structure of the extended abstract	9
<b>2</b>	<b>Review of reading research</b>	<b>10</b>
2.1	International reading research	10
2.1.1	Reading comprehension in the L1	11
2.1.2	The relationship between L1 and L2 reading comprehension	13
2.1.3	Reading comprehension strategies (L1-L2)	14
2.1.4	Reading strategy instruction (L1-L2)	16
2.2	Reading research in the Norwegian educational context	18
2.2.1	Reading proficiency (L1-L2)	18
2.2.2	Reading instruction and strategy use (L1-L2)	20
2.3	Short summary	21
<b>3</b>	<b>Theoretical framing</b>	<b>22</b>
3.1	The adolescent L2 reader as a Vygotskian learner	23
3.2	The L2 teacher in the Vygotskian classroom	24
3.3	Reading strategies as tools for developing reading comprehension	27
3.4	Internalisation and externalisation of L2 reading comprehension	31
3.5	Short summary	32
<b>4</b>	<b>Methods and research design</b>	<b>33</b>
4.1	Mixed methods approach	33
4.1.1	The multiphase design	34
4.2	Participants	37
4.3	Data	38
4.3.1	Phase 1: Teacher narratives and teacher interviews	38
4.3.2	Phase 2: Field notes, teacher narratives, and student interviews	39
4.3.3	Phase 3: Student reading test scores	41
4.4	Analyses	42
4.4.1	Analytical concepts	42
4.4.2	Analytical process	44
4.5	Research credibility	46
4.5.1	Reliability	46
4.5.2	Validity	47
4.5.3	Generalisability	52
4.5.4	Research ethics	54
4.6	Short summary	55

<b>5</b>	<b>Summary and discussion of the articles .....</b>	<b>56</b>
5.1	Summary of the articles .....	56
5.1.1	Article I .....	56
5.1.2	Article II .....	58
5.1.3	Article III .....	61
5.2	Discussion of research contributions .....	63
5.2.1	Empirical contribution .....	63
5.2.2	Theoretical contribution.....	66
5.2.3	Methodological contribution .....	67
5.3	Concluding remarks.....	70
	<b>References.....</b>	<b>72</b>
	<b>Appendix 1.....</b>	<b>85</b>
	<b>Appendix 2.....</b>	<b>86</b>
	<b>Appendix 3.....</b>	<b>87</b>

## Part II: The Articles

### Article I

Brevik, L.M. (2014). Making implicit practice explicit: How do upper secondary teachers describe their reading comprehension strategies instruction? *International Journal of Educational Research*, 67, 52–66.

### Article II

Brevik, L.M. (accepted for publication). Strategies and shoes – Can we ever have enough? Teaching and using reading comprehension strategies in general and vocational study programmes. *Scandinavian Journal of Educational Research*

### Article III

Brevik, L.M., Olsen, R.V., & Hellekjær, G.O. (under review). The complexity of second language reading: Investigating the relationship between L1 and L2 using upper secondary level national reading tests. Under review for *Journal of Research in Reading*

# Part I

## Extended Abstract



# 1 Introduction

## HOW TO USE THIS BOOK

Start at the beginning and read all the words one after the other until you come to the very end and then stop.

*Vintage Books & Anchor Books, 2015*

In January 2015, Vintage Books & Anchor Books posted the sign reproduced above on their Facebook wall. Some interesting comments appeared: “About as useful as saying: How to Live. Be born and do one thing after the other and then die”, commented Jeremy Davies. “The irony of this, is that the only people who would need such a reminder, would be the ones who could not even read it in the first place. Or maybe an alien”, wrote Jorge López Montoya. Another comment, posted by Nima Shafaieh, was: “(Post Scriptum: you can/may start ‘over’ and repeat the steps, as a bonus!)”. Bell Knipple added, “And don’t read the last page first!”. “What about ‘think about the words’? I’ve seen too many students forget that most important step, to think it’s implicit”, wrote Vikiirna Wenzel. Finally, Ejiofor Alisigwe wrote the following comment: “Reading made easy for DUMMIES!”

The quote and responses above shed light on the importance of consciously teaching, and not to mention learning how to read a text efficiently, rather than simply starting to read without considering the alternatives. Almost two decades ago, Urquhart and Weir (1998) commented that reading instruction at school had a strong focus on reading for detail, from the beginning to the end of a text. In Norway, Hellekjær (2008) found this tendency to read slowly and for detail in upper secondary school students reading in English as a second language (L2). Hellekjær (2008) explained poor scores on an English reading test as arising from “too many us[ing] a counterproductive strategy of careful reading for detail which is typical of textbook reading in [L2] instruction” (p. 13). In his study, this strategy resulted in the participants’ inability to answer more than half the tasks in the reading test due to their reading and working very slowly, although the answers they managed were mostly correct. This finding illustrated Urquhart and Weir’s (1998) claim that it is problematic if educators’ focus on careful reading prevents students from adjusting how they read to suit the reading purpose (p. 103).

This brings us to the present thesis, in which I investigate practices involved in developing reading comprehension in English in Norwegian upper secondary school. I seek to identify what a sample of teachers do in their reading instruction, whether they include reading strategies, and how they perceive their instructional practices. I further investigate reading comprehension among these teachers' upper secondary students (16–17 years old), focusing on their use of reading comprehension strategies in the social environment of the classroom and their perceived purposes for using the strategies, along with their levels of reading proficiency.

Alderson, Haapakangas, Huhta, Nieminen, and Ullakonoja (2015) have commented that in a “literate society, it is not always realized how complex the act of reading is” (p. 68). They reminded us that the reading process – whether in the first language (L1) or the L2 – is “usually hidden: it is internal to the reader, it is private and not easily examined” (p. 71). Further, as Duke, Pearson, Strachan, and Billman (2011) argued, “we must understand how skilled comprehenders construct meaning, so we can help students learn to construct meaning in the same way” (p. 52). In this thesis, I argue the importance of having ambitions on behalf of all readers, regardless of their academic proficiency; poor readers as well as good ones, vocational students and students in general studies. I have therefore included teachers and students in both general and vocational programmes in my investigation of reading instruction, reading comprehension, and reading proficiency.

In an evaluation of the national curriculum in Norway, the majority of secondary school teachers across subjects recently reported that they focus on students' reading skills on a daily basis. However, what teachers say is one thing, but what they actually do is another. Indeed, we know very little about what goes on in the classrooms during such comprehension instruction, or whether strategy instruction is part of comprehension instruction at all (Aasen, Møller, Rye, Ottesen, Prøitz, & Hertzberg, 2012). Since strategy training has proven effective for student reading comprehension (e.g., Bernhardt, 2011; Block & Duffy, 2008; Grabe, 2009; Kamil, Afflerbach, Pearson, & Moje, 2011; National Reading Panel [NRP], 2000), it is worrying that research has suggested reading comprehension strategy instruction not to be carried out in the majority of reading classrooms (Hellekjær & Hopfenbeck, 2012; Moje, 2008; Pressley, 2008). More research on the professional development of reading comprehension teachers is apparently needed (e.g., Duke et al., 2011; Pressley, 2008).

To obtain a better understanding of the reading instruction practices among upper secondary school teachers, I asked teachers to reflect on their reading instruction, particularly to describe whether they include reading strategies in their instructional designs, and to observe how their reading instruction manifests itself in the classroom. I addressed these aspects of instructional practices in the context of a teacher professional development (TPD) course, as it would be profitable to investigate whether reading strategies offered at such a course are enacted in the classroom to help students engage with texts in the disciplines, using these strategies as tools to enhance their comprehension.

Research has shown that using reading comprehension strategies relates to the reader-controlled and deliberate processes of reading (Grabe, 2009; Pearson & Cervetti, 2013). Along the same line, Brantmeier, Sullivan, and Strube (2014) argued that “creating independent L2 readers is fundamental” (p. 34). This echoed Bernhardt (2011) who also contended that improving advanced L2 reading is imperative to enable students to develop as L2 readers without the direct guidance of a teacher. In order to identify aspects of students’ metacognitive awareness of the reading comprehension process in my thesis, I therefore seek to combine observations of how strategies are used by the students in the classroom, with the students’ elaborations on their strategic reading to obtain a better understanding of their personal purposes for strategy use.

Reading comprehension, according to the L1-focused RAND Reading Study Group (RAND, 2002) model, is “the process of simultaneously extracting and constructing meaning through interaction and involvement with written language” (p. 11). Although reading comprehension in the L1 and the L2 shares many features (Bunch, Walqui, & Pearson, 2014), reading in an L2 is inherently more complex than L1 reading “because it involves two languages in virtually all of its operations” (Koda, 2007, p. 16). In line with this view, Bernhardt (2011) emphasised the relationship between L1 and L2 literacy. Based on empirical research, she argued that L1 literacy and L2 language knowledge together explain 50% of L2 literacy, with an unexplained variance accounting for the remaining 50%. In the context of my research, I therefore include a dual-language perspective on the students’ reading comprehension within and across Norwegian L1 and English L2. In the following, I will briefly describe the Norwegian educational environment before I present the overarching aim of my thesis and the structure of this extended abstract.

## **1.1 The Norwegian educational environment**

As mentioned above, the empirical data in my thesis concern readers of English – and their teachers – in upper secondary school in Norway.

### **1.1.1 English as a second language in Norway**

Norway has traditionally, but somewhat inaccurately, been included among the countries where English is considered a foreign language. This commonly held view is based on a dichotomous notion of the English language as either foreign or second. For example, Alderson et al. (2015) explained that “a second language is typically one that is learned or acquired and spoken in a country where it is used by native speakers as their L1. A foreign language is one that is not used as an L1 by the majority of the population of a country” (p. 71). A decade earlier, Bruthiaux (2003) stated that, in several countries where English has traditionally been considered a foreign language, “English is widely taught as a second language while being no one’s primary language” (p. 172). Recently, Crystal (2012) modified the distinction between second and foreign languages, arguing that such a distinction has less contemporary relevance than it formerly had. He commented that “there is much more use of English nowadays in some countries [...] where it is ‘only’ a foreign language (as in Scandinavia and The Netherlands)”, than in some of the countries where it has traditionally been considered an L2 due to earlier English colonisation (p. 67). Crystal also wrote that, in Scandinavia, the English language is “esteemed an essential”. These notions of use echo that of Bruthiaux (2003), who argued that, rather than using history or geography to determine whether English is a second or foreign language, it is more productive to consider the level of proficiency and use in a country (p. 175).

Indeed, proficiency and use are relevant reasons that considering English as a foreign language is inaccurate for Norway. English in Norway has long been considered on the verge of becoming a second language (Graddol & Meinhof, 1999). As Chvala and Graedler (2010) have explained, in Norwegian schools “literacy in English develops alongside the pupils’ first language literacy. Other foreign languages, by contrast, are not introduced until after the foundation for literacy has been established” (p. 75). Further, Rindal (2013) argued that, “following the increased out-of-school exposure and English language proficiency, English no longer feels foreign to Norwegians” (pp. 1–2).

Based on the above discussion, Norwegian students seem caught in transition, somewhere between being learners of English as a foreign language and of English as an L2. In the following, I therefore define Norwegian students as learners of English as an L2,



although this takes place in a cultural and educational environment where the majority have Norwegian as their L1, where English is taught at school from Year 1, and adolescents encounter English on a daily basis, in and out of school.

### 1.1.2 **The Norwegian school system**

For Norwegian students, elementary school (Years 1–4), middle school (Years 5–7), and lower secondary school (Years 8–10) are mandatory. They can then move on to three years of upper secondary school (Years 11–13), which are voluntary, and where the students choose between general and vocational educational programmes.

English is a compulsory common core subject taught from Year 1 to at least Year 11. While it is taught in Year 11 in general programmes, the same course is taught in the vocational programmes across Years 11 and 12. Further, English is offered as an elective subject in Years 12 and 13 of the general programmes. The national curriculum states that the acquisition of knowledge and skills should become easier and more meaningful when students become aware of the strategies that help them understand texts (Norwegian Ministry of Education and Research [KD], 2006, 2013). This notion of relevance highlights the fact that English in upper secondary school is not only concerned with literature, culture, and society in English-speaking countries, but also includes subject-matter related to the students' educational programmes.

In 2012, at the time when the student data in the present study were collected, 58% of the students in upper secondary school attended general programmes, with the remaining 42% in vocational programmes (Norwegian Directorate for Education and Training [UDIR], 2013). The school results between students in these programmes reveal major differences. On average, students in the general programmes perform better in common core subjects, such as Norwegian and English, than the students in vocational programmes (UDIR, 2013). However, while these results are based on overall achievement and examination grades in the subjects, there are no available data on these students' reading proficiency in L1 or L2.

### 1.1.3 **Reading comprehension in the national curriculum**

Understanding how the reading comprehension process manifests itself has been of particular international interest since the first Programme for International Student Assessment (PISA) reading test for 15-year-olds in 2000. Lower reading scores than desired have since then drawn attention to the reading proficiency of secondary school students and instituted a number of policy initiatives. In Norway, one such initiative was the introduction of the

national curriculum in 2006, known as the Knowledge Promotion, in which reading as a basic skill was integrated into the competence aims for all subjects.

The main intention of the national curriculum (KD, 2006) was to better prepare students for participation in the “information society”. They were to be able to participate in a variety of literacy practices based on a multitude of texts and to be able to use reading strategies to help them close the gap between what they understand and what they are expected to understand. The Knowledge Promotion states that teachers are to stimulate their students as readers, offer opportunities for them to develop their reading comprehension, assess and give feedback on the skills and strategies their students master, and provide suggestions for their further development. The curriculum framework further emphasises that the learners should actively engage in their own reading development.

The Knowledge Promotion introduced five basic skills – oral skills, reading, writing, digital skills, and numeracy – to be integrated in the subjects (KD, 2006). This reform has been labelled a “literacy reform” (Berge, 2005), and the basic skill that has received the most attention is definitely reading (Olsen, Hopfenbeck, Lillejord, & Roe, 2012; Ottesen & Møller, 2010). However, an evaluation of the curriculum also showed that teachers struggled to understand how to implement the basic skills in their teaching and how to integrate them in the subjects (Aasen et al., 2012). Therefore, the Norwegian Ministry of Education and Research (KD) decided to revise the common core curricula to reinforce the position of the basic skills, even more clearly defining these as basic to learning in school, work, and social life (KD, 2013). They also decided to develop a framework for basic skills (UDIR, 2012) to be used in the curriculum revision. This process gave reading skills a prominent and explicit position in Norwegian education, and UDIR developed grids describing progression in the skills within the same framework. As a result, for the first time in Norway, a formal document that specifies reading skills at various levels of reading development in all school subjects exists, including descriptions of competence in the use of reading strategies (UDIR, 2012).

Although the Knowledge Promotion states that all teachers are to teach students how to use appropriate reading strategies adapted to purpose and text type in the subjects, it also allows methodological freedom for the teachers (KD, 2006, 2013). This flexibility means that they can choose which reading strategies to teach and how to address strategic reading in their classrooms. However, as mentioned above, the discouraging evaluation of the national curriculum pointed to a lack of information about what actually goes on when students are asked to read for understanding in Norwegian secondary school (Aasen et al., 2012).

#### 1.1.4 Reading assessment in L1 and L2 in Norway

In Norway, students undergo national and international reading tests at various school levels. Each year, national reading tests in the L1 and the L2 are conducted for all students in Years 5, 8, and 11 for both languages, plus an additional L1 test in Year 9 ( $N=60,000-78,012$  per school year in 2012). The international PISA reading test is conducted in the L1 every three years with a representative sample of students in Year 10 ( $N=4,686$  in 2012). The transitional year from lower to upper secondary school is of great importance, due to a high percentage of students continuing on to upper secondary education (92% in 2012), while many drop out during these years. The Organisation for Economic Co-operation and Development (OECD) report *Education at a Glance* (2014) found that only 40% of the students who entered vocational programmes in Norway graduated within the stipulated time, and only 71%–74% of students across all study programmes graduated within two more years (UDIR, 2013).

The transition between lower and upper secondary school is assessed by national reading tests conducted at the beginning of Year 11 that measure competence aims from Year 10; one mandatory paper-based reading test in Norwegian L1 and one voluntary digital reading test in English L2. These Year-11 tests have a diagnostic function, and can be used to plan instruction on the upper secondary level as well as to identify the lowest quintile of readers in both languages for special attention, including preventing these students from dropping out of school. However, this identification is done locally. This means that in the L1, there is no central register for the results, while the digital L2 data are registered digitally with the UDIR, although not being accessed or analysed centrally.

## 1.2 Overarching aim and research topics

The overarching aim of my thesis is *to investigate the practices involved in developing reading comprehension in English as the L2 in Norwegian upper secondary school*. To meet this goal, I conducted three separate studies that are presented in three articles.

*Reading instruction, reading strategies, and metacognitive awareness among teachers* are the main topics in Article I. In it, I investigated how 21 teachers reported using reading comprehension strategies in their instruction, and how they made their tacit knowledge of such instruction explicit after participating in a TPD course. The research question was: *What role do reading comprehension strategies play in upper secondary teachers' instructional design?* I used qualitative data from teacher interviews and written narratives, comparing reading instruction in English L2 to reading instruction in common core subjects and vocational subjects taught in the L1. The article was published as:

Brevik, L.M. (2014). Making implicit practice explicit: How do upper secondary teachers describe their reading comprehension strategies instruction? *International Journal of Educational Research*, 67, 52–66.

*Reading instruction, reading strategies, and metacognitive awareness among teachers and students* are the main topics in Article II. In this study, I investigated how five of the 21 upper secondary teachers from Article I used reading comprehension strategies in their English L2 instruction one year later, as well as how their 64 students used the strategies offered to them and how they reflected on their strategy use. The research questions were: *How do upper secondary teachers include reading comprehension strategies in their English L2 instruction, and how do they help their L2 learners to socially and personally engage with text by providing them with strategies?* In this article, I used qualitative data in the form of written teacher narratives, student interviews, and field notes from classroom observations. The article is accepted for publication by *Scandinavian Journal of Educational Research* (SJER):

Brevik, L.M. (accepted for publication). Strategies and shoes – Can we ever have enough? Teaching and using reading comprehension strategies in general and vocational study programmes.

*Student reading proficiency* is the main topic in Article III. It addressed reading comprehension assessment among upper secondary school students in an article written together with Research Professor Rolf Vegar Olsen, and my main supervisor, Professor Glenn Ole Hellekjær. Using quantitative data from a large sample of students ( $N=10,331$ ), including the schools in Article II, we investigated how reading assessments reveal the relationship between L1 and L2 reading comprehension. The research questions were: (a) *To what extent is a poor reader in English L2 also a poor reader in Norwegian L1?* (b) *How do gender and study programme relate to the students' L1 and L2 reading scores?* and (c) *To what extent is there a statistical relationship between their L2 reading scores and the variables L1 reading, gender, and study programme?* In this article, we used scores from two national reading tests in Year 11, one in the L1 and one in the L2. Conducting this analysis enabled us to determine the proficiency of the students who were interviewed in Article II, more specifically to identify who were the poor and the more proficient readers. The article is under review at the *Journal for Research in Reading* (JRIR):

Brevik, L.M., Olsen, R.V., & Hellekjær, G.O. (under review). The complexity of second language reading: Investigating the relationship between L1 and L2 using upper secondary level national reading tests.

Together, the three articles move from the teacher perspective to the student perspective. In addition, the studies examined the relationship between reading comprehension in the L1 and the L2, first by comparing reading instruction in L1 and L2 in Article I, then analysing L2 reading in more depth in Article II, and finally analysing statistically the relationship between L1 and L2 reading comprehension in Article III.

### **1.3 The structure of the extended abstract**

This thesis comprises two parts, the extended abstract (Part I) and three articles (Part II). Following this introductory chapter, the extended abstract includes four more chapters.

*Chapter 2* is a review of reading research, both internationally and in Norway. I first discuss research on reading comprehension in the L1, then the relationship between L1 and L2 reading comprehension, reading strategies, and reading strategy instruction. I end this chapter by commenting on the need for further research.

In *Chapter 3*, I discuss the theoretical and conceptual framing I have employed in this thesis, in which I draw primarily on Vygotskian thinking on the importance of tools for learning, and integrate this framing with reading comprehension theories.

*Chapter 4* is a presentation of my research design, in which I argue for the appropriateness of the mixed methods approach in my thesis and discuss the methodological choices I have made. In this chapter, I explain the research questions, participants, data, and the analyses within and across the articles. Finally, I address research credibility, including discussions of reliability, validity, and ethical concerns.

In *Chapter 5*, I first provide a summary of the three articles in this thesis, including the main findings and discussions of these. I then point to empirical, theoretical, and methodological contributions. Finally, I provide brief concluding remarks, where I sketch some implications for research and educational environments.

## 2 Review of reading research

The aim of this review chapter is to contextualise the overarching topic of my thesis, namely *practices involved in developing reading comprehension in English as the L2 in Norwegian upper secondary school*. As each of the three articles in this thesis contains review sections, the present chapter is intended to combine and extend these. I have chosen to do a two-fold review that enables me to situate the findings presented in this thesis and its contribution within an international as well as a Norwegian context.

