

How do Norwegian beginner students' experience the reading of English course material at university?

A mixed-methods study

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Abstract

In the present thesis I investigate beginner university students' academic English reading proficiency, paying special attention to students studying the natural sciences and mathematics. I also question whether the compulsory, first-year English course in upper secondary school is adequate preparation for the reading of English course material and whether there has been an improvement in reading proficiency since Hellekjær's (2005) study. To investigate these issues I use a mixed-method, quantitative-qualitative approach, in which the qualitative interviews were designed to elaborate and complement the data collected in the quantitative study. A total of 142 students from two faculties at the University of Oslo answered the questionnaire, and five of these were later interviewed.

My findings indicate that there has been an improvement in university students' academic English reading proficiency since 2005, but why there has been an improvement and whether this improvement is sufficient needs to be discussed. Moreover, when reading English course material the results indicate that students for the most part struggle with the lower-level reading processes, in particular fluent reading and handling unfamiliar vocabulary. In addition, the respondents struggle with the use of reading strategies and with how to read in an efficient way.

My findings also indicate that the respondents do not become more proficient readers of English by completing the advanced English courses in upper secondary school, compared to those who only finish the compulsory, first-year English course.

Moreover, the results show that students studying natural science and mathematics in higher education often do not choose to continue with English in upper secondary school the second and third year because of the need to specialize in science and mathematics to meet the admissions requirements for higher education.

In conclusion, I suggest that the implication of the study is that there is a need for more and better English instruction that focuses more on the teaching of reading and reading strategies. Moreover, I suggest that additional research is needed to investigate students' English reading proficiency, and whether or not the compulsory, first-year English course is adequate preparation for the reading of English course material in higher education.

Sammendrag

Målet med min masteravhandling er å undersøke de engelske leseferdighetene til nye studenter på høyere utdanning, med spesiell fokus på realfagsstudenter. Jeg stille også spørsmål ved om det obligatoriske engelskkurset det første året på videregående skole er tilstrekkelig forberedelse til lesing av engelsk pensumlitteratur i høyere utdanning, og om det har vært en bedring i situasjonen siden Hellekjær (2005) gjennomførte sin studie. For å undersøke dette bruker denne undersøkelsen en ”mixed-methods” metode med en kvantitativ-kvalitativ tilnærming, hvor de kvalitative intervjuene brukes til å utfylle den kvantitative undersøkelsen. 142 studenter fra to fakultet ved Universitet i Oslo deltok i undersøkelsen, og fem av disse ble intervjuet.

Mine funn tyder på at studentenes akademiske engelsk leseferdigheter har forbedret seg siden 2002, men at det er uklart hvorfor det har vært en forbedring og om denne forbedringen er tilstrekkelig. Videre viser resultatene at det studentene sliter med nå de leser engelsk pensumlitteratur er å lese flytende og håndtere ukjente ord. Dessuten mangler respondentene kunnskap om bruk av lesestrategier og hvordan lese på en effektiv måte.

Mine funn tyder også på at respondentene ikke får bedret sine engelske leseferdigheter ved å fullføre de engelske programfagene i videregående skole sammenlignet med de som kun fullfører det obligatoriske engelskkurset det første året.

Videre viser resultatene at studentene som studerer realfag i høyere utdanning at de ikke velger å fortsetter med de engelske programfagene i videregående skole fordi de må spesialisere seg i realfagene for å oppfylle opptakskravene til høyere utdanning.

I konklusjonen foreslår jeg at implikasjonen av undersøkelsen er at det er behov for mer og bedre engelskundervisning med mer vekt på lesing og lesestrategier. Videre foreslår jeg at mer forskning må gjennomføres for å undersøke norske studenters leseferdigheter i engelsk, og hvorvidt det obligatoriske engelskkurset på videregående skole gir tilstrekkelig forberedelse til lesingen av engelsk pensumlitteratur i høyere utdanning.

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1 Introduction

During my second year of upper secondary school I was an exchange student in Maine, USA, and this stay led to a new interest for the English language. When returning to Norway I completed the advanced, elective English courses in upper secondary school. It was my American host family and my English teacher during the third and final year that inspired me to apply for the teacher education, and to study English.

When I started studying English at university I lived with friends who were studying medicine. They had to read a number of difficult and very academic scientific English texts during their first and second year. They had only followed the compulsory, first-year English course in upper secondary school, this because they had specialized in science and mathematics their second and third years to meet the admissions requirements for higher education. I noticed how much my friends at times struggled with their English texts, and saw how this could affect their understanding of the subject they were studying. Later, when studying English didactics I started thinking about this, and I became interested in academic reading proficiency and the importance of English instruction in upper secondary school as preparation for the reading of English course material in higher education. In addition, my impression was that studies in natural sciences, mathematics and medicine have large amounts of English course material on their reading lists. I also have seen that the students attending these studies, who desperately need good English skills, often cannot chose to continue with English the second and third years of upper secondary school because of admissions requirements to higher education.

This led my becoming interested in academic reading (Huang, 2006; Uso-Juan, 2006; Grabe, 2009), and about the English proficiency level of Norwegian students in higher education after reading Glenn Ole Hellekjær's article *Academic English reading proficiency at the university level: A Norwegian case study* (2009) as part of an English didactics course. In my thesis I therefore want to look deeper into this issue in order to provide a picture of how Norwegian students read and experience the reading of English texts in higher education, in particular students studying natural science and mathematics, and whether or not English in upper secondary school provides adequate preparation for higher education with regard to the reading of English course material.

1.1 Purpose

In today's globalized world, being a proficient reader of English is necessary in many social, educational and professional settings. In higher education in Norway students have to read English course material, and this is especially true for students studying the natural sciences and mathematics. Therefore, Norwegian students today need to be proficient and strategic readers of English when in higher education in order to effectively comprehend the information they read in the English course material. This study aims at investigating how students experience reading English course material and whether the first year English course is adequate preparation for reading in higher education. Students who complete the Educational Program for Specialization in General Studies in upper secondary school in Norway have college and university admissions certification and can apply for admission to universities and colleges. However, some studies in higher education, especially in the fields of the natural sciences, mathematics and medicine, require a certain amount of courses in science and mathematics from upper secondary school and high point grade averages for admission.

Moreover, students who choose to specialize in the natural sciences and mathematics the second and third year of upper secondary school receive extra credits that may be necessary when applying for higher education. Therefore, the present study is in part focused on students studying natural science and mathematics when it is expected that they only follow the compulsory, first-year English course in upper secondary school. This raises the questions to whether or not the compulsory first-year English course is adequate preparation for higher education and whether it provides students with the necessary knowledge and skills for reading large amounts of English course material in higher education. These are some of the topics and issues that will be investigated in the present study to give information about Norwegian students' academic English reading proficiency and English instruction in upper secondary school in Norway today.

1.2 Relevant research about reading English in Norway

In the following section I will give a brief review of relevant studies that discuss reading English in Norway. First, I will give a brief overview over the use of English textbooks in

higher education in Norway. Second, on research about how reading is taught in Norway, in which English instruction in upper secondary school is briefly discussed. Third, I will look at research on Norwegian university students' English reading proficiency.

1.2.1 Use of English textbooks in higher education in Norway

Norway is a small country and also a small language community with about 5 million members. Since the WW2 the English language has had a strong influence and impact on research and higher education in Norway. The Parliamentary Report, *Mål og mening* (2008) refers to studies that express “a strong development in favor of English in the course of the last decades of the last century, mostly in the field of natural sciences, but also in social sciences and the humanities.” (p. 6). As a result, Norwegian students in higher education are today required to read large amounts of English course materials and therefore, need to be proficient readers of English. In a report for NIFU (Nordisk Institutt for studier av Innovasjon, Forskning og Utdanning), Vera Schwach and Carmen From Dalseng (2011) map the use of Norwegian and English language at the beginner level of higher education. The report looks at five studies at Norwegian universities and colleges, and the amount of Norwegian and English language used in course material, and how this developed from 2000 to 2010. While they found that English course material is used extensively, although Norwegian course material overall “actually has strengthened its position since 2000” (p. 15, my translation). However, the differences between the five studies included in the study are significant and the amount of Norwegian course material increased in some subject areas from 2000 to 2010, while it decreased in some. Physics students read the least Norwegian course material, since 71% of the course material was in English in 2010, which is an increase from 65% English course material in 2000 (p. 15). In comparison, the amount of Norwegian course material increased for students of sociology from 66% in 2000 to 77% in 2010. Moreover, Schwach and Dalseng (2011) found that there is a difference in the language used in course material between studies at universities and colleges. They found the total amount of English course material to be slightly higher at universities compared to colleges. It has to be noted that this study only look at five subject areas and that is “too few to make general conclusions about the relationship between the use of Norwegian and English course material” (p. 17, my translation).

Gjert Kristoffersen, Marita Kristiansen and Unn Røyneland (2013) refer to Gunnar Sivertsen (2011, NIFU) and his overview of the language of research publications in Norway

and the development from 2005 to 2010. Sivertsen found that the amount Norwegian publications have not increased significantly, and is low compared to English. The areas that has the least amount of publication in Norwegian are medicine and health, natural sciences and technology, in contrast humanities and social sciences clearly has a higher amount of Norwegian publications. When there is little and no increase in publications in Norwegian, it is not surprising that the alternative is using English research publications in higher education. Moreover, because Norway is such a small language community, it is not always practical or economically possible to find and use course material in Norwegian (Schwach & Dalseng, 2011), especially when it can be difficult to find updated research publications in Norwegian. Vera Schwach, Synnøve Skjersli Brandt and Carmen From Dalseng (2012) explain that Norwegian publishers, with some exceptions, do not seem “to have focused on developing course material in the subject area mathematics and natural sciences. Possibly because it is very expensive to produce course material in these subjects” (p. 8, my translation). As a result, English course material is used for practical reasons, such as time and more relevant research available, and due to economical reasons when publishers do not find it profitable to publish Norwegian course material.

As mentioned, Norway is a small language community and there is a lack of course material in Norwegian, especially in the field of natural science and mathematics, which in turn means that students have to read English texts in higher education. Due to practical and economical reasons universities often choose to use English course material instead of Norwegian, and with the Internet English texts and research are more easily accessed and used more frequently than before. At the same time, “Norwegian institutions of higher education take for granted that English as a foreign language (EFL) instruction in upper-secondary schools effectively prepares students for the use of English in higher education” (Hellekjær, 2009, p. 199). Whether Norwegian students are proficient enough readers of English course material in higher education and whether or not English instruction in upper secondary school is adequate preparation for reading in higher education is therefore an important question.

1.2.2 Teaching reading in the Norwegian school.

Over the years, more research on how reading is being taught in Norway has been carried out. Especially as a result of the PISA test that among others examine Norwegian 10th graders reading proficiency. The analysis of the results of these tests with regard to reading shows a

failure in teaching students how to *read to learn*. Marit Kjærnsli and Astrid Roe (2010) analyze and discuss the results of the PISA test from 2009, and explain that the “Norwegian school does not have a long tradition in teaching reading and assessing pupils reading proficiency in lower secondary school” (p. 32, my translation).

When discussing the results of the PISA test from 2009, Kjærnsli & Roe (2010) explain:

There is no reason to believe that the pure reading proficiency is poor among Norwegian pupils, instead the problem is that they lack training in reading more academic texts and texts that require the understanding of large amounts and detailed factual knowledge. This represents a type of reading proficiency that many will have to deal with both in higher education and later employment situations (p. 91, my translation)

Not being able to read more academic and detailed texts can be serious when looking back at the amount of English course material in higher education. The PISA test look at pupils reading proficiency in Norwegian, and when the analysis of the results show that they struggle with academic and detailed text in Norwegian, one can assume that this is something they struggle even more with in English, which is their second language. Training in this should undoubtedly be a clear part of both Norwegian and English instruction in lower and upper secondary school in order to adequately prepare pupils for higher education and the challenges they face there.

1.2.3 English instruction in upper secondary school

As mentioned above, I have lived with friends who studied medicine and noticed that they struggled with the English course material when they started their higher education. In upper secondary school they knew that they needed a certain number of elective courses in science and mathematics during their second and third years to meet the admissions requirements for higher education, and therefore did not choose to specialize in English. It has been my impression that this is common today when many university studies require these courses for admission. Kaja Skarpaas (2011) found in her master thesis, *Subject choice and the English programme subjects in Norwegian upper secondary school*, that many students cannot, or do not want to, choose the advanced English courses available in the second and third years because they prioritize other subjects, most commonly courses in science and mathematics. Moreover, because of the high grade point average to get accepted into some higher educations, especially studies in natural science, mathematics and medicine, the need for the

extra credits you get by choosing to specialize in science and mathematics, which you do not get if specializing in languages or social sciences, most probably makes the choice of not choosing English an even easier one.