### 2.1 International reading research

In the *Handbook of Reading Research, Volume IV*, the editors commented on the diversity within the field of reading research since the turn of the century:

The purposes of reading research over the last 15 years have varied from finding ways in which instruction and learning can become more effective to examining the cognitive processes that underpin acts of reading to unpacking the social and cultural practices that motivate and mediate literate practice and learning. (Kamil et al., 2011, p. xiii)

In this landscape of reading research, which has exploded since Huey in 1908 provided what is known as the first review of reading research, I have found it immensely challenging to choose what to include. Some choices had to be made. First, since my research focuses on upper secondary school, where the students have read in the L2 alongside the L1 for ten years or more, research on the decoding and learning to read was not the main focus. However, as learning to read is inevitably inherent in all later reading of increasingly more demanding disciplinary texts, research on reading comprehension was included. Second, as reading in an L2 shares many characteristics with reading in the L1, I included research on L1 reading comprehension. More challenging was the decision of which combinations of L1 and L2 research to include, as the linguistic distance between languages matters (Koda, 2007). I have therefore chosen to narrow my scope to studies where English is either the L1 or the L2.

Researchers have used different terms when reporting their research, two of these being “reading comprehension” and “(reading) literacy”. Invariably, studies have referred to one or both; at times, literacy is the more general term, though they are sometimes used interchangeably without being defined, or with reading literacy denoting reading comprehension. While I have chosen to use *reading comprehension* when referring to my own research, in this review I include the terms as used in each referred work. I also find the

distinction between reading research, review of reading research, and theory emerged from research to be blurred, and have therefore chosen to use highly regarded syntheses and analyses from all such sources as long as the link to research on reading comprehension is clearly articulated.

In the following, I therefore draw primarily on these sources: (a) volume IV of the *Handbook of Reading Research* (Kamil, Pearson, Moje, & Afflerbach, 2011), (b) seminal reviews appearing in national and international initiatives (e.g. National Reading Panel, PISA, and RAND), (c) books in the field of L1 reading (e.g. Block & Parris, 2008) and L2 reading (e.g. Alderson et al., 2015; Bernhardt, 2011; Grabe, 2009; Koda, 2005), and (d) specific journals specialising in reading research (e.g. *Reading Research Quarterly* and *Reading in a Foreign Language*). From these sources, I also worked my way back to individual research articles that were relevant for the overarching topic of my thesis.

### 2.1.1 Reading comprehension in the L1

Reading comprehension is a cognitive as well as a social process that involves extracting and constructing meaning (Bernhardt, 2011; Duke et al., 2011; Koda, 2007). In the 50th anniversary issue of *Reading Research Quarterly*, Reutzel and Mohr (2014) pointed out that comprehension have comprised the second most published research topic in the journal over the past half century. Building on research since the 1970s, a commonly used definition of reading comprehension is “the process of simultaneously extracting and constructing meaning through interaction and involvement with written language” (RAND, 2002, p. 11). The RAND definition aligns with the more recent PISA definition, which added engagement as an integral part by establishing that “reading literacy is 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” (OECD, 2010, p. 23). The latter definition is intended to be used in PISA 2015 as well, and has been influenced by current reading research, which emphasises the interactive nature of reading, models of comprehension, and performance in solving reading tasks. Together, these definitions draw on individual, social, and cultural aspects of the comprehension process.

This construction of meaning requires interaction between the *reader* who is doing the comprehending, the *text* that is to be comprehended, and the *activity* in which comprehension is a part, occurring within a *sociocultural environment* (RAND, 2002). For example in Kintsch’s (1998) Construction-Integration model, two concepts interact in forming a reader’s comprehension; the textbase, which is an understanding of meaning in the text, and the

situation model, which is a result of how the reader makes sense of the textbase. Constructing a situation model is central to reading comprehension, where the reader uses prior knowledge and the context in her comprehension of the text at hand. According to Koda (2007), Kintsch's model offers an explanation of why poor readers experience "incomplete understanding and misinterpretation; namely their local-meaning construction skills are sufficiently strong to create necessary constraints, thus permitting irrelevant information to remain active during the integration process" (Koda, 2007, pp. 9–10).

Together, the above descriptions of reading comprehension propose a combination of lower and higher levels of processing information; specifically, they describe an interactive process between bottom-up processes of local meaning construction and the top-down process of more global text representation (Alderson, 2000; Grabe, 2009; Koda, 2005). The low-level, bottom-up process involves recognising the written words in the text along with relevant grammatical information, which in turn hinges upon automatic word recognition (decoding words and relating print to sound). This process provides the basis for top-down, higher-level processing, i.e. the creation of meaning in an interactive process between the information in the text being read, the reader's knowledge of language and content, and the reader's processing skills and strategies (Alderson, 2000; Bernhardt, 2011; Grabe, 2009). Thus, readers are not exclusively bottom-up or top-down readers; rather, they are always bottom-up *and* top-down readers at the same time (Grabe, 2009; Kintsch, 1998; Koda, 2007).

It is interesting to note that affective factors also enter into the equation, as these attributes vary considerably among readers and within readers, depending on the task and the reading activity or situation:

Across more than a century, records of reading research reveal evolving notions of the reader. Reading, from a research perspective, has been described as a response to print, a processing of information, and a set of strategies and skills that yield meaning. Reading also involves motivations, self-concept, and prior experiences that can reinforce or diminish the reading experience. Reading is situated, an endlessly varied phenomenon involving individual readers of unique experience, involving texts and tasks that vary in terms of goals, difficulty and time. (Kamil et al., 2011, p. xxii)

In this quote, Kamil et al. (2011) emphasised the role of the reader and the combination of knowledge and experience when constructing meaning from text, as well as metacognitive awareness, which I will return to in Section 2.1.3. These aspects are also relevant for the relationship between L1 and L2 reading comprehension.



### 2.1.2 The relationship between L1 and L2 reading comprehension

Koda (2007) has explained that, unlike in the L1, L2 reading involves two languages, and for this reason is cross-linguistic. She argued that L1 literacy influences and changes the reading process in the L2. She suggested that a primary focus within L2 reading research should be to get a clearer understanding of how the two languages interact. Indeed, research has indicated a structural relation between L1 and L2 reading comprehension (Brantmeier et al., 2014; Grabe, 2009; Jiang, 2011). As Brantmeier (2004) has pointed out, “though interactive models of L2 reading emphasize different components involved in the process, all models include and underscore the importance of comprehension” (p. 52).

Over 30 years ago, Alderson (1984) asked whether L2 reading difficulties were due to a reading problem or a language problem. Recently, Alderson et al. (2015, p. 71) answered that most research into this question has indeed shown L2 reading difficulties to be more of a language problem. They argued that research has indicated there is a “threshold” of L2 proficiency that a reader first has to reach and surpass. Below this threshold, L2 knowledge is essential to develop L2 reading comprehension, while beyond the threshold, L1 reading skills and strategies can transfer to the L2 and to some extent compensate for gaps in L2 knowledge (see also Koda, 2007). In line with the textbase and situation model, the threshold is dependent on the text and the individual reader. This distinction echoes Cummins’s (2000) Linguistic Threshold Hypothesis, suggesting that if a reader’s L2 proficiency falls below a certain level, the transfer of reading skills and strategies from the L1 to the L2 is prevented, even if the student is a good reader in the L1. However, the threshold is not absolute; the more demanding the task, the higher the linguistic threshold (Alderson, 2000; Jiang, 2011).

Another view on this dual-language system is the compensatory hypothesis, which states that students transfer reading skills between the L1 and the L2 *when necessary*. This explanation indicates that reading variables interact and that when readers experience comprehension problems, a weakness in one area might be compensated for by knowledge from another (Stanovich, 1980). Based on research and Stanovich’s (1980) hypothesis, Bernhardt (2011) suggested in her *Compensatory model of second language reading* that L1 literacy (e.g. vocabulary, text structure) accounts for 20% of L2 literacy, while L2 language knowledge (e.g. grammatical form, L1/L2 linguistic distance) accounts for 30% of L2 literacy, and that the remaining 50% relates to an unexplained variance (e.g. engagement, domain knowledge, comprehension strategies). According to Bernhardt (2011), “Readers who struggle in their first language will probably also struggle in their second. Readers who have an array of strategies in their arsenal do not need to be re-taught those strategies” (p. 38).

Several studies have supported Bernhardt's model, but with great variation in the levels of explained variance between the L1 and the L2. For example, Carrell (1991) studied two groups; one with English L2 and Spanish L1, where L1 literacy was the greater predictor, and the other with English L1 and Spanish L2, where L2 language knowledge had greater predictive power. Similar to the latter group, Bernhardt and Kamil (1995) found Spanish L2 language knowledge to explain 30%–38% of the variance in L2 literacy, with English L1 literacy explaining 10%–16%. In general, research has found L2 language knowledge to explain more than L1 literacy on L2 literacy (Jiang, 2011). Lee and Schallert (1997) found L2 language knowledge to explain 57% of English L2 literacy and Korean L1 literacy to explain only 3%. Yamashita (2002) found an explained variance of 40% across Japanese L1 and English L2, also with L2 language knowledge explaining more than L1 literacy (Grabe, 2009, pp. 147–148). Similarly, Brantmeier, van Bishop, Yu, and Anderson (2012) found L2 language knowledge to explain more of the participants' English L2 literacy than did their Chinese L1 literacy. In line with Koda (2007), these studies indicated that the explained variance between the L1 and the L2 varies with the linguistic distance. As Norwegian and English are both Germanic languages, they are closer linguistically than the languages above.

Finally, Brantmeier (2006) commented on how the unexplained variance in Bernhardt's model incorporates dimensions yet to be explained, interest being one. Brantmeier (2006) emphasised how prior L2 research has “asserted that a positive relationship exists between personal interest, prior knowledge and comprehension” (p. 91), and provided a construct of interest for L2 reading. This is in line with the affective factors mentioned in Section 2.1.1, in which the role of reading strategies to develop reading comprehension was also emphasised.

### **2.1.3 Reading comprehension strategies (L1-L2)**

Reading comprehension involves the use of skills and strategies (OECD, 2010; RAND, 2002). While the use of skills is automatic, strategy use is under the conscious control of the reader (Afflerbach, Pearson, & Paris, 2008; McNamara, 2011; Pearson & Cervetti, 2013). Reading strategies have been defined as “the comprehension processes that readers use in order to make sense of what they read” (Brantmeier, 2002, p. 1). In these processes, strategies are used as powerful tools for reading comprehension (Garcia, Pearson, Taylor, Bauer, & Stahl, 2011).

Since research into strategies began in the 1970s, taxonomies of strategies have emerged. These have traditionally been divided into metacognitive, cognitive, and affective

strategies (Pressley & Afflerbach, 1995). However, no strategies are metacognitive by nature. As a result, contrasting metacognitive and cognitive strategies has proven problematic, and instead terms such as *metacognition* (OECD, 2010) and *metacognitive awareness* (Koda, 2005; McNamara & Magliano, 2009) have been used. These denote understanding of how one thinks and uses cognitive strategies. Metacognitive awareness relates to how a reader uses strategies as tools, for example when using *contextual reading* to understand unknown words in a text (Grabe, 2009), or when using *questioning* as a tool to investigate the meaning conveyed in a text (Pearson & Cervetti, 2013). Proficient L1 and L2 readers engage in strategic reading by drawing on cognitive and metacognitive resources (Bunch et al., 2014) to “continuously adjust their reading behaviours to accommodate text difficulty, task demands, and other contextual variables” (Koda, 2005, p. 294). This view is in line with McNamara (2011), who described reading strategy use as consciously applied procedural knowledge that students learn to use critically as tools for deep and long-lasting text comprehension.

In 2000, the U.S. National Reading Panel recognised that the use of various strategies improved reading comprehension. The panel defined reading comprehension strategies as procedures and routines that readers themselves apply across a number of different texts, such as comprehension monitoring, cooperative learning, graphic organisers, story structure, question answering, question generation, and summarisation (Pearson & Cervetti, 2013, p. 530). Other examples would be setting purposes, adjusting how one reads to suit the reading purpose, such as skimming to understand main points in a text or scanning to find particular details, activating prior knowledge, previewing and predicting, active listening, careful (close) reading, making inferences, searching for key words, underlining/highlighting, visualising, summarising, relating to study, and discussing with peers (e.g. Block & Duffy, 2008; Duke et al., 2011; Fisher & Frey, 2008; Grabe, 2009; OECD, 2010).

Brantmeier (2002) has pointed out that a plethora of studies have examined the reading strategies that L2 readers apply to comprehend a text. Grabe’s (2009) summary of research on reading strategies over the past two decades revealed that the same strategies to a large extent are used in the L2 as in the L1. He further found that all readers use many strategies, and while good and poor readers seem to use the same types of strategies, good readers use these more effectively than do the poor readers (see also Bernhardt, 2011; Bunch et al., 2014; Koda, 2005; Parris & Block, 2008). Researchers have further argued that using strategies in the L2 requires readers to engage with texts (Garcia et al., 2011). Investigating this phenomenon, Alderson et al. (2015) have commented that while all readers experience comprehension problems at some point, they need to use effective strategies to monitor and

repair their developing L2 comprehension. One way of encouraging more effective use of strategies have been to make these “transparent” and “transportable” in order to help students see why a particular strategy is a powerful tool to enhance comprehension in the subjects, especially in secondary school (Lee & Spratley, 2010; Moje, 2008, 2010; Parris & Block, 2008; Shanahan & Shanahan, 2008).

Fisher and Frey (2008) have expressed concern that strategy use has become decontextualised, removed from the reading activities in the classroom. Similarly, Pearson and Cervetti (2013) argued that “strategy use has sometimes become an end unto itself, rather than a set of tools for achieving and repairing comprehension” (p. 531), pointing to the risk that when strategies are used, they are used due to teacher or task demand rather than being applied independently to achieve comprehension. If so, the strategies become tools to be tried out, rather than tools used to close the gap between what students comprehend and what they are expected to comprehend. Wilkinson and Son (2011) noted that “it is not the strategies *per se* that are responsible for improvement in students’ comprehension” (p. 366, original emphasis). For students to be able to use strategies effectively, Pearson (2011) argued that “students must acquire ‘insider’ knowledge about why and how we use strategies” (p. 251), which holds implications for reading strategy instruction.

#### 2.1.4 Reading strategy instruction (L1-L2)

Research has confirmed that strategy instruction improves reading comprehension (e.g. Bernhardt, 2011; Block & Duffy, 2008; Duke et al., 2011; Grabe, 2009; Kamil et al., 2011; NRP, 2000). Pressley (2008) also emphasised the importance of reading strategy instruction, bearing in mind that “very effective readers actually use a small repertoire of strategies” (p. 407). Further, Pearson and Cervetti (2013) have commented that, although there has been broad consensus for more than two decades that strategies should be taught, “it may simply be that strategic (focused and intentional) behaviour in general, rather than a set of particular strategies, matters most” (p. 531).

Wilkinson and Son (2011, pp. 362–364) referred to Pressley’s (1998) characterisation of research on teaching comprehension strategies in terms of three waves. The first wave of studies (1970s and early 1980s) was characterised by the teaching of single strategies, while the second wave (1980s) focused on teaching multiple strategies. The third wave (from 1989) focused on a more flexible approach to the teaching of multiple strategies. They concluded that, while researchers have undoubtedly argued the utility of teaching students to use a small repertoire of strategies in combination, no research has yet revealed the ideal set of strategies

or the ideal number of strategies. In 2004, Pressley pointed out that the field of reading research had developed from seeing strategies as teaching tools, to seeing strategies as learning tools that can enhance student comprehension.

Thus, in line with developments in strategy instruction over the last decade, teaching strategies in combination rather than as a series of single strategies is recommended (Block & Duffy, 2008; Wilkinson & Son, 2011). Researchers have also voiced their concern about strategy instruction running the risk of becoming too mechanical (Wilkinson & Son, 2011). As Pearson (2011) cautioned, “when strategy instruction becomes too generic and abstract, too ‘isolated’ from the goal of acquiring knowledge and insight, it is in danger of becoming an end unto itself” (p. 251). Through guided strategy instruction, teachers have demonstrated how students can overcome reading comprehension problems using a small repertoire of reading strategies flexibly (e.g. Block & Duffy, 2008; Duke et al., 2011; Fisher & Frey, 2008).

One model of comprehension instruction supported by research is the *Gradual release of responsibility model*, which has been refined over time (Duke & Pearson, 2002; Duke et al., 2011; Pearson, 2011; Pearson & Gallagher, 1983). The model describes how the responsibility for strategy use ideally transfers from the teacher to the student in five steps: (a) naming and describing the strategy – why, when, and how it should be used; (b) modelling the strategy in action – either by teacher or student, or both; (c) using the strategy collaboratively – in a sort of group think-aloud; (d) guided practice using the strategy with gradual release of responsibility; and (e) using the strategy independently, with no teacher guidance, individually or in small student-led groups (Pearson & Cervetti, 2013, pp. 530–531). However, Pearson (2011) stated explicitly that this is not necessarily a linear process:

But it does *not* mean, as many infer, that we always begin a sequence with modelling, then moving to guided practice, and finally independent practice. We could begin a sequence by asking students to “try it on their own,” offering feedback and assistance as students demonstrate the need for it. (Pearson, 2011, p. 248, original emphasis)

Applying the notion of strategic reading not only across languages, but also across subjects, Moje (2010) suggested that teachers need to be open to include reading as a basic skill in their subject areas. She has argued that content teachers all too often are reluctant to include reading comprehension instruction into their subjects, expressing the view that it should be the responsibility of teachers in the language arts subjects. Based on this view, it is critical for teachers to demonstrate instructional flexibility. One way of doing this is by

combining subject matter with reading strategies as tools for learning to develop student comprehension in the disciplines (Bernhardt, 2011; Moje, 2008, 2010; Moje, Stockdill, Kim, & Kim, 2011). This is relevant in my thesis, not least because such instruction is expected from English teachers according to the Knowledge Promotion (KD, 2006, 2013).

Pressley (2008) has stated the need to conduct research on the professional development of comprehension teachers because researchers have had good reason to believe that strategy instruction does not necessarily take place in all-too-many classrooms (Grossman et al., 2010; McNamara, 2011; McNamara & Magliano, 2009; Moje, 2008; Parris & Block, 2008; Wilkinson & Son, 2011). Other scholars have 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). However, Alderson et al. (2015) argued that strategies for reading have been extensively studied in reading instruction, while the "in-depth exploration of learners' reasons for a failure or an adequate application of these strategies" is lacking (p. 17). In the following section, I discuss these aspects of reading research in the Norwegian educational context.

## **2.2 Reading research in the Norwegian educational context**

Limited empirical knowledge exists about how teachers in secondary school in Norway conceptualise the task of making better readers. On the one hand, evaluations of the Knowledge Promotion have shown that teachers report reading to be the basic skill they address the most (Aasen et al., 2012; Olsen et al., 2012; Ottesen & Møller, 2010). On the other, research has offered little information about *how* reading instruction is conducted in the classroom, and whether such instruction includes the teaching of reading strategies (Aasen et al., 2012). Existing reading research in secondary school is scarce, and both in the L1 and the L2, it is dominated by quantitative studies focusing on reading proficiency.

### **2.2.1 Reading proficiency (L1-L2)**

As mentioned in Chapter 1, all secondary school students participate in national reading comprehension tests in the L1 and the L2. The lower secondary school (Year 8) evaluates students at five different proficiency levels, and around 40% of the students have performed to the middle level in the L1 and the L2 (UDIR, 2013, 2014). Girls have achieved better results than boys in the L1 test, while no difference has been detected between genders in the L2 test since 2012 (UDIR, 2013, 2014). The reduced gender gap is a positive development, not least compared to the reading assessment *English in Europe* in 2002, in which Norway

was ranked second among the eight participating countries (Bonnet, 2002), in which a sample of 15-year-old students participated (Year 10). The results showed a large significant difference for Norway in favour of girls (Ibsen, 2004, pp. 144–145).

Recent research has shown that L2 reading skills have improved markedly among Norwegian secondary upper school students (Hellekjær, 2008; Hellekjær & Hopfenbeck, 2012). First, Hellekjær (2008) studied results from the International English Language Testing System (IELTS) Academic Reading Module among two groups of students in upper secondary school. He found that, while two-thirds of the students in ordinary English L2 courses did not achieve the baseline Band 6 score, two-thirds of students attending a Content and Language Integrated Learning (CLIL) course in which social science was taught in L2 achieved a Band 6 score or better. He concluded that reading was largely neglected in ordinary English classes and that students did not learn to adjust how they read to suit the reading purpose.