The present study was to a high degree inspired by Hellekjær's dissertation *The Acid Test: Does Upper Secondary EFL Instruction Effectively Prepare Norwegian Students for Reading of English Textbooks at colleges and Universities* (2005). In his study, Hellekjær found that the respondents' English reading proficiency does not improve much for those who completed the advanced English courses the second and third year of upper secondary school, compared to those who only completed the compulsory, first-year English course. The low difference in scores is alarming and indicate that it is the content and quality of the EFL teaching that explain the lack of proficiency, and not the number of teaching hours (Hellekjær, 2009, p. 210). Moreover, Hellekjær (2009) explains that "66% of the upper-secondary students did not achieve Band 6 level on the IELTS Academic Reading Module (Hellekjær, 2005, 2008)", which is a test used by universities in English speaking countries for admission purposes, for which Band 6 is most commonly the requirement. The results of Hellekjær's (2005) study painted "a highly unflattering picture of the efficiency of the advanced English course as preparation for higher education" (Hellekjær, 2009, p. 210). The results of the present study will be compared to the findings of Hellekjær (2005) to see whether or not there has been an improvement since 2002.

The Knowledge Promotion Reform that introduced a new curriculum in 2006 (LK06), strengthened the focus on reading and reading strategies, and reading was forefronted as one of five basic skills in all subjects. Despite this, Hellekjær (2012) explains that "other studies also confirms that teaching of reading and reading strategies have a low priority both in teaching Norwegian (Anmarkrud, 2009) and other subjects (Thuland and Hekestad, 2009)." (p. 154, my translation). Moreover, despite the strengthened focus on reading in the curriculum, Linn Hovd Faye-Schjøll (2009) found in her master thesis that look at reading in upper secondary school that there are serious shortcomings in the reading instruction given and that pupils read a limited amount, and that teaching reading is not a focus among the respondents in her study. Hellekjær and Therese Hopfenbeck (2012) found that pupils in upper secondary school read relatively small amounts of English literature, and that "the number of books read among pupils the second and third year is almost without change from 2002 to 2011." (p. 98, my translation). This indicates that the new curriculum from 2006 has not increased the amount of books read in English despite the strengthened focus on reading. Nevertheless, they found a slight improvement in reading scores for those who completed the

first year English course from 2002 to 2011, and asks whether “reading on the Internet may have lead to an increase in amount of reading and therefore reading scores” (p. 99, my translation). Another alternative they mention is increased exposure to English through the media.

1.2.4 Norwegian students’ academic English reading proficiency

In Norway, pupils receive English instruction from the first grade onward and it is compulsory all the way up through the first year of upper secondary school. That amounts to eleven years of formal instruction in English as the second language. In addition, pupils have the choice of electing advanced English courses the second and third year of upper secondary school.

As mentioned, the present study was to a high degree inspired by Hellekjær’s dissertation from 2005 when it investigated Norwegian university students’ academic English reading proficiency. Here Hellekjær found that close to 35 percent of the asked university students had difficulties when reading English course material. The study examined the nature of students reading difficulties as well as “to what extent the poor academic English reading scores found at the upper-secondary level persist in higher education.” (Hellekjær, 2009, p. 199). Moreover, Hellekjær (2005) found that a significant percentage of the asked university students were at risk of falling below the linguistic threshold level, meaning that they are not proficient enough in the L2 and are therefore unable to transfer skills and strategies from the L1 to the L2. As mentioned, higher education in Norway today requires that students have good English reading proficiency since large amounts of the course material is in English. This might be especially true for students studying natural science and mathematics when they most likely face more English course material compared to other areas of study. Hellekjær (2005) found that English instruction in upper secondary school fails in the development of the academic English reading proficiency necessary for studying in higher education, which in other words means that English in upper secondary school does not necessarily effectively prepare students for higher education. This will be discussed further in later sections of this thesis.

1.3 Research statements

The overall aim of the present thesis is to investigate Norwegian university students' academic English reading proficiency, and is expressed in three research aims that show the different aspects this thesis want to examine. The research aims are:

1. to investigate beginner university students' academic reading proficiency and their experience in reading English course material in higher education in Norway, paying special attention to students studying natural science and mathematics.
2. to examine whether or not the respondents found the compulsory, first-year English course in upper secondary school adequate preparation for reading in higher education.
3. to see if there has been an improvement in students English reading proficiency compared to the results found in Hellekjær (2005), and whether the strengthened focus on teaching reading as part of the Knowledge Promotion reform from 2006 has had an impact on students English reading proficiency.

In order to approach the issues outlined above the present study uses a mixed-methods research design with a quantitative-qualitative approach. The quantitative study uses a shortened version of the questionnaire designed and used by Hellekjær (2005), and therefore the results of the two studies can be compared. The qualitative approach was included to get more descriptive and detailed information about how students experience reading English course material, and about whether or not they felt that English in upper secondary school had prepared them for reading English course material in higher education.

The present study is concerned with investigating beginner university students who do not have previous study experience that may have an influence on their academic English reading proficiency. By choosing beginner students it is easier to see whether or not English in upper secondary school has effectively prepared them for reading in higher education. Moreover, the study is interested in investigating students studying natural science and mathematics due to the expectation that they specialized in science and mathematics in upper secondary school and therefore did not have room for the elective, advanced English course in their schedule. Moreover, as studies have shown, students studying natural science and mathematics have large amounts of English course material in higher education and therefore need to be proficient readers of English.

1.4 Outline of the thesis

This thesis consists of a total of eight chapters. Chapter 1 is the *Introduction* that provides the rationale and the research statements for the study. Chapter 2, *Theory*, provides a definition of reading and an overview of relevant research on reading in the first- and second-language. In addition, it gives an overview of English instruction in upper secondary school in Norway including the elective courses available. Moreover, it also gives a short explanation of how this present study will contribute to research on English reading proficiency in Norway. Next, Chapter 3, *Method*, comprises sections on research design, research tools, procedure, selecting the sample, analysis, validity and reliability. The study uses a quantitative-qualitative mixed-methods approach; therefore throughout the chapter the two approaches will be presented individually when they were conducted separately. The results of this thesis will be presented in three chapters. Chapter 4, *Results - the quantitative study*, will present the results maintained from the quantitative study. This chapter will be structured according to the constructs of the questionnaire (Appendix A) and throughout the findings will be compared to Hellekjær (2005). In Chapter 5, *Results – the qualitative study*, the results from the qualitative study are presented and this section will be structured according to the interview guide (Appendix B) used. Next, in Chapter 6, *Bringing the two studies together*, the results from the quantitative study and the qualitative study will be brought together and discussed in relation to each other. In Chapter 7, *Discussion*, I will begin by giving a brief summary of my findings and discuss these in relation to the research statements outlined in this chapter. Next, I will discuss my findings in light of relevant theory on reading and studies investigation academic English reading proficiency in Norway and English instruction in upper secondary school. Last, I will provide some final remarks on the validity of the results of the present study. Chapter 8, *Conclusion*, will give a presentation and discuss what I believe to be the most important implications of the results of this thesis, and suggest possible further research on the issues outlined in this thesis.

2 Theory

2.1 Introduction

In this chapter I provide a brief overview of relevant research and theories within the field of reading. First, I start with a definition of reading, and continue with an overview of the reading process, of strategy use, and the importance of background knowledge. This first part focuses on reading in the first language (L1). Next, I will focus on theories that discuss reading in a second language (L2), including general theories on reading in a foreign language and differences and similarities between reading in the first language and the second language. Finally, I will give a review of research on academic reading and English instruction in upper secondary school in Norway. The chapter concludes with a short mention of how the present study will contribute to research in the field of reading in English in Norway.

2.2 Defining reading

Reading is a process, which many researchers have tried to explain and define, so to give a complete overview of reading is therefore nearly impossible (Alderson, 2000). In fact, the nature of reading is complex and different researchers have different ideas of what reading is and what goes into the reading process. Ivar Bråten (2011) defines reading as “recovering and creating meaning by scanning and interacting with written text” (p. 45, my translation). Recognizing the written text and making meaning of it, is a simple explanation of what reading is, and of what the reader does when reading. Likewise, Elizabeth Bernhardt (1991) defines reading “as an act of “taking in”; as one of “understanding”; and as one of interpretation” (cited in Bernhardt, 2011, p. 7). Bernhardt (2011) also refers to the definition of reading in Reading Study Group Report (RAND, 2002):

We define reading comprehension as the process of simultaneously extracting and constructing meaning through interaction and involvement with written language (p. x) (Cited in Bernhardt, 2011, p. 7)

RAND emphasize that reading is a meaning-making process that takes place in the brain of the individual reader, and the importance of the reader’s input language (L1) and processing abilities.

Another definition of reading that is considered in research of the nature of reading is the provided by PISA (Organisation for Economic Co-operation and Development (OECD), 2006):

Reading literacy is understanding, using and reflecting on written texts, in order to achieve one's goals, to develop one's knowledge and potential and to participate in society. This definition goes beyond the notion of *reading literacy* as decoding and literal comprehension: it implies that *reading literacy* involves understanding, using and reflecting on written information for a variety of purposes. It thus takes into account the active and interactive role of the reader in gaining meaning from written text. The definition also recognizes the full scope of situations in which *reading literacy* plays a role for young adults, from private to public, from school to work, from active citizenship to lifelong learning. (...) Literacy also provides the reader with a set of linguistic tools that are increasingly important for meeting the demands of modern societies with their formal institutions, large bureaucracies and complex legal systems. (p. 46)

This is a complex and expanded definition, but according to Bernhardt (2011), this definition is important because of its

recognition that reading does involve intricate linguistic tools for gaining information *and* that the act of understanding has a role well beyond transmission: it includes notions of citizenship and effective and meaningful social participation (p. 17).

The PISA definition goes beyond reading as a process of understanding and comprehending written text, but includes other components that have an impact on one's private, academic and professional life. William Grabe (2009) argues that reading cannot be defined with "simple statements" (p. 14), but rather that "reading is understood as a complex combination of processes" (p. 14). Grabe proposes ten processes that, when combined, define reading:

Processes that defines reading

1. A rapid process
2. An efficient process
3. A comprehending process
4. An interactive process
5. A strategic process
6. A flexible process
7. A purposeful process
8. An evaluating process
9. A learning process
10. A linguistic process

Grabe (2009) p. 14

These processes together describe *what* fluent readers do when encountering written texts and, according to Grabe, "these processes, together, provide a good, if complex, definition of reading." (p.16). He refers to these as "functional components of reading" and argues that one can not define reading without discussing the different processes that take place when reading

which make it possible to comprehend written text. The goal for readers must be to read as fluently as possible, and therefore having knowledge and the ability to master these processes must be the goal. I will look more at the processes that take place during reading in the following section.

2.3 The reading process

As mentioned, reading is a complex activity that includes many different, but equally important elements. Reading involves a number of processes that interact to make reading fluent and efficient. Grabe (2009) suggests that the processes that are involved in reading are actually what define reading. When looking at how we read we look at the different processes and how they work together to form meaning from written text. Researchers have different opinions about which processes are more important and what order they follow, therefore there are different theories with regard to reading processes. However, when discussing the reading process, the distinction between lower-level and higher-level processes has to be recognized.

2.3.1 Lower-level processes

Lower-level processes include word recognition, syntactic parsing and meaning encoding. Word recognition is often considered as one of the most important processes when reading. Not only is rapid word recognition required for fluent reading, but several studies have shown that word recognition in the L1 have an influence on L2 reading and word recognition (Akamatsu; 2003, Chikamatsu; 1996, Grabe; 2009). Labeling these processes as lower-level does not, according to Grabe, “mean that they are simple or undemanding; rather, they form a group of skills that have the potential to become strongly automatized” (p. 21). These lower-level processes partially form the basis for reading, especially fluent reading when the reader need some degree of lower-level abilities in order to comprehend the information presented in the text. Bråten (2011) recognizes that “word recognition, especially fluent and automatic word recognition, is the bottleneck in developing good reading comprehension” (p. 45, my translation). He explains that in order to achieve good reading comprehension one should be able to decode and identify words in a written text in a precise manner. When the word recognition process is automatic and not a source of distraction for the reader, the reader has more energy to spend on understanding the meaning of the text and other processes that goes into reading.

2.3.2 Higher-level processes

When reading it is important to recognize the written text and understand the meaning of the words (lower-level processes), but in addition there are a number of component skills or higher-level processes that also play an important part in the reading process. According to Grabe (2009) the component abilities of higher-level processing includes “text-model formation (what the text is about), situation-modeling building (how we decide to interpret the text), inferencing, executive-control processing (how we direct our attention), and strategic processing” (p. 21). Reading to learn and understanding the information in a text requires the reader to process information beyond the lower-level. Panayiota Kendeou, Paul van den Broek, Mary Jane White and Julie Lynch (2007) explain that interpreting information is one of the core components in many definitions of reading comprehension. Moreover, Kendeou, et. al. (2007) suggest that “at the core of comprehension is our ability to mentally interconnect different events in text and form a coherent representation of what the text is about” (pp. 28-29). Understanding what you read is more than just recognizing words, in that you have to connect the information in the text with what you know and interpret the information so that it is understandable to you.

2.3.3 Reading for different purposes

When reading it is important to understand and know the purpose for why one is reading. What a reader’s purpose is depends on different situations, settings and the readers’ personality. J. Charles Alderson (2000) explains that “the reason you are reading a text will influence the way you read it, the skills you require or use, and the ultimate understanding and recall you have of that text” (p. 50). Therefore, it is important that readers are aware of the reason for why they read a certain text, and then apply the proper skills and strategies to be able to comprehend that text. According to Grabe (2009) “our needs to read in different ways in educational and professional settings requires that we read differently depending on the context and our goals” (p.7). These are different types of academic reading that vary, depending on the purpose of reading. In the present study, university students were asked about their reading of English course material, and reading academic texts or course material in higher education require students to have knowledge about and skills to read according to purpose. Grabe (2009) lists six major purposes of reading in an academic setting:

Academic purposes of reading

1. Reading to search for information (scanning and skimming)
 2. Reading for quick understanding (skimming)
 3. Reading to learn
 4. Reading to integrate information
 5. Reading to evaluate, critique, and use information
 6. Reading for general comprehension (in many cases, reading for interest of reading to entertain).
-

Grabe (2009), p. 8.

These are all different processes in which the readers' purpose is to comprehend information at different degrees. According to an article published for the Norwegian Directorate for Education and Training (2013) pupils in lower secondary school "should be able to locate and retrieve information from text, they should be able to interpret and draw conclusions and they should be able to reflect on and assess the form and content of texts" (p. 4) The article continues by arguing that textbooks at this level mostly ask pupils to locate information in tasks, which is a good exercise, but pupils do not get sufficient training in other ways of reading. Fluent readers are able to adjust their way of reading according to the reading purpose and situation.

2.3.4 Reading to learn

In this study *reading to learn* is particularly important because it "is often carried out in academic and professional settings" (Grabe, 2009, p. 9). When the information in a written text is considered important to the reader or essential in order to gain knowledge for the future, we read to learn. For students in higher education, reading to learn and remembering information is a daily activity.

Reading to learn demands that the reader not only understand and interpret the ideas presented in the text, but is also able to recall this information when that is needed. According to Astrid Roe (2008) there is a clear failure in the teaching of reading to learn and giving pupils training in this. Other studies have also shown that teaching pupils to read and reading strategies has a low priority in the Norwegian school system (Anmarkrud, 2009; Thuland and Heskestad, 2009). Learning to read to learn is important, especially in educational settings where readers are required to read and remember large amounts of information. According to Grabe (2009) we read relatively slowly when reading to learn, and "the effective reader organizes the content within a frame that is coherent and accurate with respect to the information presented in the text" (p. 9). Being able to organize information in

this manner, require that one manage the lower-level processes, in particular word recognition, and have a clear idea of the purpose for reading, as well as the skills to adjust the use of strategies in an effective way. In order to properly remember the information in the text, the reader also has to be able to connect the new information with the knowledge already stored in the long-term memory in an efficient way.

2.3.5 Bottom-up and top-down

Most of the time, researchers agree that reading is complex and that there are multiple processes that work simultaneously to assure reading comprehension. However, what order in which these processes occur has caused some discussion. Hellekjær and Hopfenbeck (2012) explain that “The prevailing models portrays reading as an interactive process where the reader alternates between ‘bottom-up’- and ‘top-down’-processing of text” (p. 88, my translation). Bråten (2011) states that “Is the word recognition (decoding) good, the reading comprehension will also be good; is the word recognition (decoding) bad, then the reading comprehension will also be bad” (p. 16, my translation). This is what is known as the **bottom-up** perspective in reading. It is based on the belief that word recognition or decoding is the most important process when reading, and in addition have the greatest influence on reading comprehension. In teaching bottom-up processing the focus is first on word form and making this process automatic, before looking at the meaning of the text and the readers personal interpretation of the information. Bernhardt (2011) explain that “bottom-up models, referred to as data driven, presume that that reading proceeds from lower-level processes such as recognizing words, up through conceptual-level processes” (p.36). Similarly, Alderson (2000) explains that “bottom-up approaches are serial models, where the reader begins with the printed word, recognizes graphic stimuli, decodes them to sound, recognizes words and decodes meaning.” (p. 16). These are components that build on each other in a hierarchic order and each component is individual from the others. Again we see that meaning-making comes last, and the focus is on recognizing the word and structure. It is desirable that the word recognition process is automatic when this will make the reader more focused on the meaning of the individual word as well as the text as a whole.

In contrast to the bottom-up perspective is the **top-down** perspective that, according to Bråten (2011), “claims that reading comprehension depends on much more than fundamental word recognition skills. And primarily depends on the readers knowledge about the content and structure of the text” (p. 46, my translation). This perspective claims that the

information the reader contributes to the text is as, if not more, important that the readers ability to decode and recognize the written words. When the reader has some knowledge about the content of the text, he or she will be able to understand the main idea of the text and make more accurate guesses about what he or she may expect to understand after reading, as well have a more reflected discussion of the content after reading. According to Alderson (2000) the knowledge the reader contributes with when reading comes from schema-theoretic models that “accounts for the acquisition of knowledge and the interpretation of text through the activation of schemata: networks of information stored in the brain which act as filters for incoming information.” (p. 17). Another explanation of top-down processing is provided by Bernhardt (2011). It “presumes that good reading is always conceptually driven, and that lower-level processes are important only in so far they might signal or point toward conceptual features” (p. 36). This perspective highly value the readers’ contribution to the text and according to Bernhardt (2011) most studies look to the top-down perspective, especially the research and models provided by Goodman (1968) and Smith (1971).

However, it is important to note that not all researchers agree that the reading process is either bottom-up or top-down. According to Bråten (2011) it is logical to look at reading comprehension as involving both bottom-up and top-down processing. That “fundamental word recognition undoubtedly plays an important role in reading comprehension, but is as important as higher-level components, especially the readers previous knowledge about the content of the text” (p.46, my translation). Alderson (2000) agrees with this view of reading and explains that “neither bottom-up nor the top-down approach is an adequate characterization of the reading process” (p.18). He looks at another model that he believe to be more adequate; the **interactive models** “in which every component in the reading process can interact with any other component, be it ‘higher up’ or ‘lower down’” (p. 18). Stanovich (1980) agrees that there is a third model of reading and explain that within the interactive models

Each level of processing is not merely a data source for higher levels, but instead seeks to synthesize the stimulus based on its own analysis and the constraints imposed by both higher and lower-level processes (p.85)

(Cited in Bernhardt (2011), p. 26)

Those who prefer the interactive models believe, to a higher degree, that the lower- and higher-level processes work together in ensuring reading comprehension. Stanovich (1980) also points out that “neither view provides a sufficient explanation of reading” (Cited in

Bernhardt (2011), p. 36), and therefore a third view is necessary when trying to describe and understand the reading process.

2.4 What do we do when we read?

As we have seen, reading is a complex process that involves different components and variables and that combined let us, as readers, make meaning out of written text. When we read we use our knowledge and engage in a number of mental activities to make meaning of the written text form, some of this mental activity is automatic, while some is conscious (Alderson, 2000, p. 14). The conscious strategies are deliberate choices the reader makes, for example skipping a page or paragraph while reading, while the automatic skills are activities the reader does unconsciously and are therefore automatized, for example word recognition or visualizing the setting of a novel. According to Hellekjær and Hopfenbeck (2012), reading and comprehending English course material depends on the readers “English skills on the one hand, especially their vocabulary, and on the other hand their ability to read strategically” (p. 89, my translation). Further they explain that what distinguished strategies and skills is whether or not these are deliberate or automatic. Strategies are deliberate choices made by the reader, while skills are carried out automatically by the reader. Being a skilled reader is important when studying in higher education, but in addition it is important to be a strategic reader that have knowledge about different reading strategies and use these to read in an efficient way.

2.5 Strategy use

When reading a text, the reader is able to decode words, recognize and understand the meaning of the word and sentence, and comprehend the information in the text. All readers are, at different levels, able to do this, but what separates good or fluent readers from poor readers is often considered their use of reading strategies. Reading comprehension strategies can, according to Bråten (2011), be defined “as mental activities that the reader chooses to implement to acquire, organize and elaborate information in the text, as well as to monitor and control his or her own reading comprehension” (p. 67, my translation). The reader must be aware of how to read the text as well as how to work with the text in order to remember the information and chose the best way to do this. To be able to monitor the reading the

reader must have knowledge about different reading strategies and be able to name the purpose of the reading. Bråten (2011) divides reading comprehension strategies into four categories that describe the strategies purposes. *Memorizing strategies* are used in order to recall or repeat the information in the text by taking notes or reading a smaller part of the text multiple times. This makes it easier to remember the content of the text and store the information in the long-term memory. *Organizing strategies* are used when the reader want to connect and organize the information in the text, for example by drawing mind maps or write summaries. When doing this in an effective matter it is easier to get a broad and overall understanding of the topic and the learned information. *Elaborating strategies* are useful when the reader want to make the text at hand more meaningful by elaborating and processing the information using prior knowledge. When a reader does have extensive knowledge about a topic, it will be helpful to draw on prior knowledge in order to understand and comprehend the information in the current text. *Monitoring strategies* are used by readers to check, monitor and evaluate their learning outcome during or after reading. By verifying the comprehension of what has been read, the reader can continue reading with confidence in that he or she has understood and remembers the information in the text (pp. 67-68, my translation). The present study look at student at university level and their reading of English course material, and all of these four are important strategies when reading course material because students are required to understand, remember and put information to use in different situations. In addition, for students to be able to read effectively they need to be strategic readers, which in turn means having knowledge and practice in using reading strategies.

Many researchers have discussed the use and properties of reading comprehension strategies, and there are different views in how much detail reading strategies should be discussed. Grabe (2009) explains, “effective reading-strategy use is a hallmark of the good reader is now widely accepted among both L1 and L2 reading researchers” (p. 208). He lists more specific reading comprehension strategies than Bråten (2011), who looks at broader categorizations of reading strategies. These strategies “have been identified in research as providing the strongest support for reading comprehension” (p.209) and comprises eight different strategies:

1. Summarizing
 2. Forming questions
 3. Answering questions and Elaborative Interrogation
 4. Activating prior knowledge
 5. Monitoring comprehension
 6. Using text-structure awareness
 7. Using visual graphics and graphic organizers
 8. Inferencing
-

Grabe, 2009, p. 209

According to Grabe, fluent readers are able to use and adjust their repertoire of reading strategies to support reading comprehension and learning. Being able to adjust ones reading strategies and adapt to different reading purposes require knowledge and understanding of the concept of reading strategies. In Norway Hellekjær (2009) argues that “developing skills and using strategies are considered weak areas in L1 reading instruction in Norway” and there is “too little emphasis on teaching Nordic students how to *read to learn*” (p. 202). Instead, there is a tendency to focus too much on careful reading of texts in lower education, and therefore students continue this trend at higher education. Careful reading of text may be slower and students may struggle to meet the required amount of course materials. In addition, careful reading is appropriate for some reading purposes, but not for others, therefore students may not get full benefit of the reading when careful reading is the preferred strategy among many Norwegian readers.