Later, Hellekjær and Hopfenbeck (2012) used the same test for a repeat study, and found that the reading proficiency among upper secondary school students had improved from 2002 to 2011. Including a questionnaire on these students' strategy use revealed that those who used deeper-level processing strategies, e.g. elaboration strategies, displayed better comprehension than those who used superficial strategies, e.g. memorisation strategies. To shed further light on these readers' proficiency, some of the good readers participated in individual interviews, which indicated a clear metacognitive awareness concerning their strategy use. The study concluded that the Knowledge Promotion, with its focus on reading skills and strategies, might explain the improvement in reading proficiency. This finding is in line with the above mentioned evaluations of the Knowledge Promotion (Aasen et al., 2012; Olsen et al., 2012; Ottesen & Møller, 2010).

Skogen (2013), in her master thesis, built on Hellekjær's 2008 study and examined whether lower secondary students differed in their reading proficiency and strategy use. Four student groups participated, all attending ordinary English L2 courses, with two groups also participating in a CLIL teaching project. The findings indicated that the groups differed with regard to reading proficiency, motivation for reading, and reading strategy use, with one of the CLIL groups scoring markedly higher on the IELTS test and in their use of reading strategies when completing this test. She also found the teachers to differ regarding their teaching of reading comprehension and reading strategies, and argued for the importance of the extensive teaching of reading strategies. Merchan's (2010) master thesis quantitatively investigated upper secondary students' perspectives on reading strategies, using a survey at

seven schools. She found that, although the students saw themselves as active readers, they reported using reading strategies too seldom for it to develop their reading comprehension. She concluded that students need to use a more varied repertoire of reading strategies on a regular basis in order to meet the requirements in the English subject curriculum.

While all these studies identified reading proficiency either in the L1 or the L2, none of them examined whether a statistical relationship existed across the two languages, as has been done in the international studies discussed in Section 2.1. This suggests an area of further research.

### 2.2.2 Reading instruction and strategy use (L1-L2)

Lower results than desired on the PISA reading test, combined with the lack of knowledge about reading instruction and classroom practices, initiated the PISA+ project (Klette, 2009). PISA+ investigated L1 reading in lower secondary school, collecting video data from classroom instruction and teacher interviews in 2004 and 2005 and resulting in several studies (e.g. Anmarkrud, 2009; Anmarkrud & Bråten, 2012; Bråten & Anmarkrud, 2013). These studies concluded that strategies instruction may make a difference in helping students develop their reading comprehension, and articulated a need for further studies on naturally occurring strategy instruction, as opposed to intervention studies. While PISA+ was related to the former national curriculum, a similar project related to the present curriculum, Linking Instruction and Student Achievement (LISA), has recently been initiated. The aim is to collect video data from classroom practices of L1 reading in lower secondary school and link these to results from the national L1 reading tests (Klette, 2013). However, no similar studies have been conducted or initiated in English L2 in Norway.

To the best of my knowledge, the only existing research addressing L2 reading instruction and reading strategies in secondary school, in addition to Skogen (2013) above, are four qualitative master theses; two from lower secondary (Bakke, 2010; Sibbern, 2013) and two from upper secondary school (Faye-Schjøll, 2009; Johansen, 2013). Based on teacher interviews, these studies found that reading was not a prioritised activity in the English L2 classrooms. Bakke (2010) found that, while most of the teachers acknowledged the importance of reading, they did not teach reading systematically or consistently. She argued that the public debate after the implementation of the Knowledge Promotion contributed to raising the awareness of the importance of reading, but failed to suggest how such instruction could be effectively carried out in the classroom. Similarly, Sibbern (2013) interviewed both teachers and school leaders at four lower secondary schools, examining whether results from



the national L2 test were used in classroom teaching of comprehension. She found that none of the schools used the results to develop their students as L2 readers. The study concluded that more work needs to be done to make certain that the students benefit from taking this test.

In upper secondary school, Faye-Schjøll (2009) argued that the lack of focus on reading instruction was due to inadequate knowledge of the importance of reading and reading strategies for developing students' comprehension. In contrast, Johansen's (2013) study investigated reading instruction and strategy use in two classes, one in general programmes and one in vocational programmes. She combined student interviews, field notes from classroom observations, and written teacher narratives, with written L2 exams and textbooks to see how reading strategies were presented there. She found a strong focus on and knowledge about reading strategies, especially in the vocational programmes. Johansen concluded that reading strategy instruction seemed to be more important in upper secondary school than previously assumed.

### **2.3 Short summary**

To sum up, the present review of national and international research has contextualised and identified a need for L2 reading research in upper secondary schools in Norway. There is a need for research that (a) attempts to move beyond the cognitive perspective on reading proficiency, (b) includes both teacher and student perspectives, and (c) includes the relationship between reading in the L1 and the L2. In other words, the present review suggests that a theoretical combination of cognitive and sociocultural aspects is appropriate, and identifies a need for more complex methods of data collection.

Based on these identified needs for further research, I have defined the following overarching aim of my thesis: *to investigate practices involved in developing reading comprehension in English as the L2 in Norwegian upper secondary school*. As a result, my PhD project is constructed as an empirically based study investigating qualitatively how teachers design and teach reading comprehension in the L1 and the L2, based on their self-reported perspectives (Article I) as well as through classroom observations (Article II). It further means investigating how students participate in reading activities in the L2 classroom, and how they perceive such activities in terms of developing their reading comprehension in the L2 (Article II). Finally, it means contextualising the study by quantitatively investigating the students' reading proficiency across the L1 and the L2 (Article III). In the following, I discuss how I have framed my research theoretically (Chapter 3) and methodologically (Chapter 4).

### 3 Theoretical framing

In this chapter, I discuss the general theoretical and conceptual framing of my thesis which, as mentioned in Chapter 1, is that reading comprehension and reading instruction in Norwegian upper secondary school take place within a sociocultural environment. I have therefore come to appreciate that a key theoretical standpoint in my work is the sociocultural nature of teachers' reading instruction and students' use of reading strategies as tools in their development as L2 readers.

My perception of the theories informing this study developed during my work on this thesis. Initially, the cognitive nature of reading comprehension made me design my study very much from a perspective of individual cognition. However, designing the TPD course reported in Article I alerted me to the importance of seeing the reading strategies that were shared with the teachers as individual *and* cultural tools that they could reflect on and use in their own teaching, suggesting that the strategies are imbued with the knowledge and expectations afforded by the cultures and practices in which they are created and deployed. Further into my PhD project, I recognised similar processes when the teachers shared the reading strategies with their students and used them collectively in reading activities in the environment of the classroom, as I have described in Article II. Therefore, the conceptual framing explained in this chapter draws primarily on Vygotskian thinking on the importance of tools for learning in the dialectic of person and culture. This approach is influenced by the legacy of Vygotsky (e.g. Vygotsky, 1981, 1986, 1987, 1997), as well as later interpreters such as Claxton (2007), Daniels (2005, 2008), Derry (2008, 2013), and Edwards (2014, 2015, in press).

In this framing of reading instruction and reading comprehension in English L2, I start by focusing on the students as active readers and the teachers supporting such readers, and then relate these to the notion of reading strategies as tools to enhance comprehension. In the final section, I bring it all together by considering reading comprehension as a process that moves from the internalisation of reading strategies as tools to the externalisation of how reading comprehension manifests itself for the readers, a process ideally developing strategic reading. The theoretical concepts for my thesis that relate to a Vygotskian legacy are; the adolescent L2 reader as a Vygotskian learner (3.1), the L2 teacher in the Vygotskian classroom (3.2), reading strategies as tools for developing reading comprehension (3.3), and internalisation and externalisation of reading comprehension(3.4).

### 3.1 The adolescent L2 reader as a Vygotskian learner

Vygotsky's learner is active, ideally propelling herself forward in a process of learning and development (Edwards, 2015). These learners are not passive receivers of information (Daniels, 2005; Derry, 2008, 2013), but actively engage with the task trying to make sense personally and culturally. Participating actively in the learning environment enables Vygotsky's learner to relate public meaning-making in the classroom to his or her individual consciousness and to make personal connections between the task at hand and other topics or subjects within and beyond the classroom and so reposition herself in these practices.

Daniels (2008) described how Vygotsky used the example of the second language learner, suggesting that conscious awareness of linguistic forms in the L2 increases the learner's abstract understanding of grammar as a general concept that can be applied also in the L1:

Learning a second language through a structured "scientific approach" provided tools for making choices in the use of a first-language. The argument was that instruction introduces children to a scientific way of thinking. Tasks and actions that would be carried out unreflectively could be brought into the child's reflective gaze. The social situation of schooling, with its distinctive approach to instruction, was seen to facilitate a restructuring influence on development. (Daniels, 2008, p. 41)

This example was echoed by Verhoeven (2011), who held that "language transfer can occur from not only L1 to L2 but also from L2 to L1" (p. 664). These descriptions illustrate findings in Article III, which showed how the students transfer reading comprehension between the L1 and the L2. These descriptions further illustrated findings in Article II, where the L2 students expressed very different notions of relating what they learnt in the L2 lessons with their further reading development. While the students in the general studies classes primarily related their use of reading strategies to activities inside the classroom, e.g. by meeting task demands, the vocational students expressed that they saw personal purposes for using reading strategies in the L2 lesson because such usage helped them understand texts related to their vocational study and what to do in the workshop. The vocational students revealed that using strategies as tools helped them become better readers – and better workers.

This finding illustrates the point made by Derry (2008) that the legacy of Vygotsky is not to see abstraction and generalisation as ends in themselves. She argued that Vygotsky did not intend us to see learning as the individual learner's movement from a personal contextualised understanding of everyday experiences to an abstract, decontextualised,

general, and situation-free understanding to be, by extension, assessed in examinations emphasising recall. Instead, during the learning process, the reader uses concepts as tools in activities and endeavours to make sense of concepts and ideas in the world in a continuous movement between the personal and the cultural.

This approach can be seen as a way of accessing meaning and gaining familiarity with a concept presented in one text with meaning in another and make use of these concepts in relation to historically and contemporary meanings embedded in the school practices. At the core of this notion is how the L2 reader responds to task demands – demands set, for example, in textbooks, by the teacher, or by the learner herself.

To sum up, Vygotsky emphasised the dialectic relations between the personal and the cultural. These relations are a matter of understanding how the individual learners act, being shaped by the practices they inhabit, but also shaping them. Nevertheless, being an active learner in a Vygotskian sense does not mean taking sole responsibility for these learning processes and discovering meanings for themselves (Daniels, 2005, 2008; Derry, 2008). The teacher in the Vygotskian classroom carefully designs a learning environment where students are actively involved, enabling them by giving them the tools to use and creating an environment where they can use the tools in meaningful ways (Claxton, 2007).

### **3.2 The L2 teacher in the Vygotskian classroom**

As described in Chapter 2, instruction of reading comprehension has been influenced by understandings of the role of social interaction in learning (Grabe, 2009), where strategies are initially modelled by the teacher, and gradually applied by the autonomous learner (Duke & Pearson, 2002). Classrooms which draw on Vygotsky's legacy depart from the idea of learning as a one-way process from teacher input to learner output. The teacher in the Vygotskian classroom does not provide simple transmission of information (Daniels, 2005, 2008; Derry, 2008), nor mindless drilling (Edwards, 2014), which would be very different from the idea of promoting active student participation, as seen in the following quotations:

Direct instruction in concepts is impossible. It is pedagogically fruitless. The teacher who attempts to use the approach achieves nothing but a mindless learning of words. (Vygotsky, 1987, p. 170)

The teacher ... has to become the director of the social environment which, moreover, is the only educational factor. When he acts like a simple pump, filling up the students with knowledge, there he can be replaced with no trouble at all by a textbook, by a dictionary, by a map, by a nature walk.... When he is simply setting forth ready-prepared bits and pieces of knowledge, there he has ceased being a teacher. (Vygotsky 1997, p. 339)

As suggested by these quotations, Vygotsky’s definition of teaching is enigmatic, based on a description of what teaching is not. But following the Vygotskian line, Claxton (2007) has elaborated on the teacher in the Vygotskian classroom, arguing that the teacher’s role is to promote active learners who are interested in learning and who pick up their mental habits from people around them, for example peers or their teachers. These teachers “are themselves paragons of learning, rather than of knowing. It becomes the teacher’s role to be continually saying ‘I don’t know’, ‘Oops!’, ‘I didn’t expect that to happen’, ‘Now I wonder why?’ and so on” (Claxton, 2007, p. 128), to engage in a dialogue with the learners about their learning process. To this end, Vygotsky (1987) explained that instruction needs to be in advance of development, emphasising the teacher’s responsibilities in helping the learners develop and regulate their learning, and to see that making mistakes is part of the active learning process (Edwards, 2014). Reflecting Vygotsky’s dual emphasis on learning and development, Claxton (2007) suggested that the teacher in the Vygotskian classroom teaches to expand learning capacity in the students.

Although I did not draw explicitly on Vygotsky in Article I, the participating teachers both in Articles I and II can be seen to resemble the teacher in the Vygotskian classroom in the sense of being directors of learning environments, orchestrating environments where they offered reading comprehension strategies as tools to expand their students’ learning capacity to understand subject matter in English. One way of enabling the active reader to develop their reading comprehension in the L2 is to orchestrate learning situations, as emphasised in the Vygotsky-based *Quadrant model* shown as Figure 3A (Edwards, 2015). This model of a teaching and learning sequence aims at encouraging learners to engage with ideas in ways which reflect the psychological aspects of using strategies as tools.

<p><b>4</b> Demonstration of grasp of key concepts and ways of enquiring through summative assessment</p>	<p><b>1</b> Introduction of key concepts and modelling of ways of engaging with key concepts</p>
<p><b>3</b> More open tasks which enable learners to apply key concepts and ways of enquiring</p>	<p><b>2</b> Tightly structured tasks which demand engagement with key concepts and ways of enquiring</p>

**Figure 3A.** *The Quadrant model: task sequencing to promote learning (Edwards, 2015, p. 21).*

The *Quadrant model* illustrates how learners are first introduced to new concepts or ways of working, through teacher instruction and modelling and begin to engage with the ideas through guided instruction (quadrant 1). Then they move towards independent use – first through tightly structured tasks (quadrant 2), and later through more open tasks (quadrant 3). Finally, they display their knowledge in some form of summatively assessed task (quadrant 4). The sequence is meant to be a flexible framework, for example learners may move from quadrant 3 to 2 or 1 if additional help is needed. Edwards (2015) also emphasised that formative assessment occurs throughout the process.

I argue that there are implications here for tool use. It is not enough for teachers to produce accounts of learning based on how the students display their knowledge in the public arena of the classroom, as illustrated in quadrants 1 and 4 above. Rather, it is vital to design instruction where the teachers provide key concepts, in terms of reading comprehension strategies as tools for learning. Metacognitively, the strategies allow the students to build on their strengths and weaknesses – to take time in quadrants 2 and 3 to actively engage with task demands, to both acquire and use the strategies as tools, to make mistakes, get stuck and attempt an effort after meaning. This means to create what Claxton (2007) called “potentiating environments”, where “there are plenty of hard, interesting things to do, and it is accepted as normal that everyone regularly gets confused, frustrated and stuck” (p. 125).

Figure 3A shows how it is primarily in quadrants 2 and 3 that students’ use of reading strategies as tools can inform the guidance teachers give. There, the active learners are able to go back and forth flexibly between the quadrants in their reading process, to use the strategies as tools and monitor their own progress, or to be assessed formatively by the teacher – with these activities informing the support they need as they take themselves forward as learners. According to this analysis, learners do not easily move from hearing about reading strategies and then applying them to a text; rather, the potential and relevance of such reading strategies need to be explored. Related to reading comprehension strategy instruction, a similar process is illustrated in the *Gradual release of responsibility model* (Duke & Pearson, 2002), where the responsibility for strategy use transfers from the teacher to the active, independent student (see Section 2.1.4).

In line with Vygotsky and those who followed him (e.g. Claxton, 2007; Daniels, 2005, 2008; Derry, 2008, 2013; Edwards, 2014, 2015, in press), I appreciate that the teachers in the Vygotskian classroom are teachers who expand their students’ learning capacity. In the following, I consider how such teachers can offer their students reading strategies as tools for enhancing the active L2 students’ reading comprehension.

### 3.3 Reading strategies as tools for developing reading comprehension

Seeing reading comprehension strategies as tools for teaching and learning implies the notion of tool in a wider cultural discourse and recognises that tool use is conceptual; specifically, it is not enough to be given a tool, understanding how and why it is used is also important. In the following example, Karpov (2005) referred to Galperin's (1937) study, which confirmed Vygotsky's notion that the use of tools requires mental processes. In this study, the description of a spoon was offered as an individual and cultural tool:

As a result of acquisition of cultural experience, children learn to use tools in accordance with the social meanings of these tools; for example, when using a spoon to eat, a child holds the spoon horizontally at the end of the handle while lifting it from dish to mouth. Thus, the use of the spoon as a cultural tool has changed the whole structure of the child's manual operation, which has come to follow the "logic" of the spoon. The child's adjustment of this manual operation to the "logic" of the cultural tool being mastered requires a special regulation of the tool-mediated operation, which involves, in particular, the child's attending to an adult demonstration of how the tool should be used, self-monitoring his or her own movements, and comparing them with the socially appropriate way to use the tool demonstrated by the adult. (Karpov, 2005, p. 47)

Thus, in the Vygotskian sense, teachers and students might learn to teach or use reading strategies as tools that are culturally valued within education, for example how to summarise important information in a text or how to integrate new textual information with prior knowledge (Block & Duffy, 2008; Duke et al., 2011; Fisher & Frey, 2008; Grabe, 2009). In this sense, learning about a tool, whether spoon or strategy, is not enough; it also needs to be used.

A distinction exists between learning and development within the Vygotskian approach (e.g. Vygotsky, 1981), which gives support to the distinction I wish to make between learning *about* a tool and developing a capacity to *use* a tool, which involves carrying out metacognitive analyses. For Vygotsky, development involved a change in how one positions oneself in relation to the practices one inhabits; while learning can lead to an accumulation of knowledge, it does not necessarily lead to the kind of repositioning where one begins to act differently. Learning about strategies is therefore less powerful than learning to use strategies for reading comprehension as tools to work on texts which, according to the Vygotskian distinction, can involve both learning and development. Learning to use tools also involves the students in learning what the tools can do, alongside developing the capacity to identify when, why, and how they should be used (Pearson & Cervetti, 2013).

Although Vygotsky did not use the term “metacognitive”, he did emphasise reflective awareness and pointed out that, when learners have control over powerful conceptual tools and an awareness of how to use them *as* tools in their learning, they will use them well. This explanation has strong echoes of what is now known as metacognitive awareness. Vygotsky referred to the capacity to use psychological processes such as, in the case of this thesis, the planned selection of tools as the development of “higher mental functions”. These, the learner first experiences collectively, for example between the teacher and the students in the classroom (interpsychological), and then individually (intrapyschological):

Any function in the child’s cultural development appears twice or on two planes. First it appears on the social plane, and then on the psychological plane. First it appears between people as an interpsychological category, and then within the child as an intrapsychological category. (Vygotsky, 1981, p. 163)

Other Vygotskian writers have confirmed this notion of metacognitive awareness in Vygotsky’s work. Claxton (2007) argued that, according to Vygotsky, we pick up mental habits from people around us, indicating a metacognitive awareness of how tools are used first socially or collectively and then individually.

Similar to the child who learns to use the spoon in a culturally mediated and socially appropriate way from “self-monitoring his or her own movements” (Karpov, 2005, p. 47), students profit from monitoring their understanding and using reading strategies, culturally and socially. This process of learning and development is precisely what I proposed in Article I, suggesting that “when students monitor their reading process and recognise 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” (Article I, p. 55). Here, learners ideally understand not only “what” to do, but also “how” and “why” they should do it.

The interconnection of understanding with tool use is central to the Vygotskian analyses of learning. Based on his notion of tools, reading strategies, when used knowledgeably by learners, might be regarded as psychological tools by directing the mind towards comprehension. Vygotsky (1981) considered language to be an example of such a psychological tool (pp. 136–137). This suggests that, when a teacher provides students with the name of a reading strategy as a label which has meaning and purpose, language can function as a psychological tool, enabling the students to talk about and reflect on the strategy in the classroom environment, and then, individually, to connect it to the wider meaning systems in order to be used purposively.



One of the findings in Article I was that the teachers' strategy instruction was made explicit when they used specialised language in terms of descriptions and labels for a set of reading comprehension strategies. From a Vygotskian perspective, using a shared specialised language as a psychological tool during the TPD course enabled the teachers to reflect on and describe their instructions. The process of labelling strategies they already had became a way of connecting the personal sense they made of the strategies with the public meanings that were brought to their attention in the course about why and how they can use strategies as part of their reading instructions. Becoming aware of the strategies they already knew and used, and then seeing these and new strategies offered during the course as tools in their teaching, was then part of their learning, echoing Edwards' description of tool development:

From a Vygotskian perspective learning is evidenced in changing connections between concepts, not simply the accumulation of new ideas; previous understandings do not necessarily get dismissed but may be placed in new configurations which allow for new meanings to be recognised. These meanings reflect and are referenced to the meanings that are currently valued in the learner's social environment. The concepts that arise are then used as tools to work in and on that environment. (Edwards, 2014, p. 53)

As indicated by the quote, in this thesis these processes of labelling seemed to enable the teachers to use both familiar and new reading comprehension strategies more consciously in their teaching, and to explicitly describe their strategies instruction. The function of reading comprehension strategies as conceptual tools was further illustrated in Article II, for example, in an English classroom in vocational studies, where the teacher informed the students that they were going to weld a tractor shovel in the workshop the next day. After projecting a technical drawing of a tractor shovel on the wall (see Article II, Figure 2), the English teacher introduced and modelled the reading comprehension strategy *summarising*. Afterwards, he asked the students first to read the information in the drawing (i.e. various measures and numbers indicating spots to be welded), and then to summarise each step of the welding process. Together, the students wrote the steps as installation instructions on the computer, using *summarising* as a tool in their learning process. At the end of the lesson, the teacher instructed the students to print out and bring the installation instructions with them to the workshop the next day, to use them while welding, and to report back to the teacher in the next English lesson whether the installation instructions had worked as intended.

Although strategies are recognised as tools, with teachers and students talking about when, why, and how to use them, a risk remains that they will never actually use them to enhance comprehension before, during, or after reading. The importance of seeing strategies as means to an end (e.g. Pearson, 2011) highlights the link between the abstract or psychological aspect of comprehension strategies and the concrete manifestation of tool use in the comprehension process.

Thus far, my argument is that tools and concepts are inevitably interconnected, but teaching in schools also involves giving students access to particularly powerful concepts. Vygotsky (1986) distinguished between scientific and everyday concepts, arguing that, while scientific concepts are represented in abstract, organised, hierarchical thinking, everyday concepts are based on practical and situated experience. The purpose of formal education is to enable the learner to connect everyday understandings with the more powerful and publicly validated scientific concepts and then to be able to work with these more refined and tested concepts in concrete activities in the everyday world. This notion of concepts was highlighted by Derry (2008) who, as already explained, argued against the overuse of the term “abstract” and abstraction for its own sake in education, saying that concepts are tools to be used to work on the concrete. The Vygotskian line on pedagogy emphasised mediation, a position that was taken up strongly by Derry (2013). Her argument is that teachers help learners make connections between scientific concepts and their everyday referents through processes of mediation which involve introducing students to cultural tools imbued with the public meanings of scientific concepts.

In this thesis, these cultural tools are reading comprehension strategies. Teachers mediate the potential in tools, such as reading strategies, by modelling their use and then encouraging learners to connect the everyday with the scientific and to use the tools in ways which are meaningful to them (Edwards, 2015; Duke & Pearson, 2002). While any L2 classroom might offer reading strategies for developing comprehension of texts in English, as tools to link the personal and the cultural, some learning environments promote more engaged L2 readers than others. Vygotskian thinking sees cognitive development as underpinned by the relation between mind, individual sense-making, and collective meaning-making, which takes us to the dialectic of internalisation and externalisation.

### 3.4 Internalisation and externalisation of L2 reading comprehension

A key idea in Vygotsky's work was the powerful dialectic between internalisation and externalisation, suggesting that "learning is a matter of taking in the ideas that are valued in a culture and using them to work on and shape that culture" (Edwards, in press). As Edwards argued, "Vygotsky's learner is therefore not simply swept along by the historical practices of the community she enters, but is agentic, using concepts while acting on and shaping those practices" (in press). Thus, in the Vygotskian view of the learning process, the learner is agentic by actively using her internalised comprehension in various forms of activities. Externalisation, in which the learners use their understandings in actions, may happen in classroom situations or in reading assessments, when the learner recognises the opportunity to take action. To be able to do this, the learner needs opportunities to apply and use concepts and tools in various situations, actively and independently, as suggested by Edwards's (2015) *Quadrant model* of task sequencing to promote learning (Figure 3A) or by Duke and Pearson's (2002) *Gradual release of responsibility model* of learning to use reading strategies independently in their reading development (see Section 2.1.4).

Learning about a reading comprehension strategy in terms solely of internalisation, or in Derry's (2008) terms "abstraction", is therefore not enough. In this thesis, students who actively participated in situations where they first internalised and then externalised their use of strategies as tools for learning were helped to expand their learning capacity (Article II). The same appeared to be true for the teachers. In Article I, I argue that the teachers increased their metacognitive awareness of the reading strategies they had already internalised, and also internalised new strategies presented at the TPD course. They then externalised their use of these strategies through reading instruction in their own classes, and by sharing their instructional practices at the end of the TPD course. I further argue in Article II that the teachers externalised their strategies instruction in their English L2 classrooms one year later.

In this sense, reading comprehension strategies are used as tools for teaching, learning, and development, to internalise what is being understood as powerful tools to be used in classroom activities, and so externalised as concrete manifestations of teaching and learning. Learning *about* a reading comprehension strategy will not easily propel the active learner forward as such, while *using* it in the dialectic process of internalisation and externalisation to expand learning capacity might promote and repair reading comprehension.

### **3.5 Short summary**

Understanding both how teachers teach reading comprehension strategies as tools for learning in the classroom and how the students use these tools before, during, and after reading implies a conceptualisation of teachers' instructional support to foster student comprehension. This process of development from internalisation to externalisation is a matter of how tools are used to enhance reading comprehension. In line with the Vygotskian approach to learning, researchers have argued that these concepts and processes should initially be modelled by the teacher and gradually be used by the active learner (e.g. Bernhardt, 2011; Claxton, 2007; Duke & Pearson, 2002; Grabe, 2009; Pearson & Cervetti, 2013).

The purpose for readers, like the upper secondary students in this thesis, using strategies as tools in meaningful ways is embedded in history. Historically, the powerful discourses of education have valued externalisation of learning in classroom activities, as responses to task demand, or in reading assessments, such as standardised reading tests. Using reading strategies as tools to close the gap between what the students understand and what they are expected to understand is vital in this process, first collectively in the classroom environment and then individually in their development as readers (e.g. Grabe, 2009; Pearson & Cervetti, 2013; RAND, 2002). In sum, the Vygotskian framing offers a lens to analyse teachers' reading instruction and students' reading comprehension in the dialectic of the individual, the social, and the culture.

Building up the theoretical framing of my thesis in this chapter and relating this to the review in Chapter 2, in the following chapter, I discuss the main methodological challenges for my project, based on the separate articles.

## 4 Methods and research design

In this chapter, I begin by discussing my use of a mixed methods approach. Next, I provide an account of the methodological design, including samples, data, and analyses, which led to the three articles in my thesis. Finally, I evaluate the research credibility of my thesis by discussing the reliability, validity, and generalisability of the results, as well as ethical aspects regarding participation.

### 4.1 Mixed methods approach

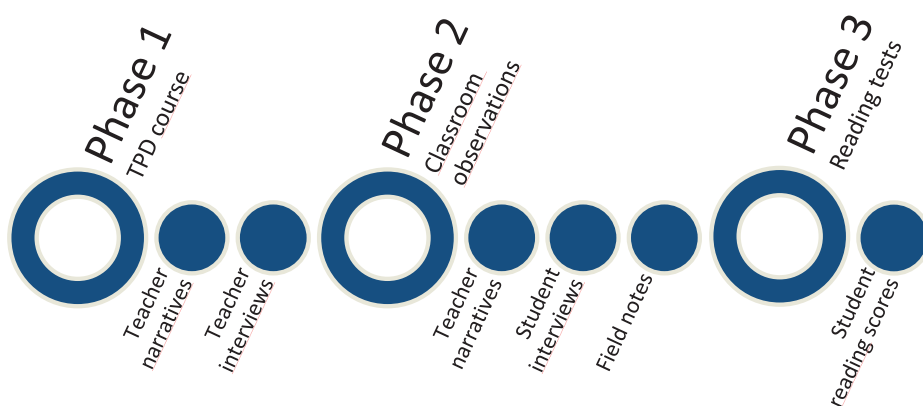
*Mixed methods research* [...] is broadly defined to include research in which more than one paradigmatic or methodological approach, method of data collection, and/or type of analysis strategy is integrated during the course of undertaking the research, regardless of how those approaches or methods might individually be classified, and with a common purpose that goes beyond that which could be achieved with either method alone. (Bazeley & Kemp, 2012, p. 55, original emphasis)

I have chosen a mixed methods approach for my research, in line with Bazeley and Kemp's (2012) definition, to study the qualitative *and* quantitative aspects of practices involved in developing reading comprehension in English L2 in Norwegian upper secondary school. In doing so, I have collected and analysed various types of data, and integrated them to produce findings where the sum is greater than what either approach can provide on its own (Creswell, 2010, 2013). In my thesis, I have combined two qualitative articles and one quantitative, to provide a deeper understanding of reading instruction, reading strategies, and reading proficiency, and to corroborate the findings of my separate articles (e.g. Creswell, 2013; Johnson & Christensen, 2013; Johnson, Onwuegbuzie, & Turner, 2007).

While researchers seem to be increasingly recognising the usefulness of applying more than one methodological approach in research (Bazeley & Kemp, 2012; Creswell & Clark, 2011; Creswell, 2013; Johnson & Christensen, 2013), questions remain about how to integrate various approaches. The methods I have employed in this thesis will all be accounted for in this chapter.

#### 4.1.1 The multiphase design

Figure 4A provides an illustration of how I have designed my mixed methods approach in three phases, and what kind of data I collected in each phase. This approach is recognised as multiphase design (Creswell, 2013; Creswell & Clark, 2011).



**Figure 4A.** *The research design*

As shown in Figure 4A, my PhD project has a qualitative dominant design (Creswell & Clark, 2011), as two of the data collection phases were qualitative (TPD course and classroom observations), while the last phase was quantitative (reading tests). I have tried to capture the teacher perspective in Phases 1 and 2, and the student perspective in Phases 2 and 3, in the form of teacher narratives and interviews on the one hand, and student interviews and reading scores on the other. In addition, I used my field notes from the classroom observations as a participant observer to validate the teacher and student data.

I collected the data sequentially; Phase 1 in November 2011, Phase 2 in September–November 2012, and Phase 3 in October–December 2012. This timeframe provided the potential for influence between the phases, as data from one phase suggested what to look for in the next. In the following, I account for each phase including the methods employed.

*Phase 1.* I designed this phase as a TPD course on reading instruction for upper secondary school teachers. The overall aim of this phase was to investigate the roles reading strategies play in these teachers’ instructional design, specifically in English L2 compared to other subjects taught in the L1. This phase comprised five components: (a) a pre-interview with the teachers as a group to activate their prior knowledge about reading strategy instruction, (b) a 5-hour lecture presenting such strategies, including activities where the

teachers acted the student part, (c) an interval of four weeks during which the teachers taught in their own classes, (d) individual externalisation of their instruction through written teacher narratives, and (e) collective externalisation among the teachers, through their sharing of instructional designs, first in groups of four and then collectively in a final group interview.

*Phase 2.* Since the data in Phase 1 were based on self-reporting, and might therefore reflect intentions rather than practices, I designed Phase 2 to include classroom observations. I aimed to compare and contrast findings in Phases 1 and 2. Because I compared instruction in English L2 with other subjects during Phase 1, I narrowed the scope in Phase 2 to English L2. To capture different perspectives, Phase 2 comprised three components: (a) classroom observation of five reading lessons in L2, (b) individual externalisation of the teachers' strategy instruction in the observed lessons through written teacher narratives, and (c) collective externalisation among the students, who shared their use of reading strategies in group interviews immediately after the observed lessons.

*Phase 3.* Bearing in mind that the intention of using reading strategies is to improve reading proficiency (e.g. Duke et al., 2011; RAND, 2002; NRP, 2000), I felt it was important to compare the students' use of reading strategies to their reading proficiency. Since students in Norway participate in national reading tests in their first year of upper secondary school (see Section 1.1.4), I designed Phase 3 as a quantitative analysis of reading scores from two national reading tests, one in Norwegian L1 and one in English L2. I based the decision to collect data from both languages on cross-linguistic reading research (e.g. Brantmeier et al., 2014; Grabe, 2009; Koda, 2005, 2007) and compensatory reading theory (e.g. Bernhardt, 2011; Stanovich, 1980), which has suggested that students transfer skills between the L1 and the L2. Accordingly, Phase 3 combined (a) the collection of national reading scores from the L1 and L2 reading tests, and (b) the merging of the two datasets. The aim was to provide information about students' reading proficiency across the two languages, and to cast light on the reading proficiency of the students who were observed and interviewed in Phase 2.

Data from the three phases are for the most part reported separately; Article I reports from Phase 1, Article II from Phase 2, and Article III from Phase 3. In addition, as suggested by the mixed methods approach, each phase influenced and was influenced by other phases. Table 4A provides an overview. In the following sections, I describe the aspects in Table 4A in more detail, namely the participants (4.2), the data (4.3), the analyses (4.4), and research credibility (4.5).

**Table 4A.** Overview of the phases and the articles, including methods, research questions, participants, data, analytical concepts, mixed methods credibility, and the main findings.

	Phase 1 – Article I TPD course	Phase 2 – Article II Classroom observations	Phase 3 – Article III Reading tests
<b>Title of article</b>	Making implicit practice explicit: How do upper secondary teachers describe their reading comprehension strategies instruction?	Strategies and shoes – Can we ever have enough? Teaching and using reading comprehension strategies in general and vocational study programmes.	The complexity of second language reading: Investigating the relationship between L1 and L2 using upper secondary level national reading tests.
<b>Methods</b>	Qualitative	Qualitative	Quantitative
<b>Main research question(s)</b>	What role do reading comprehension strategies play in upper secondary teachers' instructional design?	How do upper secondary teachers include reading comprehension strategies in their English L2 instruction, and how do they help their L2 learners to socially and personally engage with text by providing them with strategies?	How do Norwegian upper secondary students read across Norwegian as the L1 and English as the L2?
<b>Participants (Section 4.2)</b>	Sample 1 (County): 21 upper secondary teachers	Sample 2 (County): Five English teachers (from the sampled teachers in Phase 1). Sample 3 (County): 64 of their students	Sample 4 (National): 10,331 upper secondary students (including students in Phase 2)
<b>Data (Section 4.3)</b>	Teacher narratives and teacher interviews	Teacher narratives, student interviews, and field notes	Student reading scores in the L1 and the L2
<b>Analytical concepts (Section 4.4)</b>	<ul style="list-style-type: none"> <li>• Reading instruction</li> <li>• Reading strategies</li> <li>• Metacognitive awareness</li> </ul>	<ul style="list-style-type: none"> <li>• Reading instruction</li> <li>• Reading strategies</li> <li>• Metacognitive awareness</li> </ul>	<ul style="list-style-type: none"> <li>• Reading proficiency</li> </ul>
<b>Mixed methods credibility (Section 4.5)</b>	<ul style="list-style-type: none"> <li>• <i>Reliability</i>: A template developed in Article I was re-used in Article II.</li> <li>• <i>Sequential validity</i>: The design of Article I influenced Article II.</li> <li>• <i>Triangulation</i>: Self-reported data were combined with observation in Article II.</li> </ul>	<ul style="list-style-type: none"> <li>• <i>Reliability</i>: The template from Article I was re-used in field notes, narratives, and interviews.</li> <li>• <i>Sequential validity</i>: Strategy categories from Article I were used in the analyses.</li> <li>• <i>Sample integration validity</i>: Teachers were sampled from Article I.</li> <li>• <i>Triangulation</i>: Reading scores in Article III were used in the discussion of student data.</li> </ul>	<ul style="list-style-type: none"> <li>• <i>Sequential validity</i>: Findings in Article III influenced the discussion in Article II.</li> <li>• <i>Sample integration validity</i>: Schools and students in Article II and III were included in the Article III sample.</li> </ul>
<b>Main findings (Section 5.1)</b>	<p>This article shows how 21 upper secondary teachers reported using reading comprehension strategies in their instruction after a TPD course, and how strategy use was part of their tacit knowledge.</p> <p>A repertoire of reading comprehension strategies was identified, as well as self-reports on how and why they were used.</p>	<p>This article shows how five of the 21 upper secondary teachers first presented in Article I taught reading comprehension strategies one year later, as well as how their 64 students reflected on their strategy use.</p> <p>A repertoire of reading comprehension strategies was identified in English L2. Students in vocational programmes were identified as the more actively strategic readers.</p>	<p>This article shows how 10,331 upper secondary students read across the L1 and L2, and how groups of students differed in their reading proficiency.</p> <p>A strong relationship of 45% between L1 and L2 reading was identified, and a relationship of 18% between L2 reading and study programme. Poor L2 readers read markedly differently in the two languages.</p>



## 4.2 Participants

The notion of active and strategic readers is quite different from passive receivers of information (see Section 3.1), which requires the teachers to consciously consider how to support their students as L2 readers (see Section 3.2). I therefore saw it as imperative to include both teachers and students in my research. The samples include teachers and students in both general and vocational programmes, and I have ensured interrelation between the samples (e.g., Johnson & Christensen, 2013).

*Sample 1:* In 2011, I was regularly invited to facilitate TPD courses in various counties, one of which I chose for data collection. Since I wanted a breadth of teachers participating in the TPD course, I included all 21 teachers who were able and willing to participate. These provided data from the common core subjects English L2, Norwegian L1, Social science, and Religion and ethics, as well as five vocational subjects (Communication and service, Hairdressing, Health work, Welding, and Wood turning). Article I is based on this sample of teachers from 11 upper secondary schools in a county in the north of Norway.

*Sample 2:* Six months after the TPD course, I e-mailed the 21 teachers, inviting them to take part in the Phase 2 classroom observations. I informed them that the aim was to observe lessons that concerned reading, without being more specific. I received 20 positive responses and randomly chose eight of these for participation. Since I aimed at an in-depth study of reading instruction and comprehension strategy use in English L2, the five teachers who taught English L2 were included. Consequently, in Article II, the teacher sample consists of these five focus teachers, from four different upper secondary schools.

*Sample 3:* Aiming for different perspectives and at the same time a relation between the teachers and the students in Phase 2, I invited the students who were present in the observed L2 lessons to participate. All 64 students were able and willing, and they constitute the student sample in Article II.

*Sample 4:* To get an impression of the reading proficiency of the students in Sample 3, I collected data from two national L1 and L2 reading tests, which they had participated in. In order to achieve as representative a sample as possible, and to be able to compare the students in Sample 3 to the population at this level, I collected data among all upper secondary students who participated in these reading tests. This approach yielded a sample of 10,331 students. Consequently, in Article III, the student sample consists of 10,331 students from 87 schools, including the schools and students in Sample 3. The sample and the procedure are described in more detail in Article III.

## 4.3 Data

The following sections are meant as a supplement to the accounts provided in each of the articles.

### 4.3.1 Phase 1: Teacher narratives and teacher interviews

Phase 1 combined two group interviews with the teachers and their written narratives. As mentioned, the TPD course took place on two days, with a four-week interval in between. The pre-interview was conducted at the beginning of the first day, with the narratives and the post-interview conducted during the last course day. This is reported in Article I.

For both types of data, I asked the teachers to report on their reading instruction, their teaching of reading comprehension strategies in particular. For the narratives, I provided them with a template to fill in, intended as a “thinking sheet” (see Article I, Appendix A) to help them articulate in writing their instruction and the strategies they had taught. The template functioned as a self-report data collection instrument, to elicit reflection and awareness (Avalos, 2011; Borko, 2004; Myhill, Jones, Lines, & Watson, 2012). According to Johnson and Turner’s (2003) data categories, the narratives can be considered responses to a qualitative questionnaire with open-ended questions (pp. 303–305). This structure means that the headings in the template can be considered in-depth questions where the teachers could provide information to any heading they wished, answering in their own words.

I also used this template in the teacher interviews. It functioned as a point of departure for discussion, instead of a strict interview protocol, which made the pre- and post-interviews semi-structured (Creswell, 2013). Brinkman and Kvale’s (2014) description of the qualitative interview supports my interest in the teachers’ expressed meaning:

Qualitative interview research approaches people not as objects, mechanically controlled by causal laws, but rather as persons, i.e., as subjects who act and are actively engaged in meaning making. In research interviews, we talk to people because we want to know how they describe their experiences or articulate their reasons for actions. (Brinkman & Kvale, 2014, p. 3)

Both teacher interviews fit Johnson and Turner’s (2003) description of focus groups as well as individual interviews. Phecman and Curran (2013) illuminated the difference, pointing out that “the key difference is the unit of analysis. With focus groups, the unit of analysis is the group, not the individual” (p. 7). The teacher interviews in Phase I had a dual unit of analysis, both the individual teachers and the teachers as a group. I targeted the individual teachers’ opinions *and* the collective meaning-making among them, by asking two

questions to prompt 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?* The interviews developed gradually, from fairly sparse information about their strategies instruction in the pre-interview, to very explicit descriptions in the post-interview, in which they drew on the information they provided in the narratives; which strategies they had used as well as when, how, and why.