2.6 Background knowledge

How the readers’ background knowledge affects the reading process and reading comprehension is another, much researched topic. Studies have shown (Kim, 1995; Barry and Lazarte, 1998) that the prior knowledge the reader brings to the reading process may be a contributing factor in the readers’ understanding the text and determine how much he or she will remember. The significance of background knowledge, according to Bråten (2011), lays in that “they give the reader opportunity to draw conclusions about and reinterpret the information that is presented in the text in light of the knowledge they have about the topic” (p. 62, my translation). Fluent readers are able to draw conclusions and assumptions when they read, while weaker readers tend to struggle with this to some degree. In addition, using ones background knowledge to guess unfamiliar words when reading is considered an important strategy, especially when reading in a second language. The alternative to guessing

the meaning of the word is looking it up in a dictionary or asking other readers, when doing this the readers disrupts the reading process and it becomes more fragmented and less fluent. This can in turn result in the reader not remembering what he or she has read in the previous sentences or paragraphs, and therefore have to read it over again. If the reader is able to understand the unknown word to some degree from his or her prior knowledge or the context the word is in, it is more likely that the reader will sustain the information in the text and remember it.

Koda (2007) explains, “Successful comprehension is achieved through the integrative interaction of extracted text information and a readers prior knowledge (p. 4)” (Cited in Grabe, 2009, p. 73). Without some prior knowledge about the topic it is difficult to fully comprehend the information and store in the long-time memory. According to Grabe (2009), because the importance and complexity of background knowledge, and its impact on reading comprehension it is necessary to divide it into subcategories; “general knowledge of the world, cultural knowledge, topical knowledge, and specialist expertise knowledge” (p. 74). These different categories of knowledge are useful and needed in different reading situations and in processing different types of text information.

2.7 Reading in a second language

In the present study reading is understood as a complex, meaning-making process that depends on both the information in the text and background knowledge the reader has. Reading is not just regarded as the recognition and decoding of words, but it involves many different processes that work together to make meaning and comprehend the information in written text. The present study looks at reading in a second language (L2) and it is important to understand the distinction between reading in an L1 and reading in an L2. Alderson (1984) summed up the issue explaining that

We do not, and indeed find it difficult to, draw a clear distinction between first and foreign language reading – in fact, it is not clear to what extent reading in a foreign language is different from reading in a first language. (p. xv)

(Cited in Hellekjær, 2009, p. 199).

As Alderson (1984) points out, reading in the first and second language is more or less the same, and much a question of transfer of language. Patricia L. Carrell (1991) explains that “the extent to which reading in a second language is a function of the transfer of first language abilities or of language proficiency in the second language has been a matter of

debate for some time (Clarke 1979, 1980; Alderson 1984).” (p. 159). When reading, do we use our first language abilities and transfer these to the second language, or do readers use their proficiency in the second language in order to read? Bernhardt (2011) explains that “many believe that those needing to read in a second language simply *do* the same thing that they *do* in their first” (p. 6). However, anyone who has tried to learn to read in a new language know that one is not automatically a fluent reader in the L2 because one has the ability to read in the L1.

In her study, Carrell (1991) give an overview over research on L1-L2 transfer and divide the research into three. First, explains that some researchers argue “that reading in a foreign or second language depends crucially upon the reading ability in one’s first language” (p. 159). This view argues that the reason for poor L2 reading comprehension is poor L1 reading abilities, or because readers fail to transfer these abilities. Secondly, another group of researchers argue that one can only learn to read in the L2 “once learners have matured in their ability to read in the first language” (Carrell, 1991, p. 159), and are able to transfer this awareness of the reading process to the L2. Because one has learned how to read once, this view assumes that the reader understand the reading processes and therefore reading does not need to be relearned in order to read in a second language. The third view, according to Carrell (1991), is known as ‘language-threshold’ or ‘short-circuit hypothesis’ of second language reading (p. 160). This view argue that reading in a second language depends less on the first language and “appears to be largely a function of proficiency in that language, or that at least some minimal threshold of proficiency needs to be attained in that language” (p. 159). It is only when this minimal threshold of proficiency is in place the reader is able to transfer first language reading strategies to the second language reading process. Readers of a second language must understand and have some degree of proficiency in the second language in order to successfully read in that language and apply strategies known in the first language to read more efficiently. Hellekjær and Hopfenbeck (2012) explain the linguistic threshold level saying that “English language skills under a certain level will short-circuit the transfer of reading skills and reading strategies to the L2, even though the concerned is a proficient reader in the L1” (p. 89, my translation). Having this minimum level of English language proficiency is therefore very important for students in higher education in Norway, when they face large amounts of reading English course material. Further, Alderson (2000) explain that “the more demanding the task, the higher the linguistic threshold” (p. 39), which means that not falling below the linguistic threshold level might be particularly difficult when reading academic texts for students at higher education.

When looking at the relationship between the L1 and L2, Bernhardt (2011) explains that the first language is the *clear channel* that provides phonology, processing strategies, word recognition strategies and “guides the development of the conceptual model on which understanding is based” (p. 6). The second language is a degraded channel that builds upon the strategies acquired from the clear channel. They work together and interact, sometimes incidentally and sometimes deliberately. Readers L1 proficiency or literacy ability contributes and is significant when understanding L2 proficiency. Bernhardt (2011) refers to Bernhardt and Kamil (1995) who discovered that “upwards of 20% of any given performance in a second language could be explained on the basis of first-language ability.” (p. 33). Readers who are fluent readers in their L1 will on the basis of this be better readers in the L2 than those who struggle with their L1 reading. Bernhardt concludes that “Indeed, first-language performance had to be acknowledged for its critical contribution to explain second-language reading performances.” (p. 33).

Grabe (2009) is concerned with understanding that much of what we know about the reading process in a second language we have received from the research conducted on first language reading. Grabe (2009) explains that the “issue of different patterns of L1 reading development provides additional perspectives on some of the difficulties that L2 readers might face as they learn to read an L2” (p. 109). The difference between the L1 and L2 may vary, but there will be variations in patterns among languages including phonology, orthography and morphology and learners of an L2 will most likely encounter difficulties in word processing in the new language. Grabe explains that “these patterns of L1-L2 variation created by differences across L1s are likely to have a significant impact on the speed and accuracy of word-recognition processes in L2 reading development, particularly at lower proficiency levels” (p. 121).

2.8 Academic reading

As mentioned earlier, there are different reasons for why we read, and readers need to be aware of the purpose for which they read in order to adjust their use of reading strategies accordingly. Reading an academic text differs from reading for example a novel or official letter. Stephen Krashen (2011), in the article Academic Proficiency (Language and Content) and the Role of Strategies, defines academic proficiency “as having two components: academic language proficiency and knowledge of academic content” (p. 381). Krashen argues that having good language proficiency is not enough to read in an academic context.

He continues by explaining “The major path to academic language proficiency is reading” (p. 381). Reading, both in a formal and informal context, increases vocabulary and makes the reading process more fluent, which in turn makes reading more efficient and it is easier to transfer strategies from the L1 to the L2. Moreover, Krashen explains “the discourse and grammar of academic language is quite complex” (p. 382) and that because it can even be difficult for professional readers to understand, it is understandable that it is even more challenging for students.

When discussing academic reading proficiency, Grabe (2009) explains that L1 readers have extensive reading experience, vary in higher-level reading abilities and bring “these experience and skills to their L2 reading efforts.” (p. 134). Grabe continues by saying “that these combined academic skills and experiences with reading do impact an L2 readers’ comprehension development” (p. 134). The next difference between academic reading in the L1 and L2 is the exposure to print and words. L2 readers experience a significantly lower exposure to high-frequency words compared to L1 readers, which in turn have an impact on the fluency and automaticity of the reading. Having a limited vocabulary as L2 readers can result in a slower reading process and can have an impact on the readers’ motivation and confidence in reading in the L2. Hellekjær and Hopfenbeck (2012, p. 88) refer to Grabe (1988, p. 66) who argues that a limited vocabulary “may be the greatest single impediment to the fluent reading by ELS students”. Reading English course material in higher education therefore requires students to have a certain level of English language skills, especially vocabulary knowledge, and the abilities to use reading strategies, hence being a strategic reader. This mean that students in higher education should have enough English skills to not fall below the linguistic threshold level.

2.9 Reading in Norwegian schools

There has been a development in the Norwegian school system towards focusing more on reading in recent years. With the new curriculum of 2006 (LK06) greater focus and importance was put on reading, and reading was designated as one of the basic skills. It recognized the importance of proper reading instruction, including instruction in reading strategy use. Because strategy use is a conscious activity that learners and readers have control over, it is important to learn the difference between different strategies, how to use them, when to use them and benefits of using them in an efficient manner. Having instruction in different reading strategies and knowing how to use them is important in today’s society,

perhaps it is especially important in Norway. Norway is a small language community and the majority of literature in higher-level educations is in English and lower education is in most cases designed to make students ready for studying in higher education. According to Hellekjær and Hopfenbeck (2012):

The development of pupils actual university admission certification, that is to prepare pupils for the demands and challenges they will face in higher education, is the primary objective for the Educational Program for Specialization in General Studies in upper secondary school. (p. 84, my translation)

This includes learning to become strategic readers of English texts and understanding the importance of using reading strategies for different purposes when reading. Possessing a set of reading strategies and knowing how to use them will possibly make the transition from lower to higher education easier for most learners. Nevertheless, studies have shown that teaching pupils reading strategies in the Norwegian school is not prioritized today (Anmarkrud, 2009; Thuland and Heskestad, 2009, Roe, 2008). In addition, studies have shown that the lack of reading strategies students have from lower education persists when they start higher education and it is difficult for students to turn this around (Fjeldbraaten, 1999; Bråten and Olaussen, 1999).

2.9.1 English instruction in upper secondary school

English is only compulsory the first year of upper secondary school and an elective course the second and third years. The elective course the second year is named International English and the third year students can choose between Social English and English Literature and Culture. These are the options Norwegian pupils have in upper secondary school today, but many pupils choose not to continue with additional English courses. The Ministry of Research and Education has decided that the first-year English course at upper secondary school is the final compulsory English course. In practice, this gives the message to pupils that by finishing this first-year English course they have the skills and qualifications needed to study at higher levels. It also implies that unless you have a special interest in language and literature you are adequately prepared. In addition Norwegians tend to believe they have excellent English language skills. Several studies have disproved this (Hellekjær, 2005, 2012) and show that while Norwegians have good everyday communication skills, they still lack what is known as cognitive academic language proficiency (CALP) in English. Grabe (2009) refers to Jim Cummings and his Developmental Interdependence Hypothesis (Cummings, 1991) that “states that academic literacy skills, once developed well in the first language

(exceeding an L1 threshold proficiency), will automatically be available for L2 academic purposes” (cited in Grabe, 2009, p. 141). This proposes a common underlying proficiency, however, Cummings (2000, in Grabe, 2009) states that the Interdependence Hypothesis “applies to a Cognitive Academic Language Proficiency (CALP) rather than to all language abilities” (p. 141). The hypothesis therefore claims that “academic proficiency transfers across languages such that students who have developed literacy in their first language will tend to make stronger progress in acquiring literacy in their second language.” (Cummings, 2000, cited in Hellekjær and Hopfenbeck, 2012, p. 88).

2.10 How will my study contribute?

The present study is to examine how beginner students in higher education in Norway read English course material, and how they experience reading large amounts of English course material. Hellekjær (2005) found that a significant number of Norwegian students in higher education struggle with reading course material in English and in addition, Hellekjær (2005, 2008) found that the origins of these problems are situated in lower- and upper-secondary school. Not having the needed English skills to read course material in higher education is a problem and something the present study want to investigate. In addition, English is only compulsory the first year of upper secondary school and should prepared students for the challenges they face in higher education, including reading large amounts of English course material. The expectation that students specializing in science and mathematics in upper secondary school do not choose the elective English courses their second and third year because of admissions requirements for some studies in higher education is also investigated in relation to English reading proficiency. Many students studying science and mathematics therefore only follow the compulsory, first-year English course and it is questioned whether or not they are prepared for reading English course material in higher education. How students in higher education read and experience reading English course material is therefore studied to look at Norwegian students academic English reading proficiency. In addition, the present want to question whether or not the first-year English course is sufficiently preparatory for higher education and reading English course material. The indications provided by the present study may be valuable when assessing the Norwegian school system, especially with regard to English instruction in upper secondary school and the importance of good English reading proficiency in today’s society. In addition, the present study use the same measurement as Hellekjær (2005) and the results will be compared and can indicate

whether or not there has been an improvement in students English reading abilities. The present study look at beginner students at higher education and their reading of English course material, and will give information about their proficiency level as well as the students use of reading strategies. Furthermore, several interviews were conducted to get more detailed information about how students experience reading English course material and whether the English instruction they received in upper secondary school have prepared them for reading in higher education.

3 Method

3.1 Introduction

This chapter provides an overview of the research methods used in the present study. It starts by explaining the research design of the study and the tools used to investigate the research statements. Second, the process of selecting the sample is explained and then how the collected data was analyzed. Last, the validity and reliability of the study are discussed.

3.2 Research design

The present study of English reading proficiency uses a mixed-method research design, with a quantitative-qualitative approach, combining statistical data from a larger sample with richer, qualitative data. The qualitative, semi-structured interviews (Asbjørn Johannessen, Per Arne Tufta and Line Christoffersen, 2011, p. 139) were used to follow-up a questionnaire that was handed out during three lectures at the University of Oslo. By triangulating the two approaches researchers seek to elaborate and “exploit the complementary nature of qualitative and quantitative approaches” (Baumard and Ibert, 2001, p. 82).

In this study the qualitative study was conducted in order to get more detailed, or richer descriptions of how beginner students experience reading English course material, as well as to examine the issue at a more personal level than is possible with the quantitative data. Baumard and Ibert (2001) point out that “triangulation strategies aim to improve the precision of both measurement and description” (p. 82), which was the motivation for choosing this method for the present study. Johannessen, et. al. (2011) refers to Grønmo (1996) who agrees that triangulating the two approaches contributes to strengthening the reliability of the findings and give room for more comprehensive interpretations of the results (p. 367).

3.3 Research tools

When the present study was developed I initially decided to use a quantitative method to investigate academic reading comprehension in English among Norwegian university students. The research design was adopted from Hellekjær (2005) who used a quasi-

experimental, one-group research design in his study of university students' academic English reading proficiency. According to Geir Gripsrud, Ulf Henning Olsson and Ragnhild Silkoset (2010), using a quasi-experimental research design entails that "it lacks at least one of the two characteristic properties of a real experiment – either randomization or control group." (p. 47). A quasi-experimental research design is in addition, according to Gripsrud, et. al. (2010) "a weaker test of causality" (p. 47). Hellekjær (2009) also explains that "this design does not allow hypotheses about causal relations" (p. 202), because it lacks the properties needed in order to identify these causal relations. The questionnaire used was designed, operationalized and used by Hellekjær (2005), and items from it were used in the present study because it wanted to investigate some of the same issues presented in that study. The questionnaire uses self-assessment items that were validated in a separate study against an IELTS academic reading module, giving a positive correlation of $r=0.72$ (see Hellekjær, 2005, 2009). It was also decided that the present study was to investigate how beginner students experience the reading of English course materials in addition to academic reading proficiency, and therefore a qualitative study was included. This was because it would be difficult to get information about students' experience of reading from the self-assessment items in the questionnaire, and it could not be assumed that students would provide sufficiently comprehensive answers on the open-ended question (Item 38) in the questionnaire. Furthermore, there was no guarantee that students would provide an answer to the open-ended question at all. Therefore I decided that following the questionnaire, a number of qualitative, semi-structured interviews were to be conducted in order to get the students' own thoughts on their experience of reading English course materials in higher education and about their English instruction at upper secondary school.

3.3.1 Questionnaire

To collect the quantitative data for the present study a questionnaire¹ was handed out during lectures at the University of Oslo. The questionnaire was handed out in Norwegian, since none of the courses were international courses that were taught in English. The Norwegian version of the questionnaire is included in Appendix A. The original questionnaire by Hellekjær (2005) comprised 74 items. Not all of these items were relevant to the present

¹Please note that the project and the questionnaire had been reported to the NSD (Norsk Samfunnsvitenskapelig Datatjeneste) in advance for registration and approval. NSD found that the study involved handling sensitive information and therefore was notifiable. The project was approved and all sensitive information was handled according to instructions.

study, therefore some items were not included in the questionnaire used. The survey used comprises 38 items that were not changed from how they appeared in the original questionnaire. In addition, one last item that asked if respondents would allow to be contacted for a follow-up interview was included at the end of the survey. This last item will be explained in more detail later when looking at the qualitative data and the selection of the sample.

I shortened the questionnaire since it was particularly important that the questionnaire was short and concise, this because it was to be used in surveying university students during lecture breaks or directly after lectures. In order to get permission to conduct the questionnaire it was also important that it was possible to complete the questionnaire in 10 minutes or less. Therefore the items were closed, multiple-choice items that are less time-consuming than various types of reading tests and questions that ask students to write longer answers. Furthermore, it was to be handed out in lectures in the time period between the 14th of April and the 15th of May due to the university's policy regarding when students are allowed to hand out surveys. For information about the operationalization of the questionnaire and the original questionnaire including 74 items, see Hellekjær (2005, p. 88).

The first 13 items examine the respondent's academic background and their background in English, including English courses, grades and interest in upper secondary school. Afterwards items regarding academic reading comprehension were included, both in Norwegian (Items 14-19) and in English (Items 20-25). Next, questions about how the respondents read their course material (Items 26-30) were retained along with items about how they handle unfamiliar English words when reading (Items 31-37). According to Hellekjær (2009) these "are indicators of independent variables expected to covary with reading comprehension" (p. 203). The open-ended item, which I included, asked the respondents to explain in their own words how they read English course material and their experience in reading English in higher education.

As mentioned, items 14 to 37 are self-assessment items that asked respondents to assess their own reading and comprehension using a seven-point Likert scale. These items tap into reading comprehension, in both Norwegian and English, at different levels of processing, as for instance items 14 and 20 ask about reading speed, which can indicate fluency. Next, item 15 and 21 ask about difficulties recognizing words, which are important for lower-level processing when reading (see Appendix A).

3.3.2 Developing the interview guide

Following the collection of quantitative data, five semi-structured interviews were conducted to get a broader understanding of how beginner university students read academic texts and how they experience reading large amounts of English course material. Moreover, whether or not the respondents found that their upper secondary education, their English instruction in particular, provided the skills and competence necessary to read English course material and study in higher education was questioned. The qualitative method was included to get additional and richer information about how students experience reading English course material. By interviewing respondents I could ask more detailed questions than those included in the questionnaire they had previously answered. In addition, the qualitative data could provide explanatory answers to possible ambiguous results from the quantitative data.

The interviews were semi-structured based on an interview guide (Appendix B) that according to Steinar Kvale and Svend Brinkmann (2012) “seek to obtain descriptions of the participants world view, and especially interpretations of opinions on the phenomenon that is described” (p. 47). A semi-structured interview is neither open nor closed, but includes an interview guide with topics that the researcher wants to discuss and include in a conversation. Because the interview guide comprises topics and subtopics instead of direct questions, there is also room for the respondent to contribute, affect and/or change the order of the topics discussed based on his or her views on the topic. When designing the interview guide for the present study it was logical to use some of the central topics and questions from the questionnaire in the interviews, this because the interviews are meant to be an extension to the quantitative data. The questionnaire included an open-ended question that may or may not give information similar to that contained from the interviews, but does not assure it when it is optional and it cannot be assumed that the respondents answer it at all.

The first topic of the interview guide asked about the respondents’ backgrounds (Topic 1) including their upper secondary education, English instruction and experience, prior higher education and the courses they attended at the time of the study. Secondly, subject choices in upper secondary school (Topic 2) was discussed in more detail focusing on English, followed by why the participants only attended the compulsory English course their first year in upper secondary school and did not choose English the remaining years. Genre and difficulty level of text in English in upper secondary school were also discussed and compared to the texts they read at the university. Afterwards they were asked about how they experienced starting at the university (Topic 3), including expectations and information about

studying, and information about reading course material in higher education from student counselors or others before and when they started. The next topic was reading large amounts of English course materials (Topic 4) with regard to expectations, whether or not it influences their student life and challenges they experienced when reading English course material. Following this, academic reading (Topic 5) was discussed in detail focusing on the aspects tapped into by the questionnaire.

The participants commented on how they read Norwegian and English course materials and compared them in terms of fluency, recognition of unknown words, and how previous knowledge about a topic influence their reading. Strategy use was discussed starting with looking at whether or not the participants remember receiving any reading strategy instruction, in lower- or higher-education, and whether they use these or not. The respondents also described their reading process in greater detail with regard to taking notes, summarizing, looking up unknown words, studying for examinations. They were also asked about their personal experience in reading academic texts, as well as their general impression of how beginner students' experience academic reading. Whether or not the reading of English texts could lead to additional pressure and stress for new students was also tapped into. The last question was about whether or not the compulsory, first-year English course in upper secondary school is adequate preparation for higher education (Topic 6) and whether it gave the respondents the skills needed for the reading of English course material in higher education. All in all the interview guide included six main topics and several subtopics that elaborate the questions in the questionnaire and included some new points of views to the present study. Because the interview was semi-structured, the topics were in some cases discussed in different order than how they appear in the interview guide, influenced by the different factors that played a part during the interviews.

3.4 Procedure

3.4.1 Quantitative study

When the method for the present study had been decided and the questionnaire designed, the process of selecting the sample for the study started. When selecting the sample some criteria were set in order to make a selection that would ensure that the necessary data was collected. The questionnaires were to be handed out during lectures at the University of Oslo, and the respondents were to be enrolled in undergraduate, beginner courses at three faculties. In addition, the courses selected needed to have English course material on the reading list.

Because the present study aims to investigate how beginner students in higher education experience the reading of English course material, these criteria were set to partially ensure that the sample provided desirable results. The survey was limited to the University of Oslo for practical reasons, first and foremost time constraints. The requirement of English texts on reading lists also precludes a random sample of respondents, which means that the present study has a stratified purposeful sample based on a number of criteria. Johannessen, et. al, (2011) explain that with stratified purposeful sampling “first categories are constructed based on central characteristics, before recruiting informants that fall under the categories.” (p. 401). Isabelle Royer and Philippe Zarlowski (2001) further explain that “the method is based on the hypothesis that there is a correlation between the phenomenon under observation and the criteria chosen for segmenting the population.” (p. 150).

For the present study it was important to set certain criteria when choosing the lectures in which the survey was to be handed out, in order to try to ensure the most appropriate sample was selected in relation to the construct of the study. The three faculties that were chosen to participate were the Faculty of Mathematics and Natural Sciences, the Faculty of Social Sciences and the Faculty of Medicine. These are interesting areas of study at higher education and can be compared with regard to English instruction and level in upper secondary school. One of the points that this thesis was developed on is the expectation that students who specialize in science and mathematics in upper secondary school and want to study this further at higher education, only follow the compulsory English course their first year of upper secondary school. In addition, pupils get extra credits for completing advanced courses in mathematics and natural sciences in upper secondary school, which may make these courses more desirable to choose compared to social science and language courses. These extra credits can be necessary to get accepted into higher education and are given to motivate pupils to specialize in natural sciences and mathematics.

To find lectures in which the questionnaire could be distributed, each faculty was contacted and asked to suggest one or two beginner courses with English texts on their reading lists. The courses suggested were double checked with regard to English course material before the lecturer of each course was contacted for permission to hand out the questionnaire during a lecture, and to discuss possible dates and times to distribute these.

3.4.2 Qualitative study

At the end each questionnaire a final item was included that asked whether the respondents would allow to be contacted for a follow-up interview. If the answer was yes, the respondents were asked to include contact information so they could be contacted. It was important that the respondents be contacted in short time after the questionnaire was answered because it was late in the spring semester, and exams were only a short time away. This could mean that it was possible that a number who had answered yes at the time of the questionnaire could have changed their mind because they had too much to do at the end of the semester. When choosing which respondents who were to be contacted, a number of criteria based on certain questions in the questionnaire were set and considered. Because the present study want to examine beginner students in higher education, respondents with no prior higher education (Item 5) were preferred, and it was also desirable that the respondents only had the compulsory, first-year English course in upper secondary school (Item 7). Items 10 and 11 were also considered when it was desirable that the respondents had not lived or studied in an English-speaking country, since this may have a strong influence on their English reading proficiency. When some respondents had been eliminated based on the criteria set above, the remaining questionnaires were examined with regard to the items about reading comprehension in English (Items 20-25), and how the respondents handled unfamiliar English words (Items 31-37). Respondents who indicated that they, to some degree, struggled when reading English course material were chosen and contacted. Choosing students who indicated that they somewhat struggle with reading English course material was based on the belief that these respondents may give interesting information about why and what they struggle with and their experience in reading English. Furthermore, since the interviews were designed to follow-up and complement the data collected in the quantitative survey, talking to those who struggle with reading was most logical when previous studies (Hellekjær, 2005, Hellekjær and Hopfenbeck, 2012) show that Norwegian university students struggle with reading English course material.

Choosing which respondents to contact in this manner have some risks and might be considered a limitation to the study. How do I, as the researcher, know that these are the respondents who have the information I seek? Nor do I have control over how the respondents answered the survey and whether or not they were being truthful in their answers. Moreover, the survey did not ask what part of Norway the respondents are from, so I will not know in advance whether or not they are all from the same area or even, in the

exceptional case, if some of the chosen respondents have had the same English instructor in upper secondary school.