This explicitness about their instructional practices was not apparent in either data material alone, but was revealed when analysing across the narratives and the post-interview. In short, the addition of the written narratives helped me to gain insight into strategy instruction that was not readily available in the group interviews alone. Another advantage of combining narratives and the post-interview was that it enabled me to probe the teachers for clarity and more details (Johnson & Turner, 2003). This combination was made possible as I photocopied their narratives immediately after they had written them, and handed them back to them, so they could present them in groups of four. During this time, I read through each narrative to prepare for the post-interview (see Article I, p. 58 for more details). Since the teachers in the post-interview often quoted what they had written in their narratives, I underlined their quotations. Creswell (2013) articulated some objections to using interviews; in my project, the first and foremost objection would involve the weakness of self-reported data. Since the narratives were also self-reported, the main reason I decided to use a mixed methods approach was to integrate various data sources across the three phases in an attempt to compensate for this weakness.

#### 4.3.2 **Phase 2: Field notes, teacher narratives, and student interviews**

In Phase 2, I conducted classroom observations that included field notes, a new set of teacher narratives, and student interviews. As a participant observer (Johnson & Turner, 2003), I developed knowledge of reading instruction and reading strategy use in each English lesson, which helped enhance my semi-structured interviews with the students, and my use of the observation as validation of the teacher and student data. This is reported in Article II.

The classroom observations marked a shift between Phases 1 and 2, from collecting self-reported data to integrating these with observational data. Johnson and Turner (2003) pointed out that “observation is an important method, because people do not always do what they say they do” (p. 312). Observing the five teachers and their students in the social and naturalistic environment of the English classrooms, I used the template to take structured field notes including descriptions of reading activities and strategies, as well as teacher and student

responses noted as direct quotations. This approach enabled me to gather what Johnson and Turner (2003, p. 314) labelled relatively “objective firsthand” information that was supplemented with self-reports from the students (group interviews) and the teachers (written narratives) immediately after the observed lesson.

The main reason for including teacher narratives in this phase was to collect the same type of teacher data in two different situations, one year apart, to allow the comparison of the teachers’ instructional practices over time. Nevertheless, I was aware that the teachers might plan their teaching differently than they would otherwise have done, since they knew I would observe their lessons, an aspect of reactivity which I reflect on in Section 4.5.2 on research validity. In Phase 2, the five L2 teachers wrote one narrative each, based on the observed English lesson, while I interviewed their students. The general consistency across the narratives in Phases 1 and 2 provided corroborating evidence of the relevance of the reported strategies.

Silverman (2013) asked if researchers interested in what goes on in a classroom could “observe what is going on there, instead of asking participants what they think about it” (p. 48). Doing both enabled me to explore reading strategy use among the students. I needed the students’ perspective in addition to the teachers’, to find out what the students thought about their own strategic reading practices. As a result, I also interviewed five groups of students, each student participating in one interview. Table 4B provides an overview of these groups:

**Table 4B.** *Overview of the student interviews in terms of the schools, teachers, and study programmes, as well as the number of students in each group.*

Schools	Teachers (fictive names)	Educational programmes	Students in each group
School A	Magne	General	9
School B	Petter	Vocational	9
School C	Linda	Vocational	20
School D	Ruth	General	19
School D	Andreas	Vocational	7
<b>Total</b>			<b>64 students</b>

As with the teacher interviews, the student interviews were semi-structured and conversational (Creswell, 2013, Brinkmann & Kvale, 2014). I used the template as a point of departure, rewording the headings as needed and covering them in any sequence or order (Johnson & Turner, 2003, pp. 305–306). The interviews were conducted in Norwegian for the participants’ ease, although at school A, several students chose to speak English. Groups are advantageous where the participants are similar (Creswell, 2013), so I interviewed the

students in groups that included students only, to diminish the potential pressure they might feel to provide answers their teachers would approve of. The various data sources in this phase opened up for the juxtaposition of perspectives, as both student and teacher voices were heard. Together, the integration of data within and across Phases 1 and 2 determined the relationship between the strategies the teachers taught and the strategies the students used. In the next phase, I compared these qualitative data with quantitative ones.

#### 4.3.3 Phase 3: Student reading test scores

The reading tests introduced a shift from Phase 2, which combined different types of qualitative data from a county-based sample, to Phase 3 which built solely on quantitative reading test data from a national sample of 10,331 students. The test scores were collected from a paper-based test in Norwegian L1 and a digital test in English L2. I collected the L1 data directly from each upper secondary school, while the L2 data were provided from UDIR. This is reported in detail in Article III.

These data represent a mixture of two categories presented by Johnson and Turner (2003), being quantitative *test* scores collected as *secondary* or existing data. Both reading tests are based on construct descriptions from UDIR. These state that the students should be able to find, interpret, and make inferences based on information in various text types and formats (UDIR, 2010a, 2010b, 2012; KD, 2006, 2013). Each test includes a set of items that together measure the students' language and text comprehension in the L1 and the L2 (see Article III, Table 1). The language construct corresponds to the decoding aspects of reading, while the reading comprehension construct corresponds to the PISA and RAND frameworks for reading (OECD, 2010; RAND, 2002). Brantmeier (2004) listed a variety of measures commonly used for measuring reading comprehension, with multiple choice tasks in standardised tests being the most commonly used format in both tests in Phase 3. In addition, word chains were used in the L1 test, while click word, adding missing words in sentences, and moving paragraphs were used in the L2 test as they are compatible with the digital test format (UDIR, 2010a, 2010b). Although the two tests are based on the same constructs, apart from languages, I found three main differences; (a) the test formats (paper vs. digital), (b) the text length (the L1 test has two long tests, while the L2 test has several short ones), and (c) the various task formats. This variety of assessment tasks is in line with formats used in recent L2 reading assessments (e.g. Brantmeier, 2004).

The main aim in collecting these data was to identify the reading proficiency of the students who were interviewed in Phase 2, more specifically who are the poor and the more

proficient readers. To address the main aim, I used regression analysis to predict the statistical relationship between scores in the L1 and L2, based on Bernhardt’s (2011) compensatory model of second language reading which is commonly used in second language research. We further analysed how the independent factors, gender and study programmes, relate to performance on the dependent L2 reading comprehension variable.

Hopefully, this description of the multiple data sources across the three phases has provided clarification and an overview of my multiphase design, intended to provide “more thorough information, corroborative of findings, and overall a much more trustworthy research study” (Johnson & Turner, 2003, p. 316) than with either method alone.

**4.4 Analyses**

The data analysis is of course described in detail in the three articles, so the following overview aims to show how the multiphase design influenced the analyses. Drawing on the reading research presented in Chapter 2 and the theoretical framing presented in Chapter 3, I now turn to the presentation of the analytical concepts used in the three articles, which are central to the analyses conducted in the research presented in Articles I, II, and III.

**4.4.1 Analytical concepts**

I used four analytical concepts across and within the three phases; *reading instruction*, *reading strategies*, *metacognitive awareness*, and *reading proficiency*. As illustrated in Table 4C, I designed the first two phases to tap into reading instruction, reading strategies, and metacognitive awareness, while the third phase was intended to capture reading proficiency.

**Table 4C.** *Overview of analytical concepts used for each phase and data source*

	<b>Reading instruction</b>	<b>Reading strategies</b>	<b>Metacognitive awareness</b>	<b>Reading proficiency</b>
<b>Phase 1 TPD course</b>	Teacher narratives	Teacher narratives	Teacher interviews	
<b>Phase 2 Classroom observation</b>	Teacher narratives and field notes	Teacher narratives and field notes	Student interviews	
<b>Phase 3 Reading tests</b>				L1 and L2 tests

*Reading instruction* refers to the reading comprehension strategies that are taught by the teachers and/or used by the students. This analytical concept includes how teachers teach reading comprehension, whether they teach reading strategies, and how these are introduced

or modelled in the situatedness of the classroom environment. It also involves when, why, and how the teacher provided tasks which allowed the students to both acquire and use the strategies in an effort to comprehend text. The data are analysed in light of the *Quadrant model* (Edwards, 2015) and the *Model of gradual release of responsibility* (Duke & Pearson, 2002), which are presented in Chapters 2 and 3. One goal of reading instruction is to help readers understand the immediate text at hand, while another is to help the students develop into independent and active readers who use a small repertoire of reading comprehension strategies (RAND, 2002, p. 27). The data analysed are the teacher narratives in Phases 1 and 2, and the field notes in Phase 2.

*Reading strategies* as an analytical concept refers to the reading comprehension strategies that are taught by the teachers and/or used by the students. This is defined as the procedures and routines that readers apply across a number of different texts (NRP, 2000), which complies with McNamara's (2011) definition of reading strategies as consciously applied procedural knowledge that students learn to use critically as tools for deep and long-lasting text comprehension. These definitions also align with the notion of reading strategies as powerful tools for text comprehension (Duke et al., 2011; Garcia et al., 2011). In the present analysis, I also consider reading strategies as tools in the Vygotskian sense (1981), where the strategies help direct the active, independent reader towards comprehension. The data analysed are the teacher narratives in Phases 1 and 2, and the field notes in Phase 2.

*Metacognitive awareness* refers to the teachers' reflections on their instruction, and the students' reflections about their use of reading strategies. As defined in Chapter 2, metacognitive awareness includes the "why" aspect of reading comprehension, where teachers and students reflect on and express their understanding of why strategies might contribute to enhance and develop the students' reading comprehension. It also includes the "where to" aspect of analysing whether the students reveal a personal purpose for strategy use. Methodologically, I designed Phases 1 and 2 to capture metacognitive awareness among both teachers and students. The data analysed are the teacher interviews in Phase 1 and the student interviews in Phase 2.

*Reading proficiency* refers to students' reading performance in L1 and L2, in terms of language and reading comprehension, as inferred from standardised reading assessments. This quantitative concept is based on Bernhardt's (2011) compensatory model of L2 reading, as discussed in Section 2.1.2. The data analysed are the reading tests in Phase 3.

#### 4.4.2 Analytical process

To increase the methodological transparency of my research, I present some examples of how the analytical readings were carried out for the various data sources.

*Teacher interviews:* In analysing the teacher interviews, I aimed to identify metacognitive awareness among the teachers. I analysed my notes from the teacher interviews to see whether they revealed metacognitive awareness concerning their instruction. Appendix 1 in this extended abstract gives an example of the analysis of the pre- and post-interviews. Some of these findings are presented as quotations in Article I (Section 3.1, pp. 59–60).

*Teacher narratives:* I analysed the written narratives to identify how the teachers teach, in particular how they described their reading instruction, which reading strategies they reported to teach, and when, how, and why they taught them. I used the qualitative software NVivo to analyse the narratives in Phase 1, using concept-driven categories. First, I used the four broad categories of memorisation, organisation, elaboration, and monitoring (Weinstein & Meyer, 1986). Second, I used more specific categories of strategies presented at the TPD course; setting purposes, activating prior knowledge, previewing and predicting, skimming and scanning, careful reading, contextual reading, making inferences, underlining/highlighting, key words, visualising (graphic organisers), questioning, and summarising (Block & Duffy, 2008; Duke et al., 2011; Fisher & Frey, 2008; Grabe, 2009; OECD, 2010). Third, based on the information in the narratives, I identified whether the teachers described strategies that had not been covered in the course. Three strategies were indeed mentioned by several of the teachers; discussing with peers (Hopfenbeck & Roe, 2010), relating to study, and active listening (Block & Duffy, 2008). In Article I, Table 1 (p. 57) provides an overview of the categories, which I also used in Phase 2, to identify strategies described in the second set of narratives (see Article II, Appendix A).

To identify reading strategies, I searched for the specific names of the strategies, as listed above, as well as descriptions of these strategies using other words. In one example from Article I, Andreas described what he had asked his students to do, using the strategies “skim” and “scan”: “I asked them to skim and scan two texts in the textbook about two different welding methods”. Another example was Magne, who had asked his students to “scan” the text of a ballad: “I wanted to include another before-reading strategy and asked my students to scan the lines to search for rhyme”. To identify reading instruction, I searched for descriptions of how the teachers had introduced the strategies, provided tasks, and assessed strategy use in each lesson. On the list of strategies, I then ticked off that both Andreas and Magne had used the reading strategy “skimming and scanning”, although Magne did not



mention “skimming”. The strategies used by the teachers and the full quotations are presented in Article I (pp. 59–60). Further, in Article II, Table 5 presents the strategies taught by the teachers. I found extensive agreement across the open-ended questions in the narratives and their responses in the post-interview. The general consistency of the responses across the two forms of data provided corroborating evidence of the teachers’ self-reported instruction of reading strategies. I also compared the narratives with my field notes in Phase 2, of which an example is provided in Appendix 2 in this extended abstract.

*Field notes:* I validated the findings in the Phase 2 narratives with information from my field notes (see Appendix 2). The general consistency across these data provided corroborating findings of the importance and validity of the reported strategies.

*Student interviews:* I transcribed and analysed the audio-taped student interviews to identify metacognitive awareness, in terms of how the students reflected on their strategy use in and out of school. The main difference between the interactions in the teacher and student interviews was the explicitness and the way in which participants talked about the strategies. While the teachers provided little information in the first interview and explicit information in the second, the students richly revealed why, when, and how they used reading comprehension strategies, both in the environment of the English lessons and individually. Appendix 3 in this extended abstract gives several examples of the analyses of the student interviews, which I also quote in the findings section in Article II.

*Student reading tests:* I analysed the reading test scores using the quantitative software SPSS (Statistical Package for the Social Sciences). The two reading tests were merged, to be able to identify the students’ reading proficiency across L1 and L2, using frequency, reliability, and regression analyses. The reading tests are standardised, with closed items only, in terms of all questions having more than one fixed answer to choose between and no open-ended rubrics. The scoring is based on right/wrong answers, with no ambiguity in the scoring (e.g. Brantmeier, 2004; Brantmeier et al., 2012). Although no data are fully objective, the test scores are less open to interpretation than the data in Phases 1 and 2. As Brantmeier (2004) pointed out, “the more variables entered in the [multiple] regression equation, the larger the N size for the study must be” (p. 58). I met the assumption underlying regression modelling by using Sample 4 with  $N=10,331$  students. In the analyses, we found that the L2 scores had high internal reliability. The analysis is described in detail in Article III, with methodological considerations according to general assumptions underlying the use of regression modelling. In line with Brantmeier (2004), the aim has been to select appropriate statistical procedures driven by the research questions as a critical part of my research.

## 4.5 Research credibility

Research credibility highlights the notion of defensible research (e.g. Johnson & Christensen, 2013). In the following sections, I discuss the reliability, validity, and generalisability of my research, before addressing what I consider to be the most important ethical concerns. The difference between reliability and validity can for the former be described as the accuracy and transparency needed to enable replication of the research (reliability), and for the latter the trustworthiness of the inferences drawn from the data (validity).

### 4.5.1 Reliability

A popular definition of reliability is “the degree to which the finding is independent of accidental circumstances of the research” (Kirk & Miller, 1986, p. 20). The outcome of a study should not be determined by the timing, the researchers’ choice of instruments, or other circumstances. Reliability, then, is concerned with consistency or regularity, which is also emphasised in Silverman’s (2013) definition: “reliability refers to the degree of consistency with which instances are assigned to the same category by different observers or by the same observer on different occasions” (p. 302). Still, research where people are involved can never be fully replicated; for instance, the atmosphere in a classroom will never be identically recreated and identical utterances will not be uttered. Nevertheless, three different measures of reliability employed in this thesis are *reliability of results* (as seen in replication over time showing similar results), *intra- and inter-rater reliability* (as in consistent coding over time), and *measurement reliability* as a psychometric property (e.g., test-retest reliability).

*Reliability of results* is found in the consistent strategy use among the five focus teachers over time, as reported first in the teacher narratives in Phase 1, and then again in their Phase 2 narratives. This repetition suggests reliability of results regarding the teachers’ use of reading strategies in their instruction. Articles I and II discuss this aspect. Moreover, the multiphase design enabled re-use of the narrative template methodologically across the two phases. I designed the instrument to collect data from the teacher narratives and interviews in Phase 1. Then I re-used it for the teacher narratives in Phase 2, and I modified it for the field notes and student interviews in Phase 2. Finally, I used the template in the analysis across the Phase 1 and 2 data sources. Using the same template with the same headings made the comparison across the narratives, interviews, and observations more reliable, not the least since comparing data across time, situations, and perspectives is a challenging task (Creswell & Clark, 2011). The template is published in Article I (Appendix A).

*Inter- and intra-rater reliability* was found in all phases. When analysing the narratives and interviews, I coded and reanalysed the data three times in each phase, after two, six, and 18 months. Comparisons of the coding into categories indicated satisfactory overlap. In Article III, I conducted the analysis in the statistical programme SPSS. To ensure consistency, all analyses were conducted several times by myself and the second author of Article III.

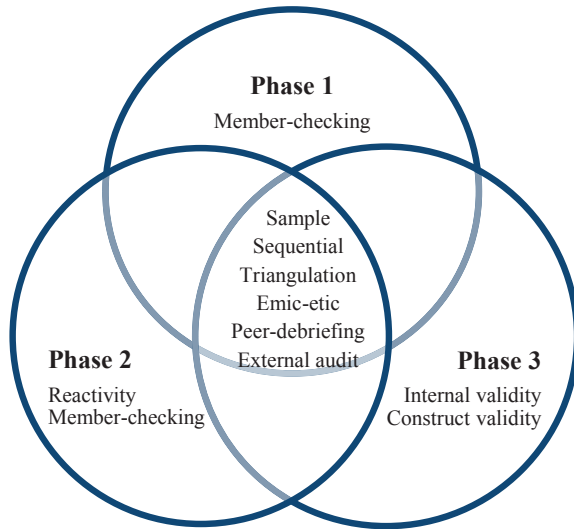
*Measurement reliability* was found in the reliability measures of the reading tests in Article III. Reliability estimates (Cronbach's  $\alpha$ ) for the tests were high both for L1 reading comprehension ( $\alpha=.88$ ) and for overall L2 reading proficiency ( $\alpha=.93$ ), the latter being a consistent finding since 2010 (UDIR, 2010a, 2012). This is further discussed in Article III.

#### 4.5.2 Validity

Boeije (2010) emphasised that validity is an evaluation of whether a specific method employed is a good way of measuring what it intends to investigate. Validity does not refer to the data itself (Creswell & Miller, 2000); rather, it is connected to judgement, and refers to whether the inferences drawn from the data are trustworthy. Rather than belonging to a separate stage of investigation, validation permeates the entire research process (Brinkmann & Kvale, 2014). I took a number of steps to minimise the threats to my research through *multiple validities* (Johnson & Christensen, 2013):

This term refers to the extent to which the mixed methods researcher successfully addresses and resolves all relevant validity types, including the quantitative and qualitative validity types [...] as well as the mixed validity dimensions. In other words, the researcher must identify and address all the relevant validity issues facing a particular research study. (p. 311)

The use of a mixed methods approach actually contributes to validity in and of itself, in terms of each phase influencing the design of the next (*sequential validity*), and by comparing multiple data sources throughout the phases (*triangulation*). Figure 4B illustrates this relationship, with the two validity procedures placed in the centre of the figure, where the three phases overlap. In addition, I have used *sample integration validity*, *emic-etic validity*, *peer-debriefing*, and *external audit* in all three phases. As Figure 4B shows, I addressed additional validity procedures in the separate phases; *member-checking* in Phases 1 and 2, *reactivity* in Phase 2, and *internal validity* and *construct validity* in Phase 3 (Johnson & Christensen, 2013). I describe the procedures below, starting with the separate phases and concluding with validity addressed throughout. External validity is treated as generalisation in Section 4.5.3.



**Figure 4B.** Multiple validities addressed in each of the three phases, and integrated across

I used *member-checking* (Creswell, 2013; Johnson & Christensen, 2013), or member validation (Brinkmann & Kvale, 2014), twice in Phase 1. First, I used it to assess the template after the teachers had used it to write their narratives. In the post-interview, they revealed that they considered the headings in the template to be well-constructed formulations that helped them make their reading comprehension strategy instructions explicit. This feedback influenced the re-use of the template in Phase 2. Second, after the course, I selected half of the teachers and sent them a transcribed version of their narratives for member-checking, to make sure I got the emic viewpoint correct. All the teachers confirmed that they perceived the narratives as accurately transcribed and representing their point of view, and by doing so also renewed their consent of using the narratives. In Phase 2, interviewing the students was another way of using member-checking to validate my observations methodologically, by having the students comment on my immediate analysis of the observed lessons. By doing so, they had the opportunity to add nuances to my interpretations.

I was mindful of *reactivity* twice in Phase 2; first, during the classroom observations and then in the student interviews. As pointed out by Johnson & Christensen (2013, p. 294), participants might perform unnaturally while being observed. However, my impression was that, in the classrooms, it took only a few minutes before the teachers and students seemed to have forgotten I was present. To further strengthen the validity, I compared my observations

to the teachers' written narratives and the student group interviews immediately after the observed lessons. Particularly in the student interviews, I had reason to consider whether responses might be compromised and disrupt the validity of the data, if the students adjusted their answers to the kind of answers they believed I expected. However, in these interviews, they did not seem to do so, but rather to build on each other's utterances to confirm and contrast their peers' views on strategy use. In this sense, the student interviews came across as arenas for construction of individual and collective meaning, where the result was more than the sum of the individual contributions (Creswell, 2010).