3.5 The samples

3.5.1 Quantitative sample

As mentioned before, some criteria were set when deciding who were to participate in the study. Three faculties were contacted and asked to suggest lectures that fulfilled the criteria set. After contacting the different faculties and getting suggestions on which lectures would be suitable for the study four lectures were selected; two courses at the Faculty of Mathematics and Natural Sciences, one course at the Faculty of Social Sciences and one course at the Faculty of Medicine. All courses were undergraduate level, beginner courses with English texts on the reading list, and the dates were set for when the questionnaire was to be handed out. Unfortunately the course selected from the Faculty of Medicine was cancelled, and therefore the questionnaire was handed out in three instead of four lectures. The total number of respondents was 142, of which 106 (75%) were from the two lectures at the Faculty of Mathematics and Natural Sciences and 36 (25%) were from one lecture at the Faculty of Social Sciences. Table 3.1 provides an overview of the sample of the quantitative study.

Table 3.1. Overview of the quantitative sample

Lectures	Respondents	Percentage
KJM1110 Faculty of Natural Science	77	54%
STK1100 Faculty of Mathematics	29	20.5%
SOSANT1600 Faculty of Social Science	36	25.5%
Total	142	100%

As can be seen the sample is quite unevenly distributed, which will be discussed in more detail when looking at the validity of the study.

The reply rate of the study give information about the percentage of respondents who completed the questionnaire in the selected courses in relation to the total number of students who attended the course. This is somewhat difficult to determine because of a number of circumstances. First, no counts were made of students present in the lecture when the questionnaire was handed out, and none of the courses had obligatory attendance. In addition the questionnaire was handed out late in the semester, close to the students' final exams in

which many may chose to study independently and not attend lectures. Therefore there are three options when looking at the reply rate. First, using the total number of respondents who registered for the course give a reply rate of 22%. The second option, considering that the questionnaire was handed out after the deadline to withdraw from the course and a significant number of respondents had withdrawn or failed the qualifying exams in order to sit for examinations, gave a reply rate of 32%. Third, how many students actually sat for the final exam gave a reply rate of 39%. This relatively low reply rate, in addition to a small sample, means that it is difficult to make generalizations about the population of Norwegian beginner students. However, because the questionnaire was handed out late in the semester and none of the lectures had obligatory attendance, it was somewhat expected that the reply rate would be on the low side. As mentioned, no counts were made of students present when the questionnaire was handed out, but my observation was that almost everyone present answered the survey.

3.5.2 Qualitative sample

As mentioned above, a number of criteria were set when selecting the sample for the qualitative interviews. A total of 23 respondents answered yes on the last item on the questionnaire that asked if they would allow to be contacted for an interview. The distribution of respondents that answered yes on this item was unevenly distributed between the three lectures, similarly to the uneven distribution of respondents who completed the survey. From the first lecture (KJM1110) 16 respondents answered yes on the last item, while the number of respondents willing to be interviewed from the second (SOSANT1600) was five and only two from third lecture (STK1100).

When looking through the potential respondents, my goal was to interview respondents from each lecture where the questionnaire had been handed out. Three respondents from the first lecture were chosen, while one from the second and one from the third, leaving a total of five interviews that were conducted. The reason why three were chosen from the first while only one from the second and third can be explained by there being more respondents to choose from. Furthermore, the respondents who were to be interviewed from the first lecture fit the criteria set for selecting the sample better than those from the second and third lecture because there were more respondents to choose from, and therefore more options.

The respondents selected were as mentioned all beginner students at higher education with no prior higher education. Four out of five only finished the compulsory English course their first year of upper secondary school, and none of the respondents had lived or studied in an English-speaking country. Most of the respondents indicated that they, to some degree, struggled with reading English course material compared to Norwegian. The fifth respondent was the only respondent who qualified to be interviewed from the third lecture, so the respondent was chosen even though there were not strong indicators that the respondent struggled with reading English. However, there were some conflicting answers in the questionnaire, especially in regard to the items concerning strategy use and handling unfamiliar words. The respondents' backgrounds and reading scores are presented in Table 5.1 on page 62 in Ch 5. of the thesis. All the respondents who were interviewed have been given a random, male name that will be used throughout to keep them anonymous. The names used are Peter, Bob, Matt, Nick and Jack.

3.6 Analyses

The data obtained from the questionnaire was analyzed using the Statistical Program for the Social Sciences (SPSS). When the data was collected all answered questionnaires were numbered chronologically from 1 to 142, which is the total number of responses. Then the questions were coded and typed in as variables in SPSS giving the possible answers values (for example on Item 3 the value 1 was given for Female and 2 for Male) before the data was registered and analyzed. The statistical analysis is fairly limited and concentrates on respondents distributions, mean scores and standard deviations, and some bivariate correlations and crosstabulations.

The items that look at reading proficiency in both Norwegian (Items 14-19) and English (20-25) are different facets of the construct of the study, namely reading proficiency. Therefore these items were combined into additive indices and analyzed as two single variables, also known as additive indices. These six items for both language has previously been used and “loaded on the same latent variable” (p. 203) by Hellekjær (2005), who measured the Cronbach's alpha coefficients as high. The Cronbach's alpha coefficient is a measurement of reliability and was similarly high in the present study, namely $\alpha=.88$ for Norwegian and $\alpha=.94$ for English (N=142). This is evidence that these items could be combined and used as dependent variables. Doing this simplified the analysis of reading proficiency in both English and Norwegian when it allows using one single variable instead

of several as indicators for reading proficiency. In addition, according to Hellekjær (2005), using indices improve both validity and reliability and “reduces the effect of possible measurement errors” (p. 90). In the analysis of the data these indices are named *NorIndex* and *EngIndex*, each representing the six items tapping into reading proficiency in Norwegian and English.

Item 38 in the questionnaire asked the respondents to describe with their own words how they experienced reading English course materials and their reading process, and this data can not be analyzed using SPSS because it can not be coded into values similarly to the answers given on the questions using the seven-point Likert scales. These answers have been looked through and those with answers that are relevant to the analysis and results in the present study have been collected. After separating the answers that did not seem serious or consisted of single, positive words a total of 60 statements were looked at and included in the analysis.

During the interviews, notes were taken in addition to them being recorded so that they could be transcribed later. Unfortunately, the audio file for one of the interviews (Peter) was damaged and this interview could therefore not be transcribed like the others. Nevertheless, this interview is a part of the analysis, but the only documentation of this interview is the notes taken during the interview. The interviews are first analyzed separately, Ch. 5, before the results are compared with the statistical data from the quantitative study, Ch. 6.

3.7 Validity

How valid the findings of a study are is an important discussion when this, according to Kvale & Brinkmann (2012), gives information on whether or not “the method actually can be used to study what it says it will study.” (p. 326). In other words, validity concerns how relevant and believable the data collected and analyzed really are. In the present study it is logical to discuss both the construct validity of the questionnaire, especially in regard to the self-assessment items used, and the external validity of the study. The construct validity of a study refers to “the degree of correspondence between the more general phenomenon that is being studied, and the operationalized indicators/variables” (Johannessen, et. al, 2011, p. 394). External validity, according to Johannessen, et.al (2011), “concerns (1) the generalization from sample to population, the extent to which the sample is representative for a population, and (2) the extent to which it is relevant to transfer the results from one study to

other areas and situations” (p. 409). The present study uses a mixed-methods research design, which according to Janice Morse and Linda Niehaus (2009) “is a stronger design than one that uses a single method because the supplemental component enhances validity of the project per se by enriching or expanding our understanding” (p. 14).

3.7.1 Construct validity

With regard to the construct validity of the study it is the validity of the self-assessment items in the questionnaire that needs to be discussed. Whether self-assessment items give a reliable picture of language proficiency have been discussed, and several studies have shown that self-assessment items can give a reliable picture of skills and proficiency levels (Bachman and Palmer, 1998; Oscarson, 1997; Ross 1998). Steven Ross (1998) look at the use of self-assessment in second language testing and notes that “it appears that self-assessment of this skill (reading) is relatively more valid than that of lesser developed skills” (p. 6). Further, Ross concludes that the overall picture provided by the study is “that there is a clear potential for predictive accuracy of criterion skills based on self-assessment measures.” (p. 17). Self-assessment items have therefore been used as a valid and reliable measure in language testing and reading proficiency. The self-assessment items in the present study were operationalized and validated by Hellekjær (2005). The validation of the questionnaire was checked in a separate validation study against an IELTS reading module (Hellekjær, 2005, pp. 163-182) giving a positive correlation of $r=0.72$. Hellekjær (2009) concluded that “on the basis of the validation study in particular, some scores from the self-assessment items in the present study arguably provide a useful and valid pictured of the respondents’ academic English reading proficiency.” (p. 205). Since the same items were used in testing reading proficiency in this present study there is no reason to assume that the validity of the same items has changed and that they therefore remain valid in testing academic reading proficiency. For more details and information on the validity and validation of the self-assessment items see Hellekjær (2005, 2009).

3.7.2 External validity

With the regard to the external validity of the present study, the sample is from three lectures at two faculties at a single university and the total number of participants in the study is 142. As noted above the sample is small, and unevenly distributed between both lectures and faculties (see Table 3.1, p. 35), and 75% of the respondents are from the Faculty of

Mathematics and Natural Sciences, which makes it difficult to generalize about Norwegian students reading of English course material. However, the data make it possible to look at students in that field of natural science and mathematics in relation to the expectation mentioned earlier. In addition, the reply rate is quite low, with 39% of those who took the examination at the end of the semester answering the questionnaire. One possible explanation is that because the lectures do not have obligatory attendance the students present at the time when the questionnaire was handed out are among the more resourceful and motivated students. The time when the questionnaire was handed out can also explain for the low number of students present when it was handed out late in the semester and it is possible that students prioritize studying at home and catching up on their reading in preparation for examinations. In the lecture at the Faculty of Social Sciences the low number of respondents might be explained with all lectures being recorded and published for the students in combination with attendance not being obligatory. There was a fourth lecture during which the questionnaire was to be handed out which would have made the sample larger and more even, but this lecture was unfortunately cancelled. Because the questionnaire was handed out late in the spring semester, it was not possible to reschedule this lecture and it was too late to find another lecture due to the policy at the university with regard to dates when students are allowed to hand out questionnaires and when not.

A larger and more representative sample would of course be needed to provide a more valid conclusion in this study, but the sample will arguably give a useful indication of how students experience reading English course material and also a picture of academic reading proficiency among Norwegian university students today. Moreover the data from the questionnaire can be, and will be, compared to the findings of Hellekjær (2005) when it used the same items in its statistical analysis as well as it containing a larger sample that is arguably more representative of the Norwegian student population.

3.8 Reliability

The reliability of a study concerns how reliable the results are and whether or not one can replicate the study and get similar results. According to Johannessen, et.al. (2011), there are two ways in which one can test reliability in quantitative methods; “by repeating the same survey (test-retest-reliability) or let multiple researchers assess the data (interreliability)” (p. 404). In the present study, the quantitative method has been adopted from Hellekjær (2005) and therefore the reliability of the study can, in part, be considered by comparing the results

of the two studies. First, the measure of reliability Cronbach's alpha for the six items that question reading for both language that were combined into additive indices was similar and high in both studies. In Hellekjær (2005) the Cronbach's alpha coefficient was $\alpha = .84$ for Norwegian and $\alpha = .94$ for English (Hellekjær, 2009, p. 203), likewise in the present study the coefficient was $\alpha = .88$ for Norwegian and $\alpha = .94$ for English. Moreover, the scores looking at reading difficulties between English and Norwegian for the items in the additive indices, *NorIndex* and *EngIndex*, are similar between the studies. An example is the question that asks respondents to indicate reading speed in Norwegian (Item 14) and English (Item 20). Table 3.2 show a comparison of mean scores and standard deviation between Hellekjær (2005, p. 150) and the present study on Item 14 and Item 20.

Table 3.2: Comparison of mean scores and standard deviation between Hellekjær (2005) and the present study with regard to Item 14 and 20.

	Hellekjær (2005) N=528	The present study N=142
Reading speed Norwegian – Item 14	M=5.4 (SD=1.2)	M=5.3 (SD=1.2)
Reading speed English – Item 20	M=4.3 (SD=1.4)	M=4.6 (SD=1.4)

As can be seen in Table 3.2, the two studies received quite similar results, which was also the case for the other items included in the additive indices. This show that the present study has managed to get similar results as Hellekjær (2005) and strengthens the reliability of the questionnaire. These results will be discussed and compared in more detail in later sections of this thesis.