An additional aspect of reactivity that I have considered was whether the teachers planned their teaching differently than they would otherwise have done, since they knew I would observe their lessons. The teachers agreed to participate in Phase 2 three to five months before I came, and one of the teachers actually informed me after the classroom observation that her focus on reading comprehension and reading strategy use had increased during the entire term because she knew I would be observing. She said this anticipation had motivated her in her planning and design of lessons not only in her English L2 class but also in her other subjects and classes. This focus might resemble the longitudinal design of some TPD courses (e.g. Pressley, 2008). It also resembles the Hawthorn effect – known as the observer effect – where participants improve or modify an aspect of their behaviour in response to the increased attention they receive (Adair, 1984; McCartney et al., 2007). If reactivity influenced the focus of the participants in such a manner, it is also similar to what occurs when school leaders follow up their teachers after TPD courses that they regularly attend.

*Construct validity* (Johnson & Christensen, 2013) indicates the extent to which a higher-order construct, such as reading comprehension, is accurately represented in a particular study; in other words, it considers whether my research tests what it is intended to measure (Johnson & Christensen, 2013, p. 296; see also Messick, 1996; Bachman & Palmer, 2010). I addressed construct validity in relation to the reading tests in Phase 3. Being an abstract concept, reading comprehension is difficult to define precisely (Johnson & Christensen, 2013). Measuring reading comprehension is an ambitious task in any standardised reading test, and there is little doubt that only a small fraction of what can be considered reading can be measured. To compare the constructs, I used the information from the test developers and the literature to control for construct validity in each of the two tests. I found that the constructs in both reading tests were well-defined and complied with theories of reading comprehension (e.g. RAND, 2002; OECD, 2010), and that the overlap between the constructs justifies merging the two tests. Article III (Table 1) describes these constructs.

It is well-known that differences in comprehension may be a function of the type of assessment used (Brantmeier, 2002, 2004). Additionally, questions remained about whether the complexity of L2 reading can be captured from a score on closed question items, and whether differences in comprehension are a function of the type of assessment used. As described in Article III, most of the items are of the multiple choice format, and although the value of multiple choice questions in assessing reading has been disputed for decades, it is still the most widely used means of assessing reading comprehension (Brantmeier et al, 2012). Considering construct validity when using secondary data makes it necessary to decide whether to accept the construct or not, as it is not a matter of improving or adjusting it. There is little doubt that these reading tests contain fewer items than would be ideal, with only 4–9 items for most of the constructs. Only two of the test aspects have more items, both in the L1 test; finding explicitly stated information in the text (25 items) and language (74 items). These considerations are further discussed in Article III for transparency reasons.

I addressed *internal validity* related to the findings in the reading tests in Phase 3, in which I analysed the students' reading proficiency in English. I took care to control for a number of potential causes or explanations to ensure internal validity, first correlations between overall L1 reading proficiency and two lower order constructs (L1 language  $r=.90$ , L1 reading comprehension  $r=.71$ ); second, between L1 language and L1 reading comprehension ( $r=.44$ ); next, between overall L2 reading proficiency and the two lower order constructs (L2 language  $r=.89$ , L2 reading comprehension  $r=.97$ ); then between L2 language and L2 reading comprehension ( $r=.70$ ); and finally between the overall L1 and L2 scores ( $r=.55$ ). However, we know that some omitted variables, for example socio-economic status (SES), are important explanatory variables for educational test performance, which might influence the internal validity. I hope to have argued for my having drawn valid inferences based on the findings, theory and prior research.

*Sample integration* refers to the relationship between samples, especially between qualitative and quantitative ones (Johnson & Christensen, 2013, p. 311). As described in Section 4.3 on participants, the teachers in Phase 2 were sampled from the teacher sample in Phase 1. Combining the two teacher samples offered breadth and depth; analysing the 21 teachers' instructional practices provided breadth across subjects and languages (Article I). When focusing on detailed understanding of the English L2 practices of five of these teachers, I collected considerably more data on each teacher and used probes designed to deepen and broaden the information available for analysis (Article II). Further, combining one qualitative and one quantitative student sample offered depth of understanding the students' use of L2

strategies (Article II), and breadth by providing generalisable data concerning 10,331 students' reading proficiency (Article III). Finally, the schools and students in Phase 2 were included in the sample in Phase 3.

*Sequential validity* points to the multiphase design, where the three phases are integrated throughout, influencing and building on each other. Table 4A illustrates how Phase 1 influenced the design of Phase 2, and how findings in Phases 2 and 3 influenced each other. As will be seen next, sequential validity overlaps to some degree with triangulation.

*Triangulation* enabled me to draw on different data sources and inquiry approaches to look for consistency and nuances of the same phenomena (Bazeley & Kemp, 2012; Johnson & Christensen, 2013). Through this validation approach, I searched for convergence of results, using "multiple investigators, methods, data sources and/or theoretical perspectives" (Johnson & Christensen, 2013, p. 299). I integrated the teacher interviews with the narratives in Phase 1, to make the self-reported data more robust and to look for consistencies and potential divergences. Since self-reported data might reflect intentions rather than practices, I integrated the interviews and the narratives in Phase 1 with classroom observations and a new set of narratives in Phase 2. The goal was to compare the teachers' self-reports across a year, and to validate their perspectives with mine. Next, by conducting student interviews in Phase 2, I contrasted the teachers' perspectives from Phase 1 with those of the students. Finally, I analysed the student interviews in light of the representativeness of the interviewed students, by contrasting these Phase 2 interviews with the student proficiency from the Phase 3 reading test.

The triangulation contributed to *emic-etic validity*, where I have combined my outsider view (etic), with the insider view of the teachers and students (emic). For example, in the group interviews, where multiple voices were heard within each group (Creswell, 2013), I took care to encourage all participants to talk and to prevent individuals from dominating. Although it is impossible to say that I have avoided misrepresenting individuals' thinking, I have stayed as close to their utterances as possible and presented participant quotations in Articles I and II, hoping to represent their views as accurately as possible.

*Peer-debriefing* is a validation approach I employed at several stages (Creswell, 2013; Johnson & Christensen, 2013). First, to ensure reflection and transparency, I have presented and discussed data and interpretations with a number of educational researchers in various settings: During my stay as a recognised student at the University of Oxford in 2014, as a member of the national graduate school NATED since 2013, and as a member of the research group TEPEC at the University of Oslo since 2011. As Creswell (2013) has emphasised,

discussing multiple possible interpretations can add to the overall reliability of a study. During these presentations and discussions, I got valuable feedback on the selection of theories and the collection of data, and whether my analyses and interpretations were conceived as meaningful. Further, I have tried to be explicit in the articles and in this chapter about how I have analysed the data and how the categories were generated, so that readers of my work have a possibility to evaluate whether they find the inferences I draw from the data to be reasonable.

The final measure of validity is *external audit*. During my work with this thesis, I gave numerous TPD courses across the country. At these courses, I have presented preliminary findings and encouraged the teachers to elaborate on whether they recognised elements in their practices. My findings could thereby be compared to these responses from a broad selection of upper secondary teachers, being considered outside experts on the area of research. The teachers' responses in these TPD courses and the findings in my research were very similar. This approach was not intended as a systematic means of validation, but more as a way to ensure that the interviews and narratives as well as the analyses seemed to resonate with reasonable and relevant elements of the current practices in upper secondary reading comprehension (strategy) instruction.

Hopefully, the validity procedures described above have increased the *multiple validities* requirement for legitimation in mixed methods research. Finally, external validity is often described as generalisability, which I discuss next.

#### 4.5.3 **Generalisability**

Generalisability can be both qualitative and quantitative (Boeije, 2010; Silverman, 2013), and both are relevant in my thesis.

*Qualitative generalisability.* Qualitative data are not directly generalisable, and although I had no intention of identifying reading strategy teaching and use that can be generalised to a broad population of teachers and students, I wanted to make sure that the data painted a reasonable and relevant picture of what teaching and using reading comprehension strategies in upper secondary school in Norway is like. My aim has been to explore some of the ways some upper secondary teachers teach reading comprehension strategies in their instructional practices, and how some students use such strategies in and out of school. The findings presented in Articles I and II can therefore not be generalised to Norwegian upper secondary teachers or students as populations, but they might be transferable to these populations.



It also follows that, when studying students and teachers in upper secondary school, there is no overarching perspective on which aspect of reading comprehension strategy use should be captured. Instead, several perspectives have been elaborated in my three articles; first, teacher perspectives in English and other subjects, in general and vocational programmes (Article I); then, teacher and student perspectives in English in general and vocational programmes (Article II); and finally, my own perspective as a participant observer in English classrooms (Article II). It is however difficult to capture these changing perspectives in one research project. My aim has therefore been to analyse the data collected among teachers and students and to show how these give access to some conceptions of reading comprehension and teaching and use of strategies in upper secondary schools in Norway.

*Quantitative generalisability.* For results to be generalisable to a population, the sample needs to be representative for the same population. In Phase 3, I have reason to believe that the national sample of 10,331 upper secondary students provides a reasonably representative sample from the 34,882 students that participated in the L2 reading test, out of a population of 78,012 students in that cohort. In addition, there was a consistency in geographical spread across the country between the sample and the population, which further indicated that the sample is representative of the entire L2 population that was tested. However, since there were 78,012 students at this level at the time, we cannot automatically assume that the test results are generalisable to the entire population in upper secondary school in Norway, that is to say to the reference population, although they seem representative and the results transferable to such students. Furthermore, a question remains of whether these results can be generalisable over time, to students in both general and vocational programmes later than 2012 when these data were collected. If so, we would need to assume that these students have no reason to differ in their responses, for example that they will not be affected by changes in the educational system, or in society or culture. This assumption indicates that, although there is reason to believe that the quantitative results can be generalised, we should be open to the possibility that the situation might change and that this could influence the generalisability of the results.

Finally, since the qualitative and quantitative findings in my thesis concern teachers and students in Norwegian upper secondary school, they might not be directly valid in other countries or educational settings. However, the findings resonate with other studies, not only at the upper secondary level, but also at lower educational levels. This similarity is not least due to the status of English L2 in Norway, which is similar to many other countries that do

not have English as their native or official second language. Such similarities suggest that reading in English L2 in Norway resembles reading in English L2 in other countries, although it might be markedly differently from reading in English L2 in a country where English is the majority language. Hence, it is likely that some of the results of my study are transferable to countries where the educational system and other relevant language parameters are similar to those in Norway.

#### 4.5.4 **Research ethics**

All the participants in my research gave their voluntary consent before, during, and after the data collection situations. All of them chose to participate after being informed that they could withdraw at any time (Brevik, 2013; Busher & James, 2012; Ryen, 2011). The phases of the data collection and analyses were conducted in line with the ethical guidelines made by the Norwegian Social Science Data Services (NSD), who assessed and approved the data collection situations that needed approval.

In Phase 1, I directly asked the teachers if they wanted to participate in my 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 participate in that particular context (Brevik, 2013; Johnson & Christensen, 2013). The right to freedom and self-determination should however include the right to choose whether or not to take part in the research study (Busher & James, 2012). The teachers gave their voluntary consent before the pre- and post-interviews, and before and after writing the narratives in Phase 1; and further before the classroom observation, and before and after writing the narratives in Phase 2. To ensure anonymity of the participants, all names of teachers, schools, and county were erased or replaced with fictive names in Articles I and II.

Similarly, each of the students, whom I obtained initial access to through their teachers, also gave their voluntary consent before the interviews in Phase 2. Researchers have often discussed whether potential participants feel social pressure to participate (Ryen, 2011; Silverman, 2013). Blikstad-Balas (2013) claimed that “the fact that students usually have to consent to what teachers propose and that the power relation between students and teachers is uneven makes it problematic that the activities initiated by a researcher are often perceived by the class as approved by the teacher” (p. 47). I attempted to counter this pressure by explaining what voluntary consent encompasses, and by interviewing the students without having their teachers present, telling the students that their utterances would not be made

available to their teachers. Finally, in both the teacher and the student interviews, utterances were always initiated by the participants, who could choose to raise their hand and make a comment or answer a question.

To ensure anonymity of the participating students, their names were not mentioned during the interviews, and each student is therefore not identifiable in the audio recording. To further ensure anonymity, I refer to the students with a code in Article II, e.g. M1; in this code, the letter refers to the teacher's fictive name and the number refers to the number of students – M1 therefore means student 1 in Magne's class. Using numbers to refer to the students is necessary to differentiate between them, and also to see whether I refer to several utterances by the same student. Using the teacher's fictitious initial is useful to be able to connect the teacher's instruction with the student's utterance in Article II. Further, in Article III, each student name was replaced with a Student ID generated by UDIR. When the L1 data were received directly from the participating schools, some Student IDs were not provided, and these students were consequently excluded from the study. Each student ID was linked to school and county; however, names of students, schools, or counties are not used in the article. Ethical aspects of this process are further described in Brevik (2013).

#### **4.6 Short summary**

In this chapter, I have discussed the main methodological challenges for my thesis. Through these considerations, I have hopefully conducted a reasonable reliable, valid and ethically sound study (Johnson & Christensen, 2013). In the following chapter, I present and discuss the main findings and my contribution to research.

## 5 Summary and discussion of the articles

In this chapter, I start with a summary of each of the three articles included in this thesis and discuss each article's findings. Next, I discuss the overall contributions of my thesis (5.2). In the final sections, I end with some concluding remarks (5.3).

### 5.1 Summary of the articles

The aim of this thesis has been *to investigate the practices involved in developing reading comprehension in English as the L2 in Norwegian upper secondary school*. This overarching aim has been investigated through three separate articles; two on a micro level and one on a macro level.

#### 5.1.1 Article I

Title: Brevik, L.M. (2014). Making implicit practice explicit: How do upper secondary teachers describe their reading comprehension strategies instruction? *International Journal of Educational Research*, 67, 52–66.

As the title suggests, the aim of this article has been to address reading instruction, reading strategies, and metacognitive awareness from a micro perspective, by investigating the role of reading instruction to develop reading comprehension in Norwegian upper secondary schools. I analysed how teachers reported to teach reading strategies, and how they made their tacit knowledge of such instruction explicit after participating in a TPD course. I compared reading instruction in English L2 to reading instruction in common core subjects and vocational subjects taught in Norwegian as the L1.

As accounted for in Section 4.2, the sample comprised 21 upper secondary teachers in a Norwegian county, and the empirical material was collected during the TPD course (Phase 1). It included three qualitative data sources; a group pre-interview with all 21 teachers, a total of 23 written teacher narratives (two teachers wrote two each, while the rest wrote one each), and a group post-interview with all the teachers. The research question was: *What role do reading comprehension strategies play in upper secondary teachers' instructional design?* As analytical concepts, I used reading instruction, reading strategies, and metacognitive awareness (see Section 4.4.1). In the analysis, I used a set of reading strategies presented at the TPD course (see Article I, Table 1), based on reading theory and research.

In this article, I found a change in how the teachers described their reading instruction over time. In the pre-interview, their instruction came across as implicit and unarticulated, while they were more detailed and explicit in the written narratives and the post-interview. The findings suggested three patterns in the teachers' instructional design: (a) in the written form, the teachers were more explicit about their strategy instruction than they were in the interviews, (b) the teachers reported teaching multiple strategies in each lesson, and (c) the disciplinary content of the texts to be read seemed to matter more than did the strategies in the teachers' instructional design. A small repertoire of reading comprehension strategies could be identified among these teachers, along with how and why these were used in their teaching. These are positive findings, considering that, for more than two decades, research has confirmed that strategy instruction improves reading comprehension (e.g. Bernhardt, 2011; Block & Duffy, 2008; Duke et al., 2011; Grabe, 2009; Kamil et al., 2011; NRP, 2000). However, little research has confirmed the teaching of reading strategies, and researchers have had good reason to believe that strategy instruction does not necessarily take place in all-too-many classrooms (Aasen et al., 2012; Hellekjær & Hopfenbeck, 2012; Pressley, 2008; Wilkinson & Son, 2011).

The findings also showed that the teachers taught reading strategies that have been recognised as effective in current research (e.g. Block & Duffy, 2008; Brantmeier, 2002; Duke et al., 2011; Fisher & Frey, 2008; Hopfenbeck & Roe, 2010; Lee & Spratley, 2010; NRP, 2000; OECD, 2010). Furthermore, and in line with developments in strategy instruction since the 1990s, the teachers reported to teach strategies flexibly and in combination rather than as a series of single strategies (Block & Duffy, 2008; Wilkinson & Son, 2011). Furthermore, the findings indicated that the teachers to a large extent used the same strategies in the L2 as in the L1, which is in line with Grabe's (2009) summary of research on reading strategies over the past two decades. The teachers' descriptions also indicated that they did not teach the strategies as ends in themselves, but as a means to an end – as a set of tools to support disciplinary reading activities in the classroom, which several studies have emphasised as crucial (Fisher & Frey, 2008; Lee & Spratley, 2010; Moje, 2008, 2010; Moje et al., 2011; Pearson & Cervetti, 2013).

Based on the observed change in how the teachers described their practices, I argue in this article that they knew and used more strategies than they initially expressed. I further argue that the process of labelling the strategies using a shared specialised language at the TPD course helped them make their practices explicit, to others and themselves, thereby raising their metacognitive awareness of their instructional practices. Thus, although some of

the teachers explicitly expressed that they had acquired new strategic knowledge during the course, others experienced a renewed awareness of how to make their tacit knowledge and implicit practices explicit.

In this article, I also discuss whether the course design enabled the teachers to reflect on, develop, and externalise their reading comprehension strategies instructions in line with suggested practices in the field (Afflerbach, Pearson, & Paris, 2008; Borko, 2004; Bubb & Earley, 2010; Grossman et al., 2010; Porter et al., 2003). The findings in this article showed signs of teacher learning over time, suggesting an impact of the short TPD course, which challenge the common trend within research suggesting that TPD seldom works unless it is longitudinal (e.g. Anmarkrud & Bråten, 2012; Pressley, 2008). Indeed, perhaps the most important argument in this article is that, if participating in a brief TPD course increased the teachers' ability to consciously and explicitly teach strategic reading, then such courses might indeed be valuable contributions to improving reading instruction.

#### 5.1.2 Article II

Title: Brevik, L.M. (accepted for publication). Strategies and shoes – Can we ever have enough? Teaching and using reading comprehension strategies in general and vocational study programmes. *Scandinavian Journal of Educational Research*.

The aim of this article has been to address the role of reading instruction, reading strategies, and metacognitive awareness in supporting reading comprehension – on a micro level from both the teachers' and the students' perspectives. To be more specific, one year after the teachers participated in the TPD course reported in Article I, I investigated how some of these teachers taught reading strategies in their English L2 lessons, how they offered these strategies to their students, and how the students used and saw personal purposes for using these strategies.

As accounted for in Section 4.2, the article involved two samples; a teacher sample including five of the 21 upper secondary teachers from Article I, and a student sample comprising 64 of these five teachers' students. The empirical data were collected in Phase 2 during and after the classroom observations, and included three qualitative data sources; field notes from observations in the five L2 lessons, five written teacher narratives based on the observed lessons, and five audio-taped group interviews with the 64 students – one interview in each class immediately after each lesson. The research questions were: *How do upper secondary teachers include reading comprehension strategies in their English L2 instruction, and how do they help their L2 learners to socially and personally engage with texts by*

*providing them with strategies?* As analytical concepts, I used reading instruction, reading strategies, and metacognitive awareness (see Section 4.4.1), and in the analysis I used the strategy categories from Article I (see Article II, Appendix A).

In the observed L2 lessons, I found that reading strategies were not only taught by the teachers, but also used by the students. The teachers taught a small repertoire of the strategies from the TPD course one year earlier, suggesting that their metacognitive awareness observed at the end of the course had been sustained over time. In doing this, the teachers demonstrated an awareness of strategies as tools for learning in the Vygotskian sense (1981), and confirmed current trends in reading research about the need to offer strategies as tools in support of students' reading development in the disciplines (Lee & Spratley, 2010; Moje, 2008, 2010; Moje et al., 2011), in this case in English L2. The teachers' choice of which strategies to teach in the L2 lessons, was mainly based on the need to help students understand the disciplinary texts at hand.

Another finding was that the teachers in the vocational programmes demonstrated a gradual release of responsibility to their students (Duke & Pearson, 2002), among other things by first giving them tightly structured reading tasks and then more open tasks (Edwards, 2015). In comparison, the teachers in general studies provided mainly tightly structured tasks without releasing the responsibility for the choice of strategies to their students.

A third finding concerned how strategy use in the L2 lessons seemed to have a personal purpose for the vocational students, but not for the students in general programmes. While students in both programmes showed metacognitive awareness of which reading strategies to use, and how and why to use them, there was a difference in their expressed purposes of use. The students in the general studies classes primarily explained their strategy use by activities inside the classroom, e.g. teacher or task demand, while the vocational students recognised a direct gain from using the strategies related to their study programme or their reading of texts of interest. The vocational students revealed that using reading strategies as tools helped them become not only better readers, but also better workers in the workshop and at their workplaces. In comparison, the students in general studies admitted that they saw few reasons for using reading strategies when the teacher or task did not require them to do so.

In this article, I discuss how these findings illustrate the point made by Derry (2008), that the legacy of Vygotsky is not to see abstraction and generalisation as ends in themselves, but as conceptual tools that need to be used *for learning*. I argue that the reasons behind the students' use are not only their level of reading proficiency or a willingness to follow teacher

instructions, but more importantly the personal relevance they ascribed to the strategies. It could be that, although the students in the general programmes gave every impression of meeting the task demands, the teaching and learning environment did not enable these students to recognise the usefulness of the strategies as tools that might be used for other purposes than those required in the L2 classroom, seeing the strategies as ends in themselves. The students in general studies might not have seen any personal purposes for using strategies related to their future studies and work because these are too far into the future for them. In comparison, the vocational students looked upon their activities in the workshops and at workplaces as an integrated part of their upper secondary education. It might of course also suggest that the texts at hand for the students in general studies were easily understood and did not pose challenges to their reading comprehension, and that they therefore did not experience a personal need to apply the strategies.

These findings are further discussed in light of Duke and Pearson's (2002) *Gradual release of responsibility model* and Edwards's (2015) *Quadrant model*, seeing that there is a balance of on the one hand gradually releasing responsibility for strategy use to the students, while on the other, being consciously aware of what Duke et al. (2011) emphasised, namely that teachers tend to expect students to be able to apply strategies independently too soon, or forget that each time readers encounter a more complex text, they will need to step back and receive guided practice on how to apply a familiar strategy in the new situation.

I do not in any way imply that the reading comprehension strategies were not used on an individual basis by the students in general programmes; my aim is simply to distinguish between the teachers retaining responsibility in the reading process instead of encouraging the students to take responsibility for applying strategies independently, without teacher guidance. Thus, when I argue that the instructional practices in my data support different uses of strategies in the observed L2 lessons, it is to distinguish between strategy use that appears to be a direct result of collaborative use in tightly structured tasks that are explicitly framed by the teacher in the L2 classroom, and strategy use as a result of a student's individual choice in more open reading activities (Duke et al., 2011; Edwards, 2015). My main argument is the relevance of acknowledging that adolescents profit as readers when their reading activities are linked to interest, engagement, and domain knowledge (Alexander & Fox, 2011; Alvermann, 2002).



### 5.1.3 Article III

Title: Brevik, L.M., Olsen, R.V., & Hellekjær, G.O. (under review, 2015). The complexity of second language reading: Investigating the relationship between L1 and L2 using upper secondary level national reading tests. The article is currently under review for *Journal of Research in Reading*.

This article investigated student reading proficiency on a macro level. The aim of this article, which I wrote in collaboration with Research Professor Rolf Vegar Olsen and my main supervisor, Professor Glenn Ole Hellekjær, was to compare how upper secondary students across Norway performed within and across two national reading tests, one in Norwegian L1 and one in English L2, and whether their reading proficiency in the L2 can be accounted for by gender, study, and reading proficiency in the L1. As the first and corresponding author, I designed the study, collected and analysed the data, and penned the article, except the theory/review, which was written by Hellekjær. Olsen re-analysed all my original analyses to ensure consistency. He also wrote parts of the methods and results sections. All three authors revised parts of each other's sections in the writing process.

As accounted for in Section 4.2, the sample in this article comprised 10,331 upper secondary school students. The data were collected in Phase 3 and included two quantitative sets of test scores, one in L1 and one in L2, which were analysed using regression analysis. The research questions were: (a) *To what extent is a poor reader in English L2 also a poor reader in Norwegian L1?*, (b) *How do gender and study programme relate to the students' L1 and L2 reading scores?*, and (c) *To what extent is there a statistical relationship between their L2 reading scores and the variables L1 reading, gender, and study programme?* Reading proficiency was the main analytical concept (see Section 4.4.1), which in this article included the variables “overall L2 proficiency”, “overall L1 proficiency”, and the lower order constructs “L1 reading comprehension” and “L1 language”. In addition, gender and study programme were control variables in the analysis. We analysed cross-linguistic reading proficiency for the entire sample, as well as for the poor readers in the lowest quintile in each language.

First, we found that the poor readers were mainly students in vocational studies (78%), equally distributed among boys and girls. A main finding was that only half of them were poor readers in both languages, while the others struggled in one language, being more proficient readers in the other. The most unexpected finding among these was a group of

outliers who were poor readers in the L1 (20<sup>th</sup> quintile), while being proficient readers in the L2 (60<sup>th</sup>–100<sup>th</sup> quintiles). The majority among these were boys in both study programmes. We also identified a second group of outliers, who were poor readers in the L2 and proficient readers in the L1. These were mainly girls in vocational studies. Second, in the sample as a whole, the analysis showed that, as expected, the girls read better than the boys, and the students in general studies read better than the vocational students. However, using Cohen's *d*, we found that the gender effect size was relatively smaller than the effect size for study programme. Moreover, while the gender effect was relatively smaller for the L2 than the L1, the study programme effect was relatively larger for the L2 than the L1. Third, our multiple regression models (A-E) suggested a relationship of only 1% between L2 reading proficiency and gender (Model A), while there was a positive relationship of up to 18% between L2 reading proficiency and study programme (Model B). Further, the regression models confirmed a strong positive relationship of up to 45% between L1 and L2 reading proficiency (Models C and D). Together, the combination of gender, study programme, L1 reading comprehension, and L1 language accounted for up to 49% of L2 reading proficiency (Model E). These models are presented in Article III, Table 7.

In the article, we discuss these findings in light of Bernhardt's (2011) *Compensatory model of second-language reading*. As this is the first large-scale study comparing Norwegian L1 and English L2, we argued that, while Bernhardt's model indicates that L1 literacy accounts for up to 20% of L2 literacy, and L2 language knowledge another 30%, with the remaining 50% as unexplained variance, our higher explained variance can be understood in light of the linguistic closeness between Norwegian and English (e.g. Koda, 2007), combined with a generally high level of English proficiency in Norway (e.g. Ibsen, 2004; Crystal, 2012). In addition, we suggest that the statistical relationship of up to 18% between study programme and L2 reading proficiency in our study partially accounts for the unexplained variance in Bernhardt's model (2011).

We further argue for the importance of using reading test results on a cross-linguistic basis to provide richer information about the students' reading comprehension than what is available in L1 and L2 test results separately. Our main argument is that assessing students' reading comprehension should not primarily be a matter of identifying poor readers who fall below the intervention benchmark in the separate tests, but should instead involve learning more about what characterises all students' reading proficiency in general.

## **5.2 Discussion of research contributions**

One might argue that Articles I and II operate at a different level from Article III, which means that using a mixed methods approach has enabled me to analyse data on both micro and macro levels. The quantitative data from the reading tests (Article III) analysed reading proficiency on a macro level, providing a context for the qualitative micro level studies of reading instruction, reading strategies, and metacognitive awareness among teachers and students (Articles I and II). In order to elaborate the findings, I will now discuss the empirical, theoretical, and methodological contributions of this thesis.

### **5.2.1 Empirical contribution**

The main empirical contribution of this thesis is increased knowledge about how teachers teach and readers read related to developing reading comprehension in English L2. The thesis shows that L2 reading proficiency is closely related to reading proficiency in the L1 and study programme, although this is not a linear relationship for all students. The thesis further shows how reading comprehension strategies can be valuable learning tools to help readers achieve and repair L2 comprehension, and that the teachers do teach such strategies. Nevertheless, while reading strategies have the potential of being valuable tools for learning, this potential has to be realised in practice, by students using strategies independently. In the following, this empirical contribution will be elaborated.

First, the thesis has found some evidence that teachers teach reading strategies in the classroom to help their students develop reading comprehension (Articles I and II). This contribution indicates that strategy instruction actually takes place in classrooms, despite the little evidence of such practices present in recent research (Aasen et al., 2012; Anmarkrud & Bråten, 2012; Moje, 2008; Pressley, 2008). The English L2 teachers instructed their students to use a small repertoire of reading strategies flexibly. This repertoire typically included a combination of strategies among the following: setting purposes, activating prior knowledge, previewing and predicting, skimming and scanning, active listening, careful (close) reading, making inferences, noting key words, visualising, summarising, relating to study, and discussing with peers (Block & Duffy, 2008; Brantmeier, 2002; Duke et al., 2011; Fisher & Frey, 2008; Grabe, 2009; Hopfenbeck & Roe, 2010; Lee & Spratley, 2010; NRP, 2000; OECD, 2010). The teachers' written reflections on their instructions indicated that they found these strategies to be effective tools for teaching and developing reading comprehension. This is a positive contribution, not least in light of Pearson and Cervetti's (2013) comment that although there has been broad consensus for more than two decades that strategies should be

taught, “research has failed to identify the optimal set of reading strategies or even the optimal number of strategies” (p. 531).

Second, this thesis portrays the design and instruction of L2 reading comprehension differently in the general and vocational study programmes (Articles I and II). While the teachers in both programmes taught reading strategies in a manner resembling Duke and Pearson’s (2002) *Gradual release of responsibility model* (see Section 2.1.4) and Edwards’s (2015) *Quadrant model* (see Section 3.2), a marked difference was found. All teachers initially introduced the strategies, by naming and describing them, or modelling them in action. As Pearson (2011) pointed out, it is not always necessary to start by modelling the strategies before guided practice, but such instruction was observed in the classrooms in this thesis. The strategies were then used collaboratively by the students, with guided practice from the teachers, in tightly structured tasks. However, after these introductory reading activities, a difference emerged between the study programmes; in general studies, the teacher continued to explicitly suggest strategies, texts, and tightly structured tasks, while in vocational studies, the teacher provided more open tasks, requiring the students to choose or apply strategies and/or texts, releasing the responsibility to the students. At the end of the lessons, reading comprehension and strategy use was assessed or reflected on collectively in all classes. Researchers have voiced a concern that strategies instead of texts have become the focus of reading instruction (Fisher & Frey, 2008) and that strategy instruction runs the risk of becoming too mechanical (Wilkinson & Son, 2011). However, while the former concern did not seem to be the case in the participating teachers’ classrooms, as they taught strategies related to learning aims and subject matter, teaching their students to *use* the strategies as tools when working on disciplinary texts, the latter concern raises the question of whether this was the case in the general programme classes.

A third empirical contribution is highlighting that independent and flexible use of reading strategies depends greatly on students seeing personal purposes for doing so (Articles I and II). While the vocational students saw strategic reading as useful to them personally, the students in general studies primarily used strategies to respond to teacher and task demands. If strategies are to be means to an end (Pearson & Cervetti, 2013), their potential as tools for learning must be realised. This argument suggests that the teachers should not expect proficient readers to uncritically embrace strategies as tools for learning. As Lee and Spratley (2010) argued, “even those students who enter high school reading at or even above grade level still need to be taught how to read deeply in the disciplines” (p. 18). The indications here are that students might not be able, by themselves, to see how strategy use is useful to them.

However, by explicitly pointing to students' personal purposes for using strategies as tools, the teacher can create what Vygotsky (1981) called *active learners*, where the tools help the students propel themselves forward as learners (Edwards, 2015). By carefully designing reading instruction in such a manner as to make strategic reading relevant for the students, the teacher can frame reading strategy use in motivating ways, regardless of whether the purpose is related to the students' own interests or the formal L2 curriculum.

Fourth, this thesis has contextualised L2 reading proficiency among upper secondary school students in Norway (Article III). The findings revealed that, in Year 11, girls read better than boys, but that smaller differences exist between the genders in the L2 than in the L1, a finding that is consistent with the results from the national reading tests for younger students in Years 5 and 8 (UDIR, 2013). However, these findings show that gender is only one part of the picture, as L2 reading proficiency is also strongly related to study programme. The only available data for upper secondary school students up until now have been overall achievement and examination grades in the school subjects at the end of Year 11, which means that this thesis provides new information about these students as *readers* of English L2 at the beginning of the school year. Being able to distinguish between study programmes provided information that the students in general programmes were more proficient readers than the students in the vocational programmes, that a bigger difference existed between these students in the L2 than in the L1, and that among the poor readers a clear majority were vocational students. However, and contrary to the overall achievement and examination grades, most of the students in both programmes performed better when reading in the L1 than in the L2. Only one group of students was identified as markedly better readers in the L2 than in the L1, being among the poorest readers in the L1 and the most proficient readers in the L2. They were mainly boys across study programmes, and were labelled "outliers".

Across the three articles, this thesis highlights the notion that, while using reading strategies will not transform a poor reader into a good reader, helping adolescents see the potential of using reading strategies as tools might develop their reading comprehension, thus contributing to their development as active strategic L2 readers. I therefore appreciate the importance of metacognitive awareness among students and their teachers, to achieve and repair reading comprehension, and also the importance of such awareness being framed by the English teacher in the L2 classroom.

### 5.2.2 Theoretical contribution

A theoretical contribution of this thesis is the *Mode of reading continuum* which I developed in Article I (see Article I, Figure 1). It is based on the “Nike mode of reading” and the “Sherlock Holmes mode of reading” combined with the empirical findings in Phase I of this thesis. The model is intended to contribute to a nuanced view on the common tendency to separate reading skills and strategies, which researchers tend to describe as dichotomies; reading skills as the automatic part of reading fluency and strategies as the more conscious awareness of how to read for understanding (e.g. Grabe, 2009). While neither skills nor strategies are necessarily successful in developing reading comprehension (Afflerbach, Pearson, & Paris, 2008), a danger arises in seeing strategies as ends in themselves, if they are used mechanically or rigidly in decontextualised activities (Block & Duffy, 2008; Fisher & Frey, 2008; Pearson, 2011). The main idea in the *Mode of reading continuum* is to see strategies as means to an end by focusing on the aspect of metacognitive awareness in the students; to monitor their reading comprehension, and to see strategies as powerful tools to enhance comprehension when needed. In the first mode, students read as suggested by the Nike slogan “Just do it!” without analysing the task or considering how to read<sup>1</sup>. The Sherlock Holmes mode of reading has a broader vision of a deliberate puzzle resolution, reading like a detective by analysing the task, searching for clues not explicitly stated in the text, and monitoring comprehension before, during, and after reading. In this latter mode, the students ideally apply strategies as tools to bridge gaps in comprehension. However, in order to learn whether there really is a continuum, the model needs to be further tested.

Another theoretical contribution is to employ a Vygotskian framing to reading research. In my thesis, this framing has contributed to expanding our knowledge about how learners are active in their own development, how they use tools in their learning, and how teachers can support this process (Claxton, 2007; Daniels, 2005, 2008; Derry, 2008; Edwards, 2014, 2015, in press; Vygotsky, 1981). The Vygotskian framing has also provided new perspectives on how reading strategies were offered as tools at a short TPD course and in L2 classrooms, as seen in Articles I and II, and how these tools were interpreted by the students and their teachers in Article II. The need to focus on how the learner engages with cultural meanings and tools is what the Vygotskian approach adds theoretically to the L2 reading

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<sup>1</sup> The *Mode of reading continuum* was created by the author, based on the “Nike mode of reading” and the “Sherlock Holmes mode of reading”, provided by Professor P. David Pearson in a private conversation in 2013 at the University of California, Berkeley (see Brevik, 2014; Pearson, 2012).

research. Combining the *Quadrant model* (Edwards, 2015) with the *Gradual release of responsibility model* (Duke & Pearson, 2002), I identified how the participating teachers supported the students by being the “directors” of learning environments. The contribution of this aspect of my research is that I am linking the teaching and use of strategies to a pair of frameworks which potentially add to how teachers might be introduced to developing comprehension strategies in L2 learners. The combination of the two models enabled me to see that, although the teachers encouraged the students to be active readers by offering strategies as tools to enhance their reading comprehension, they spent more time directing the students in tightly structured tasks, and less time supporting their independent use of strategies, releasing the responsibility to the students in vocational studies, while doing so in a very gradual manner in general programmes. As I argue in Article II, this finding is particularly important if we want to see reading as a school activity and as a lifelong endeavour – where L2 learners engage in strategic reading independently without being explicitly asked to do so, whether in the private sphere, in higher education, or in future work.

A third theoretical contribution of this thesis is the confirmation of the cross-linguistic aspect of Bernhardt’s (2011) *Compensatory model of second-language reading*. Using multiple regression modelling in Article III, this analysis has not only confirmed the model, but has done so with large-scale data from 10,331 readers. The study also applied Norwegian L1 and English L2 to the model for the first time. One of the components in this model is the interrelation between L1 and L2 literacy, where the L1 is said to account for up to 20% of L2 literacy. The findings in Article III showed that L1 explained up to 49% of the overall reading proficiency in English L2 when gender and study programme were included in the regression models. This finding is not controversial, as the effect of L1 on L2 has been confirmed in reading research (e.g. Bernhardt, 2011; Brantmeier, 2006; Grabe, 2009). However, these findings point to a larger L1 effect than in most other studies, and also shed light on the often *un*-explained variance in L2 reading comprehension. As I argued in Article III, these findings support Koda’s (2007) claim that reading in an L2 is a complex phenomenon involving two languages. The findings also show the importance of taking the cross-linguistic aspect of reading into consideration in English L2 reading instruction.

### 5.2.3 **Methodological contribution**

According to Kamil et al. (2011), the field of reading research “has witnessed an increased realisation that cognitive variables interact with social and cultural variables in complex ways, necessitating the use of more complex methods of data collection” (p. xviii). Attending to the

developments within the field of reading research over the last quarter century, I used a mixed methods approach in my data collection (Bazeley & Kemp, 2012; Creswell, 2013; Johnson & Christensen, 2013). Doing so allowed me to design my research in phases, where each phase influenced the next, and where the interrelation between reading instruction, reading strategies, metacognitive awareness, and reading proficiency within and across the L1 and the L2 were identified among upper secondary school teachers and their students.

Including fewer dimensions in a research design would not have provided the same insight into the *richness* of the material. I believe this is crucial to identifying not only students' use of reading comprehension strategies as tools for learning, but also to delve into the teachers' own descriptions of their instructional practices as processes of teaching and learning. Reading comprehension research is commonly confined to fewer dimensions, due to limitations in the data collection and analysis processes, where for example either teachers or students participate, and either qualitative or quantitative data are collected. They typically focus either on what teachers do, what students do, or what students or teachers think about their own strategy use. Therefore, the main methodological contribution of this thesis arises from my mixed methods approach and obtaining the teachers' *and* the students' perspectives on the development of reading comprehension.

Another methodological contribution was the template developed for data collection in Article I. As described under reliability (Section 4.5.1), the template functioned as an essential methodological tool in all data collection situations in Phases 1 and 2. Commonly, researchers design tools that are fine-tuned to each data collection situation. However, using the same template enables comparison of data across time, situations, and perspectives, which hopefully minimises the threat to reliability.

A final methodological contribution in this thesis is the merging of large-scale student reading scores from two tests in different languages. Indeed, as presented in Article III, this is the first time data from two such reading tests have been merged in Norway, by using the same student ID across the two datasets. In this study, merging the data entailed an enormous workload since each participating school had to manually label the L1 score for each student with the L2 ID. The utility of this approach argues that national assessments could profit from a policy of using the same student ID on different tests, thereby enabling comparisons across not only reading in two languages, but also with results for numeracy, which students at various levels participate in during a few weeks annually in Norwegian schools.



To sum up this section, I provide an overview of some methodological strengths, limitations, and consequences of this thesis, based on the articles. Most of these are discussed in Section 4.5 on research credibility. Table 5A is therefore intended as a final overview.

**Table 5A.** *Strengths (+) and limitations (-) in the individual studies reported in my thesis, enabled by the mixed methods design.*

	<b>Strengths (+) / limitations (-)</b>	<b>Consequences</b>
<b>Phase 1 – Article I (TPD course)</b>		
+	The study comprised 21 teachers, in general and vocational programmes, at 11 schools.	This variety is favourable to capture individual and structural differences.
+	Built on their existing knowledge of reading comprehension strategy instruction.	Enabled teachers to make their implicit practices explicit.
+	Included teaching in own classes.	Enabled teachers to apply information from the TPD course during the course.
+	The teachers were unaware that they would be asked to report on own instruction.	Allowed exploration of spontaneous and individual metacognitive reflection in the data.
+	Comprehensive information was obtained from each teacher.	Ability to assess multiple steps of the TPD course before and after the lecture and teaching in own classes.
+	The template developed in Article I was re-used in Article II.	Contributed to research reliability.
+	The design in Article I influenced the design in Article II.	Contributed to research validity.
+	Data sources were combined (written narratives and oral interviews).	Contributed to robustness of data and validity.
-	Teachers had volunteered to participate in the TPD course.	They might be among the more motivated teachers and particularly interested in developing their competence, which might influence representativity.
-	The number of teachers and schools included was limited.	The findings are not generalisable for upper secondary school, although they might be representative.
-	Self-reported data.	The data might reflect intentions rather than practices.
<b>Phase 2 – Article II (Classroom observation)</b>		
+	The study comprised both teachers and students, both male and female, in general and vocational programmes.	This variety is favourable to capture individual differences on teaching and learning.
+	The study followed five L2 teachers from Article I over one year.	Advantageous for observing changes in L2 instruction over time. Contributed to validity.
+	All L2 students in the observed classrooms participated.	This is favourable when exploring the student perspective on what went on in the L2 classrooms.
+	Self-reported data were combined with classroom observation.	Contributed to the robustness of data and validity.
+	The template from Article I was re-used in field notes, narratives, and interviews.	Contributed to reliability.
+	Strategy categories from Article I were used in the analyses.	Contributed to validity.
-	The number of teachers, students, and schools included was limited.	The findings are not generalisable for upper secondary school, although they might be representative.
-	Observation of one L2 lesson only in each classroom.	No information on variation within these classrooms was obtained. This adds uncertainty to the representativeness of the instructions. However, the observed lessons were similar to what was reported by these teachers at the TPD course the year before and to the student information about their reading practices.