3.9 Summary

The present study was conducted using a mixed-methods designed with a quantitative-qualitative approach. First, a questionnaire that was adopted from Hellekjær (2005) was handed out during three lectures at the University of Oslo. Three faculties were chosen and the lectures were selected on the basis of a number of criteria. Following the survey, five semi-structured interviews were conducted. An interview guide was designed based on the central topics of the questionnaire. The interviews were conducted in order to get more elaborative information about how new students experience reading English course materials. The data obtained from the questionnaire was analyzed using SPSS. The interviews were recorded and four of five were transcribed. The limitations of the study have been discussed in this section. The uneven number of participants, in both studies, makes it difficult to make

generalizations about beginner students at higher education in Norway. However, the high number of participants studying mathematics and natural sciences can give a useful picture of the situation in that area of study. Moreover, the time when the survey and interviews were conducted may be a reason for the low reply rate. In addition, none of the lectures where the survey was handed out have obligatory attendance; this combined with it being late in the semester may have contributed to the low number of respondents and reply rate.

In the next sections the results of the study will be presented. I will first present the findings from the quantitative study, Ch. 4., which is structured according to the topics investigated in the questionnaire. In Ch. 5, I will present the results of the qualitative study and this section will be structured according to the topics of the interview guide. Finally, I will bring the two studies together and discuss the results in relation to each other in Ch. 6.

4 Results - the quantitative study

In this chapter I will present the results of the quantitative study. In the following analysis the statistical program SPSS was used, and the analysis is limited to mean scores, standard deviation, percentages and some correlations. First, the quantitative sample will be presented. The results have then been divided into subsections based on different sections in the questionnaire, that is the amount of Norwegian and English course material, reading difficulty, English instruction in upper secondary school, study experience, unfamiliar vocabulary and strategy use. Next, the written answers on the open-ended question will be presented. Last I will give a short summary of the findings of the quantitative study.

4.1 More about the quantitative sample

The qualitative sample comprises 142 respondents from three lectures at two faculties at the University of Oslo. The lectures were selected on recommendations from the faculties, and then the reading lists were checked to ensure that the respondents had English course material on their reading lists (for more about the selection of the sample see method chapter, pp. 35-36). Table 4.1 shows the distribution of respondents from the three lectures where the questionnaire was handed out, as well as the distribution of students with and without prior higher education. This was included when this study aimed at investigating beginner students in higher education and their reading of English course material.

Table 4.1. Distribution of respondents and prior higher education. N=142

		Prior Education		Total
		Yes	No	
Lecture	KJM1110 Faculty of Natural Sciences	14 18.2%	63 81.8%	77 100.0%
	SOSANT1600 Faculty of Social Sciences	15 41.7%	21 58.3%	36 100.0%
	STK1100 Faculty of Mathematics	6 20.7%	23 79.3%	29 100.0%
Total		35 24.6%	107 75.4%	142 100.0%

As can be seen in Table 4.1, the majority of the respondents in all three lectures had no prior studies and therefore match the criteria of being beginner students in higher education.

Furthermore, this may also indicate that the majority of the respondents do not have much experience in reading academic English course material, which is also relevant for the purpose of the study. As mentioned, the sample is unevenly distributed between faculties and areas of study, which in turn makes it even less representative of the student population in Norway.

Next, the mentioned expectation that students studying natural sciences and mathematics only complete the compulsory English course, during their first year of upper secondary school, and do not follow the elective English courses their second and/or third year is examined. Table 4.2 show the distribution of respondents most advanced English course in upper secondary school according to lectures and faculty.

Table 4.2. Distribution of respondents most advanced English course completed in upper secondary school among the participating lectures. N = 141.

		Upper secondary English course			Total
		Vg1	Vg2	Vg3	
Lecture	KJM1110	42	18	17	77
	Faculty of Natural Sciences	55%	23%	22%	100%
	SOSANT1600	7	9	20	36
	Faculty of Social Sciences	19%	25%	56%	100%
	STK1100	17	2	9	28
	Faculty of Mathematics	61%	7%	32%	100%
Total		66	29	46	141
		47%	20%	33%	100.0%

The table clearly shows that in the lectures from the Faculty of Natural Sciences and the Faculty of Mathematics more than 50% of the participants only attended the compulsory, first-year English course. In the lecture from the Faculty of Social Sciences less than 20% only finished the compulsory, first-year English course, while more than 50% had English all three years of upper secondary school. A continued exposure to English is important in becoming a fluent reader and should have an impact in preparing students for further studies and reading English course material in higher education. This will therefore be discussed in greater detail in later sections of this thesis.

4.2 Amount of English course material

When selecting the sample for the quantitative study, it was important that the chosen lectures had English course material on the reading list. This was because the study aims at investigating beginner students and their experience in reading English course material. The reading lists of the courses selected were checked in advance and showed that the two lectures from the Faculty of Natural Science and Mathematics only had English course material, while in the lecture from the Faculty of Social Sciences 87.5% of the course material was in English. However, most students take more than one course each semester, and it was interesting to see what the total amount of English and Norwegian course material the respondents encounter is. Therefore the respondents were asked to indicate on a scale the amount of Norwegian and English course materials on their reading list (Item 12 and 13).

Table 4.3: Amount of Norwegian and English course material on the respondents reading list. N=142

	0%	<10%	10-39%	40-59%	60-99%	100%
Norwegian	4%	15.5%	46.5%	22%	12%	-
English	-	1%	11%	22.5%	61.5%	4%

Table 4.3 show that the majority of the respondents say that 40% or less of their course material is in Norwegian. Moreover, an even clearer majority of the respondents say that 40% or more of their course material is in English. Because the reading list of each lecture that participated in the study was checked in advance, this was the expected result when looking at the amount of Norwegian and English course material. In a report that examining language choices in Norwegian universities and colleges, Kristoffersen, et. al. (2013) explain that “One principle that now seems to win some acceptance, is that first-year teachings or possibly all teachings at bachelor-level, is to be in the national language, in this case Norwegian” (p. 6, my translation). Moreover, Kristoffersen et. al. (2013) explain that “the course material play a central role when it comes to the acquisition of knowledge and learning outcomes, and academic understanding is closely related to linguistic understanding” (p. 27, my translation). The present study cannot be compared to the results presented by Kristoffersen et. al (2013) since the present study only includes three lectures from one university in Norway. Nevertheless, that the respondents reported a higher amount of English course material compared to Norwegian is reassuring for the present when it aims at investigating their English reading proficiency and their experience in doing so.

4.3 Reading difficulty

In order to look at the respondents reading proficiency the questionnaire included six items that ask the respondents about their reading of Norwegian and English course material. The six items were the same for Norwegian and English and are different facets of the construct, namely reading proficiency. Therefore these six items were later combined into two additive indices, but first these items will be looked at separately to give an overall picture of the respondents reading of Norwegian and English course material. Looking at the six items included in the additive indices separately shows how the respondents evaluate their reading in Norwegian and English and can indicate what areas they struggle with when reading. The six items are self-assessment items where the respondents indicated on a scale from 1 to 7 their reading experience. 1 indicating a high difficulty when reading and 7 indicating that the respondent experience no difficulty at all. In Table 4.4, the mean scores of the six items that look at reading of course material in Norwegian and English are displayed.

Table 4.4. Comparison of mean scores in Norwegian and English for the six items that examine reading proficiency. N=142

Item	<i>NorIndex (Items 14-19)</i> <i>Mean scores and SD</i>	<i>EngIndex (Items 20-25)</i> <i>Mean scores and SD</i>
• Indicate on the scale from 1 to 7 how quickly you read the texts on your reading list	5.3 (SD = 1.2)	4.6 (SD = 1.3)
• Indicate on the scale from 1 to 7 how many words you do not understand in the texts on your reading list	5.3 (SD = 1.1)	4.6 (SD = 1.0)
• Indicate on the scale from 1 to 7 to what extent you find the sentences in the text difficult to understand	5.7 (SD = 1.2)	4.7 (SD = 1.2)
• Indicate on the scale from 1 to 7 to what extent you find the texts coherent when reading	5.6 (SD = 1.0)	5.0 (SD = 1.2)
• Indicate on the scale from 1 to 7 to what degree the information in the text is so densely presented that it hinders your understanding of the content	5.3 (SD = 1.1)	4.9 (SD = 1.2)
• Indicate on the scale from 1 to 7 to what extent you find the content of the texts understandable	5.6 (SD = 1.1)	5.0 (SD = 1.1)

As can be seen in Table 4.4, the scores for both Norwegian and English on these six items are relatively evenly distributed. However, overall the mean scores are low, which can indicate that there is a problem with reading proficiency in both languages. Especially the low scores on the first item that ask about reading speed indicate that the respondents struggle with fluency when reading in both languages. This may be a reflection on the tendency in the Norwegian school system to emphasize teaching pupils to read texts carefully for details, and as a consequence students might struggle to adjust their reading according to purpose. According to the Norwegian Directorate for Education and Training (2013) this is a problem

in lower education where “Norwegian pupils seem to use a limited repertoire of learning strategies and work methods” (p.3, my translation) when reading.

The scores also indicate that key sources of difficulties when reading are fluency, unfamiliar words and the ability to understand full sentences in texts. It is to be expected that students to some degree also struggle with reading Norwegian course material, but the gap between the scores in Norwegian and English is interesting. The gap between the scores show that the respondents struggle more with reading English compared to Norwegian. Moreover, it can also indicate that the respondents are not proficient enough to read and comprehend the information presented in the English course material. Especially the low scores in English on the first three items (Items 20-22) that ask about reading speed, unknown vocabulary and the understanding of sentences indicate that the respondents struggle the most with the lower-level processes when reading. These items tap into decoding abilities, understanding of sentences and fluency, which preferably should be automatic at this level of education and to ensure comprehension when reading. Seeing that the items that indicate lower-level processes have the lowest scores indicate that the respondents are not proficient enough readers of English and do not possess the basic linguistic understanding needed. In addition, the gap between the scores in Norwegian and English on these three items is the largest (compared to the last three items), which show that the respondents find the lower-level processes more challenging in English compared to Norwegian and that these areas are the key sources of difficulty for the respondents.

In order to measure reading difficulty, I combined the six items in the questionnaire that asked the respondents about their reading of course material in English and Norwegian into two additive indices (see method chapter. pp. 37-38 for more information), one for Norwegian (*NorIndex*) and one for English (*EngIndex*). Comparing these additive indices in regard to mean scores show the level of difficulty students experience when reading English course material compared to reading in Norwegian. As Table 4.4 showed the respondents read Norwegian course material with less difficulty than in English, which was expected when English is the respondents second language. Table 4.5 shows the mean scores and standard deviation for the two additive indices, and compares them to the findings of Hellekjær (2005).

Table 4.5: Mean scores for *NorIndex* and *EngIndex*, and comparison to Hellekjær (2005). N=142

	Present study		Hellekjær (2005)	
	<i>NorIndex</i>	<i>EngIndex</i>	<i>Noindex</i>	<i>Enindex</i>
Mean (M)	5.5	4.8	5.7	4.6
Std. Deviation (SD)	.92	1.0	.7	1.1
<i>N</i>	142	142	572	576

As shown in Table 4.5, the mean score for *EngIndex* is lower than that of *NorIndex*, which indicated a higher level of reading difficulty in English. In addition, the standard deviation also indicates that there is slightly greater individual variation with regard to English reading proficiency. As mentioned, it is expected that Norwegian students find reading English course material more difficult than Norwegian, and the mean scores of the additive indices confirm this. Hellekjær (2005) used the same items and additive indices and therefore the results can be compared. As Table 4.5 shows, Hellekjær (2005, p. 147) reported that the mean score for *Noindex* was 5.7 and for *Enindex*, 4.6. Similar to the present study, the respondents' express that they struggle more with reading English course material compared to Norwegian. The scores for Norwegian reading abilities are similar, but slightly lower in the present study. In contrast, the scores for English are slightly higher in the present study, which can indicate that there is a slight increase in students' English reading proficiency. However, the size difference between the samples can explain some of the difference in scores, in addition the scores from Hellekjær (2005) might be more valid because of the larger sample. It is natural that students struggle some with reading course material in Norwegian, but the gap between the scores in English and Norwegian is significant.