**Phase 3 – Article III (Reading tests)**

+	Unique design.	The merging of the L1 and L2 test results enabled a comparison of reading proficiency across the two languages for the first time at this level.
+	Large sample of students ( $N=10,331$ ).	The results might be applicable to the general upper secondary reference population at this level.
+	Students were geographically distributed across the entire country.	This has positive influence on representativity.
+	Overlap of student samples in Articles II and III.	Favourable when comparing relationships between information in the interviews and their average L2 reading proficiency for general and vocational programmes, respectively.
-	Student ID applied only to the reading tests in Article III.	Unable to identify reading proficiency for the individual students in Article II; only school level and study programme.
-	The L1-L2 sample included only 14% of the student population at this level, and they were not randomly selected.	This adds uncertainty to the generalisability of the data. However, the sample is fairly large and representative.
-	Existing tests (secondary data).	Unable to influence test construct. No information on omitted data, such as socio-economic status (SES) and L2 language knowledge related to Bernhardt's (2011) compensatory model of second-language reading.
-	No information on reading comprehension strategy use was available for the students.	Unable to assess the effect of strategy use on reading proficiency.

As illustrated in Table 5A, the strengths and the limitations are intertwined. I nevertheless hope that the consequences of the strengths outweigh those of the limitations. Building on and contributing to L2 reading research, I find the main strength to be the examination of reading comprehension processes in upper secondary school from different angles: through teacher and student self-reports, classroom observation, and reading tests.

### 5.3 Concluding remarks

Since 2011, when the data collection for this thesis began, I have been constantly reminded of the lack of reading research on Norwegian upper secondary schools *in general* – and in particular on English as a second language. The present thesis is my contribution towards redressing this situation.

The challenge presented in the opening chapter of this thesis – students who start at the beginning of a text and read all the words one after another without considering alternative approaches – has not been identified in this thesis. Instead, my findings are more optimistic. I found teachers who designed their reading instruction to help students enhance their reading comprehension, and explicitly helped make their students aware of how and why reading comprehension strategies could function as learning tools to develop as L2 readers. While the findings are optimistic in the sense that they portrayed students who indeed used

the strategies offered to them, I am somewhat concerned for the proficient readers in general programmes who used the strategies due to teacher or task demand only. This finding has implications for teaching. I would strongly urge teachers to reconsider how they can best relate their teaching to the personal purposes of their students. Drawing connections between their English L2 studies and future studies or work might be one solution, as proved to be the case in the vocational classes. An explicit focus on purposes related to the immediate school situation might also prove fruitful for the more proficient readers.

Another implication from the research presented in this thesis is the need to consider how teachers should be taught to use results from reading tests in their instructional designs. In an educational landscape where standardised testing has become the rule, I suggest that the results be used to characterise students' reading proficiency across the L1 and the L2. Using the same student ID across tests and registering all results electronically would make such an analysis possible. I urge central educational authorities to consider this aspect, as well as how information from the tests can be used to develop students' reading comprehension.

Finally, but not conclusively, I argue the relevance of seeing teacher education and teacher professional development as a continuous process in an ever-changing educational environment. This is a way of avoiding what Edwards (2014) called "local dialects" and points to a potential challenge that teachers primarily adopt the teaching practices at local schools, instead of being encouraged and enabled to bridge theory and practise in their education with teaching practices. Teacher professionalism cannot be the sum of local teaching practices; it also requires the ability to apply their teaching competence in any local context.

The use of reading test results and teaching of reading strategies – and the metacognitive awareness that comes with it – can be tools for teachers. Developing perspectives on how to enhance reading comprehension for their students to understand increasingly more demanding texts within and across the L1 and the L2 has the potential to change not only how teachers teach and readers read, but also, as suggested by Virginia Woolf, to believe in themselves as readers.

Once she knows how to read there's only one thing  
you can teach her to believe in and that is herself.

Virginia Woolf, *Monday or Tuesday* (1921)

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## Appendix 1

Examples of analysis of the teacher interviews in Phase 2. These examples illustrate how metacognitive awareness is identified in the teachers' utterances.

Interview notes (pre-interview)	Analytical concepts
<p><b>Lisbeth:</b> What do you ask your students to do during reading comprehension instruction?  <b>Teacher A:</b> I usually ask my students to read the text.  <b>Teacher B:</b> I present the title, provide the text or the page number in the textbook, and ask the students to start reading.</p> <p>(my translation)</p>	<p><b>Metacognitive awareness:</b> The teachers emphasised the act of reading. They did not articulate their instructional practices in further depth.</p>
<p><b>Lisbeth:</b> Which reading comprehension strategies do you ask your students to use before, during, or after reading?  <b>Teachers (five):</b> None.  <b>Nora:</b> Reading strategies? We don't use them. We just read.  <b>Lisbeth:</b> Could you give some examples of reading strategies you teach?  <b>Maria:</b> Well, it's hard to describe, as I use reading strategies as an integrated, natural part of my teaching.  <b>Teachers (ten):</b> Yes [and nodded].</p> <p>(my translation)</p>	<p><b>Metacognitive awareness:</b> It seemed that Nora and five others did not teach strategies, but they did not tell why. Maria and ten others said they do, but although Maria said she used reading strategies, neither she nor the others provided any examples.</p>
Interview notes (post-interview)	Analytical concepts
<p><b>Magne</b> [volunteered the information, not responding to any question from me]: Now that we have discussed reading strategies ... I realise that I do. I do use reading strategies a lot in my teaching.</p> <p>(my translation)</p>	<p><b>Metacognitive awareness:</b> Magne made his prior practices explicit, saying that he realised that he had used strategies before. He seemed to have experienced a renewed strategic awareness, rather than necessarily having acquired new strategic knowledge.</p>

## Appendix 2

An example of data analysis in Phase 2 including field notes and teacher narrative from the same lesson. This example illustrates how the different analytical concepts are identified in the field notes from the observed lesson and in the teacher’s narrative based on the same lesson.

	<b>Field notes (during classroom observation)</b>	<b>Analytical concepts</b>
VOCATIONAL STUDY (Teacher: Linda)	<p><b>Linda:</b> I know that in your Norwegian lessons you have paid attention to different ways of reading. We have not focused so much on this in English. But now we are going to do so. We are going to read to find some specific information. That is what you are going to do now, individually.</p> <p>[<i>The students did the tasks.</i>]</p> <p><b>Linda</b> [to all]: When you did this task, can you tell me what you did? Now I’m talking about your reading strategies.</p> <p><b>Student L6:</b> When I listened to the text, I tried to make a timeline in my head so when I read the questions I knew if the answers were in the beginning or later in the text.</p> <p><b>Student L7:</b> I scanned the text, and then I tried to locate the answers.</p> <p>(originally in English)</p>	<p><b>Reading instruction:</b> Linda introduced the task, but did not use the term “reading strategy”. She asked the students to “find some specific information”. After they had done the tasks, she did however refer to the same concept as “reading strategies”.</p> <p><b>Reading strategies:</b>            Student L6 seemed to use the strategy <i>visualise</i> by describing how she “tried to make a timeline in [her] head”, offering not only a description of how she read, but also why.</p> <p>Student L7 seemed to use <i>scanning</i> as a reading strategy, also describing how and why she chose to read strategically. See comments below from the teacher.</p>
	<p><b>Teacher narrative (after classroom observation)</b></p> <p>Written underneath the heading <i>Didactic reflection</i>:</p> <p>Based on the fact that we had not repeated the different learning strategies before the lesson, I think the students were good at both assessing the different reading strategies they had used as well as labelling them (in English!). One of the students used the term “scanning” quite naturally even though I had not used it earlier in the lesson. The reading activity lasted a little longer than I had planned, so at the end of the lesson I was tempted to skip the round of questions about which strategies they had used, but fortunately I did not since these reflections were very useful! The students showed themselves to be very conscious of their own strategies.</p> <p>(my translation, but the word “scanning” was originally written in English by Linda)</p>	<p><b>Reading strategy:</b> Scanning</p> <p><b>Reading instruction:</b> Linda pointed out that she did not introduce or model the strategies in her instruction. She wrote that her students had still used reading strategies in the lesson and in their answers. She found her students to be conscious of the strategies they had used, especially the student using the label “scanning”.</p> <p><b>Metacognitive awareness:</b> Although this was not a category I used in the analysis of the narratives, this is definitely metacognitive awareness, reflecting on her instruction and on the students’ learning.</p>

## Appendix 3

Examples of analysis of different student interviews in Phase 2. These examples illustrate how the different key analytical concepts are identified in the students' utterances.

	Interview transcript, Excerpt 1	Analytical concepts
GENERAL (Teacher: Ruth)	<p><b>Lisbeth:</b> What do you get out of summarising?  <b>Student R1:</b> We grasp the content.  <b>Student R2:</b> You go through the text once more and write it in your own words so that you understand it.            (my translation)</p>	<p><b>Reading strategy:</b> Summarising</p> <p><b>Reading instruction:</b> All the students had summarised a text they had read, and during the lesson, the teacher asked some of them to read their summaries aloud.</p> <p><b>Metacognitive awareness:</b> Student R2 described how she used the strategy: "you go through the text once more and write it in your own words". Both students explained why they used the strategy: "grasp the content" and "so that you understand it [the text]".</p>
GENERAL (Teacher: Magne)	<p><b>Student M1:</b> By using the word cloud ... he sort of activated a reverse brain storm.  <b>Lisbeth:</b> You activate a reverse brain storm?  <b>Student M1:</b> Yeah.  <b>Lisbeth:</b> Brilliant. How?  <b>Student M1:</b> Instead of getting one word that you know about and then trying to imagine hundreds or thousands of different words, you get many words and you have to sort of get it down to one word – one name.            (my translation)</p>	<p><b>Analytical concepts</b></p> <p><b>Reading strategy:</b> Visualising (graphic organiser)</p> <p><b>Metacognitive awareness:</b> Student M1 expressed that he knew how to use the word cloud as a visual strategy for activating prior knowledge, or for drawing inferences based on the words in the word cloud.</p>
GENERAL (Teacher: Magne)	<p><b>Interview transcript, Excerpt 3</b></p> <p><b>Lisbeth:</b> Did you know, for example, why you were supposed to read the text?  <b>Student M2:</b> Because we were going to get some tasks.  <b>Lisbeth:</b> Do you think that is sort of a good reason?  <b>Student M2:</b> Yes. Probably.            (my translation)</p>	<p><b>Analytical concepts</b></p> <p><b>Reading strategy:</b> None</p> <p><b>Metacognitive awareness:</b> Lack of metacognitive awareness of L2 reading.</p>
GENERAL (Teacher: Magne)	<p><b>Interview transcript, Excerpt 4</b></p> <p><b>Student M3:</b> I first look at the heading. If we have to read it. Then I just start reading. If it is a book, then I first see what it is about. How ... if it interests me.  <b>Lisbeth:</b> Aaah. To get an overview?  <b>Student M3:</b> Yeah.  <b>Lisbeth:</b> Okay, so you usually open the book and read the heading. But you said <i>if you had to read it</i>, so if you're sort of instructed [that] this is something you should read, then you read the heading? And then start reading?  <b>Student M3:</b> [nods]  <b>Lisbeth:</b> Okay. What if you read at home and no one has told you to do it?  <b>Student M3:</b> Then I just read.            (my translation)</p>	<p><b>Analytical concepts</b></p> <p><b>Reading strategy:</b> Skimming and scanning</p> <p><b>Metacognitive awareness:</b> Student M3 described how he skim reads ("look at the heading", "I first see what it is about"). He also revealed that he does so because he is instructed to. When he is at home, and can choose how to read, he "just reads". He said he did not use reading strategies on his own initiative.</p> <p>The latter resembles the Nike mode of reading (Just do it!) in the <i>Mode of reading continuum</i> described in Article I (see Fig. 1, p. 55).</p>

VOCATIONAL (Teacher: Petter)	<p><b>Interview transcript, Excerpt 5</b></p> <p><b>Lisbeth:</b> Even though you started by saying that you knew nothing about the US, you did.  <b>Student P1:</b> Yes ... well, but these are things that come gradually.  (my translation)</p>	<p><b>Analytical concepts</b></p> <p><b>Reading strategies:</b> Activating prior knowledge and visualising (graphic organiser).</p> <p><b>Reading instruction:</b> The teacher initiated the strategy use in the classroom, where the students participated in a collective use of a mind map as a graphic organiser to visualise their prior knowledge about the USA.</p> <p><b>Metacognitive awareness:</b> This strategy instruction helped student P1 become aware of what he knew about the USA, which he did not remember on his own. This suggests that learning took place collectively first, which afterwards helped him understand information about the USA individually.</p>
VOCATIONAL (Teacher: Andreas)	<p><b>Interview transcript, Excerpt 6</b></p> <p><b>Student A6:</b> If it [a text or a drawing in an English lesson] concerns, for example, the workshop, then I read closely. But if I am going to read something from a book or a couple of pages that has nothing to do with what I do, then it becomes somewhat boring and I just read.  (my translation)</p>	<p><b>Analytical concepts</b></p> <p><b>Reading strategies:</b> Relating to study and careful (close) reading.</p> <p><b>Metacognitive awareness:</b> The student explained that he consciously chose to use the strategy (“then I read closely”) when the text content related to his study (“concerns, for example, the workshop”), as opposed to “just reading” when he asked to read other texts. The latter resembles the Nike mode of reading described in the <i>Mode of reading continuum</i> (Article I, Fig. 1, p. 55).</p>
VOCATIONAL (Teacher: Linda)	<p><b>Interview transcript, Excerpt 7</b></p> <p><b>Lisbeth:</b> Do you use strategies when the teacher does not ask you to?  <b>Student L1:</b> Yes.  <b>Student L2:</b> Yes. It depends on which task I am going to do, and then I choose reading strategies myself. If we get a task where I need to find a year, then I search until I find it.  <b>Lisbeth:</b> And you do this without the teacher asking you to do so?  <b>Student L2:</b> Yes. Then I don't have to read five pages.  <b>Student L3:</b> I make questions. And then have others ask me questions. I read until I find something that I think is important in a text. Then I stop, and then I ask another one a question about it. And see if they remember it. And then the opposite; they ask me about what they find important.  (my translation)</p>	<p><b>Analytical concepts</b></p> <p><b>Reading strategies:</b> Scanning (L2) and questions (L3).</p> <p><b>Metacognitive awareness:</b> Students L2 and L3 were metacognitively aware of which strategies to use, as well as why and how to use them. In particular, student L3 seemed to be gaining automaticity in doing so. They mentioned personal choices for using reading comprehension strategies, regardless of the teacher's instructions or assessment situation.</p> <p>Student L2's point about not having to read five pages could suggest lack of strategic behaviour. However, later in the interview, she explained that she wanted to avoid reading more than necessary depending on the task, which indeed indicated a strategic awareness of consciously choosing strategies to help her meet the task demand.</p>
VOCATIONAL (Teacher: Linda)	<p><b>Interview transcript, Excerpt 8</b></p> <p><b>Lisbeth:</b> If you are asked to read a text, without any instructions, what is the first thing you do, then? All you know is that you have to read the text.  <b>Student L4:</b> I read the heading.  <b>Lisbeth:</b> Okay.  <b>Student L4:</b> I look for ....  <b>Lisbeth:</b> You look for ...?  <b>Student L4:</b> I look for how long it is.  <b>Lisbeth:</b> Yes? How long it is? So you flip through the pages throughout the text?  <b>Student L4:</b> Yes, I turn the pages until I see the end, so when I have read well into the text, I think “now it's not so much left”.  <b>Lisbeth:</b> Yes?  <b>Student L5:</b> I don't! Then I completely lose my motivation. I just read and then “Oh, it's finished. Fine”.  (my translation)</p>	<p><b>Analytical concepts</b></p> <p><b>Reading strategies:</b> Skimming (L4) and lack of strategic reading (L5).</p> <p><b>Metacognitive awareness:</b> Student L4 reported looking at the heading and flipping through the pages until the end of the text. She described it as a physical action that helped her know how much was left. She did not reveal whether this strategy helped her understand the content.</p> <p>Student L5 revealed that she just read on until she reached the end of the text. This was not something she just happened to say; rather, she described her way of reading as different from Student L4's (“I don't!”). This interaction suggested that her strategy was a conscious choice to keep up her motivation for reading until the end of the text. Student L5's reading resembles the Nike mode of reading in the <i>Mode of reading continuum</i> (see Article I, Fig. 1, p. 55).</p>

	Interview transcript, Excerpt 9	Analytical concepts
VOCATIONAL (Teacher: Linda)	<p><b>Lisbeth:</b> In the English lessons, are you instructed how to read a text?  <b>Student L4:</b> We mostly listen.  <b>Lisbeth:</b> So you listen first?  <b>Student L4:</b> Yes, and then I remember most of the text because then I read in the book at the same time.  <b>Student L5:</b> You remember where it [specific information] is in the text.  <b>Student L4:</b> Yes, yes.  <b>Student L5:</b> And that is why, when you get a question, you remember that, yes, that was in the middle of the text and then it [the answer] must be about here, and then you can read in the book.  <b>Lisbeth:</b> Does this happen every time, that you listen during the lesson and both of you read the text while listening?  <b>Student L4:</b> We haven't had that many English lessons yet, so we haven't had so—  <b>Student L5:</b> We've had two more texts or something. Three!  <b>Student L4:</b> Yes, three texts where we have listened all the time.  <b>Lisbeth:</b> Yes, but it is such a useful thing for you to do that when she [the teacher] turns on the sound, then you listen?  <b>Students L4 and L5:</b> Yes.  <b>Lisbeth:</b> It is not like you're daydreaming and thinking about something else? No.  <b>Student L5:</b> But we are both perhaps a bit special, for we are both, like ... we pay attention during the lessons and such [...].  <b>Lisbeth:</b> As far as I heard, the teacher did not ask you to read along while listening, so this is something you choose to do yourselves?  <b>Student L4:</b> Yes. I often read past the [audio] text.  <b>Lisbeth:</b> Ah, yes.  <b>Student L5:</b> I read quicker than what they read on the audio tape. Then I read quickly, and then when I am finished with the text, then I go back to where the [audio] text is and then I read along.  <b>Lisbeth:</b> Then you get it twice.  <b>Student L5:</b> Yes, at least the ending.</p> <p>(my translation)</p>	<p><b>Reading strategy:</b> Active listening.</p> <p><b>Reading instruction:</b> The students used this strategy because they were all instructed by their teacher to listen to the audio tape collectively during the L2 lesson, although the teacher did not explicitly ask them to read while listening.</p> <p><b>Metacognitive awareness:</b> Both students revealed how they read the text while actively listening to an audio version of the text. They chose to use the strategy to understand the text individually while listening. They insisted that they paid attention instead of daydreaming, explaining that they read quicker than the audio text. Student L5 revealed that she then went back to where the audio text was, to read from there on for a second time, this time along with the audio text.</p> <p>Their descriptions of how they read further than the audio text and then went back indicated that they listened actively and that they consciously chose to do so without being asked. They revealed that this strategic reading helped them understand the text.</p>
	<b>Interview transcript, Excerpt 10</b>	<b>Analytical concepts</b>
GENERAL (Magne)	<p><b>Student M4:</b> When I read the heading, and perhaps some of the first words of the paragraphs, and if I think, like, I have heard that before, and [then] I kind of sum up all the things I know about it. And then it's much more easy to read. I just add it to what I know.  <b>Lisbeth:</b> Okay, so you think about what you know from before?  <b>Student M4:</b> Yeah.</p> <p>(originally in English)</p>	<p><b>Reading strategy:</b> Activating prior knowledge.</p> <p><b>Metacognitive awareness:</b> Student M4 revealed that during reading he reflected on his prior knowledge, which helped him understand the text content.</p>



# Part II

## The Articles





# Article I



# Article II<sup>2</sup>

II

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<sup>2</sup> In February 2015, the article was accepted with minor changes by *Scandinavian Journal of Educational Research*. In April 2015, a revised version of the article was accepted for publication.



# Article III