Table 4.4 indicated that the respondents struggle most with the lower-level processes when reading English course material, and this was the source of the largest gap between Norwegian and English. As mentioned, there is a slight increase in the score for English in the present study compared to Hellekjær (2005), but why there is an improvement and whether or not this improvement is good enough needs to be questioned. Hellekjær (2005) conducted his study in 2002, which was before the curriculum was reformed in 2006 (LK06). The new curriculum of 2006 placed a stronger influence on reading in all subjects and on the teaching of reading strategies. The slight increase in scores might therefore reflect an improvement in the Norwegian school system with regard to reading abilities, and may also indicate that the stronger focus on reading in English with the new curriculum has made a difference. This can also be seen in Hellekjær (2012) and Hellekjær and Hopfenbeck (2012).

Another issue is whether or not any of the respondents are at risk of falling below the linguistic threshold level (see Ch.2, p. 22 for more information). According to Alderson (2000), second-language knowledge is more significant than first-language reading abilities and “that a linguistic threshold exists which must be closed before first-language reading ability can transfer to the second-language reading context” (p. 39). In other words, a reader must have a certain level of second-language proficiency in order to transfer reading abilities, such as reading strategies, from the L1 to the L2. Whether or not any of the respondents fall below this linguistic threshold can be indicated if there is a large gap between their scores, namely high scores in the L1 and low scores in the L2. Table 4.6 shows the crosstabulated scores for *EngIndex* and *NorIndex*.

Table 4.6. Crosstabulated scores for EngIndex and NorIndex. N=142

<i>EngIndex</i> score	<i>NorIndex</i> score					Number of respondents
	3	4	5	6	7	
2	0	1	2	0	0	3
3	1	4	4	1	1	11
4	1	7	13	12	5	38
5	3	2	19	17	2	43
6	0	1	6	19	14	40
7	0	0	0	2	5	7
Number of respondents	5	15	44	51	27	142

Note: The highlighted numbers show the respondents with high scores in Norwegian (5 or better) and low scores in English (4 or lower), which indicate that these are at risk of falling below the linguistic threshold level.

This crosstabulation shows that 38 of the respondents (27%) have high scores in Norwegian (5 or better) and low scores in English (4 or lower), and that some of these are at risk of falling below the linguistic threshold level, which mean that they are unable to transfer their reading skills and strategies from Norwegian (L1) to English (L2). Not being able to transfer reading strategies from the L1 to the L2 can mean that they do not read in an efficient way and struggle with comprehending the information in the text. Hellekjær (2005) found that 217 out of 528 respondents, 41%, risked falling below the linguistic threshold level (Hellekjær, 2009, p. 207). That is a higher percentage than for the present study. However the difference in sample size may play a role in explaining the difference. Regardless, both studies show that a significant percentage of the respondents risk falling below the linguistic threshold level. Nevertheless, the present study shows that there is an improvement and fewer respondents are at risk of falling below the linguistic threshold level. This means that the respondents English reading proficiency has improved since Hellekjær (2005), and when fewer respondents risk falling below the linguistic threshold level it is reasonable to assume

that the respondents are more proficient and better prepared for reading academic texts in English than they were before. The question then becomes whether or not the improvement is good enough and why there has been an improvement.

4.4 English instruction in upper secondary school

As mentioned in an earlier section of this thesis, the number of years of English instruction in upper secondary school is considered important when looking at the reading of English course material in higher education. English is only compulsory the first year of upper secondary school, which means that the first-year course is to give students the qualifications necessary to study at higher education. Second, the expectation that students of natural sciences and mathematics only attend the compulsory, first-year English course has been considered. Skarpaas (2011) found in her master thesis that many pupils could not choose the elective English courses the second and third year because they chose to prioritize other subjects, most commonly natural science and mathematics (p. 82). In addition, whether choosing to follow the advanced English courses available the second and third year make students more prepared for higher education than those who only follow the English course their first year need to be questioned.

As was shown in Table 4.2, 47% of the respondents only attended the compulsory, first-year English course in upper secondary school. Furthermore, the expectation that students of natural sciences and mathematics only attend the first year English course was to some degree confirmed. Among the respondents studying natural sciences and mathematics, 55% the respondents from the first lecture (KJM1110) only followed English the first year and the number from the third lecture (STK1100) was 61%. In contrast, 56% from the lecture (SOSANT1600) at the Faculty of Social Sciences graduated from upper secondary school following English all three years and 19% only followed the compulsory, first-year English course. Again, the present study contains a relatively small sample, so one has to be careful when making assumptions and generalizations. Nevertheless, this is a good indication on the situation in upper secondary schools in Norway today and corresponds with Skarpaas (2011) findings.

The next issue is then whether the participants' English instruction in upper secondary school have an effect on their reading of English course material in higher education. According to Hellekjær (2005) "it would seem reasonable that beginner students who have completed the Advanced English course would have had an initial advantage over those who

had not” (p. 229). To examine this the mean *EngIndex* scores for the respondents with only one year of English instruction in upper secondary school were compared with the scores for those who completed English the second and third years. These were also compared to Hellekjær (2005) who explains that:

A large difference in reading scores in favor of the advanced English course would indicate that the number of teaching hours is important, whereas little or no difference would indicate that the content and quality of teaching is important. (Hellekjær, 2009, p. 210)

Table 4.7 shows the reading scores for the additive indict, *EngIndex*, based on the highest level of completed English instruction at upper secondary school to see whether or not the respondents reading of English improved with having three years of English instruction compared to one year only.

Table 4.7: Distribution of reading scores in *EngIndex* with regard to most advanced English course completed in upper secondary school, and comparison to Hellekjær (2009, p. 210). N=141

Upper secondary English course	Present study		Hellekjær (2009)	
	<i>EngIndex</i> Mean scores and SD	Number of participants	<i>Enindex</i> Mean scores	Number of participants
Vg1	4.7 (SD=1.1)	66 (46%)	4.4	195
Vg2	4.7 (SD=1.0)	29 (20%)	-	-
Vg3	4.9 (SD=.8)	44 (32%)	4.8	167

Analyzing the mean *EngIndex* scores for the present study show that there for this sample has been a limited improvement in proficiency for those participants who followed English all three years of upper secondary school compared to those who only finished the first-year English course. It should be expected that by choosing to specialize in English the second and third year of upper secondary school, students would be more proficient readers of English course material in higher education. It can also be assumed that continued exposure to the English language in a formal setting will improve students’ fluency, vocabulary and overall reading proficiency. As shown in Table 4.7, the scores show no improvement in English reading proficiency between those who followed the first-year English course and those who chose to follow the elective English course the second year of upper secondary school. Moreover, the mean *EngIndex* score only show a .2 points increase between those who had one year of English instruction and those who completed upper secondary school with English all three years.

In contrast, Hellekjær (2009) found a lower score for those who only finish the first year English course than the present study, but the increase in reading score from the first year course to the advanced English course the third year was greater than the present study. When the present study found that the mean score only increase with .2 points, Hellekjær (2009) found that it increases by .4 points. The difference is low in both studies, which, according to Hellekjær (2009) indicate that “it is not the number of teaching hours, but most probably the content and quality of EFL teaching in general and the lack of reading practice in particular that explains the reading difficulties” (p. 210). Having a lower difference in the present study may be a result of the smaller sample compared to Hellekjær. However, the results paint an unflattering picture of the English courses offered in upper secondary school when they are thought to be preparatory for higher education. In addition, the low difference in scores is “particularly serious” (Hellekjær, 2009, p. 210) when the students get a considerable amount of input with five-hours-per-week over two years in addition to the compulsory, first-year English course, which is also five-hours-per-week. This is a quite significant number of hours with formal English instruction and could well be expected to have an impact on students’ reading proficiency in higher education.

4.5 Study experience

Study experience, meaning whether or not the respondents had attended other higher education courses before starting what they study at the time of the present study, is considered in relation to the respondents English reading proficiency. It can be expected that there is a difference between being a beginner student and an experienced student, and it is reasonable to assume that more experienced students have improved their reading proficiency compared to when they were beginner students. This because one will most likely be more familiar with the vocabulary used, have a better understanding of the content and be more familiar with reading academic texts. Since the present study aims at looking at new students and therefore beginner, introductory courses were as mentioned chosen for the questionnaire. In addition an item (Item 5) that asked the students about whether or not they had any prior higher education was included in the questionnaire. The goal of investigating beginner students was accomplished when 107 (75%) of the participants had no prior higher education and 35 (25%) had prior higher education, bachelor degrees and/or master degrees (Table 4.1, p. 43). Table 4.8 show a comparison of the mean *EngIndex* scores between the respondents

with and without prior higher education to see whether or not study experience have an impact on reading proficiency.

Table 4.8: Comparison of *EngIndex* reading scores and prior higher education N=142

	Mean score	Std. Deviation	N
No prior higher education	4.8	1.1	107 75%
Prior higher education	4.7	.9	35 25%

As can be seen in Table 4.8, reading proficiency does not necessarily improve with study experience, as was also the case in Hellekjær (2005). Again it is important to point out that these are the results of the data collected in this study and that others may get different results. As mentioned, Hellekjær (2005) used the same survey, items and additive indices, and when study experience was correlated with the additive indices in that study he found “no significant or meaningful correlations”. He states that “This means that the data in this survey does not indicate that student reading proficiency improves with study experience.” (Hellekjær, 2009, p. 208). This is also the case in the present study.

4.6 Unfamiliar vocabulary

How readers handle unfamiliar words is considered important since this often is the key challenge for readers of a foreign language. Word recognition is one of the lower-level processes that is required for good reading comprehension and fluency. When reading in a second language, readers will most likely encounter a number of unfamiliar words, and perhaps beginner students in higher education will encounter more unfamiliar words in English than they would in other situations. Table 4.4 (p. 46) showed that unfamiliar words is what the respondents in the present study find challenging when reading English course material. In addition, this was one of the items with the largest gap between Norwegian and English when it came to reading. Therefore, how the respondents handle unfamiliar words when reading English course materials is an important issue. In the questionnaire a number of items (Item 31-37) ask the respondents how they handle unfamiliar English words, including dictionary use, guessing the meaning, asking others for the meaning or whether or not they give up reading a text because of unfamiliar words. The respondents answered the items on a scale from 1 to 7, where 1 indicated that they *never* use that strategy when handle unfamiliar words and 7 indicated that they *frequently* use it.

Table 4.9: Distribution of respondents on items concerning ways of handling unfamiliar words (Items 31-37). N=142

	Never	2	3	4	5	6	Frequently
31 - Look up in a dictionary	5	11.3	11.3	14.2	19.1	17.7	21.3
32 - Guess the meaning from knowledge about the subject	2.1	5.6	12	14.1	28.2	23.2	14.8
33 - Guess the meaning from the content of the text	.7	3.5	9.2	11.3	29.6	27.5	18.3
34 - Ask a lecturer	60.6	21.8	7.7	6.3	2.8	-	.7
35 - Ask other students	14.8	16.2	15.5	15.5	21.1	9.9	.7
36 - Continue reading	3.5	15.5	17.6	16.2	18.3	13.4	15.5
37 - Give up reading	59.9	23.9	6.3	6.3	-	1.4	2.1

Note: The scores are presented as percentages (%) of respondents

Table 4.9 shows that the least used way of handling unfamiliar vocabulary is asking others for the meaning of the unknown word. However, a higher percentage of respondents say that they ask fellow students compared to asking lecturers or teachers. Students might feel more comfortable asking peers and because the lecture is thought in Norwegian it might be a bit awkward and unnatural to ask about the meaning of the English vocabulary.

When it comes to looking up the unknown word in a dictionary (Item 31) it was expected that the respondents do this frequently. As has been mentioned earlier, it has been assumed that Norwegian students tend to learn to read texts carefully for detail, which in turn means that they are often taught that one needs to understand all the words in the text in order to understand what the text is about. Using a dictionary may be an effective tool when encountering unfamiliar words, but this is a strategy that, according to Hellekjær (2009), can “seriously disrupt(s) the reading process” (p. 208) when used too much. In the present study, 58% of the respondents answered that they use a dictionary often and frequently (5 or better) which indicate that they frequently interrupt the reading process to look up unfamiliar words. Because vocabulary knowledge is such an important element of fluent reading this can be seen as an indication that these readers are not proficient enough and therefore need to disrupt the reading process to consult a dictionary. On the other hand, the results from the questionnaire do not indicate *when* the readers consult a dictionary. Do they stop at each unfamiliar word or do they finish the sentence or paragraph before looking up the word? The answer to these questions can to some degree indicate proficiency level when readers who finish the paragraph might do so in order to try to guess the meaning of the word from the content or prior knowledge. Where as those who do not might not be able to do this and

therefore interrupt the reading mid sentence. These were therefore questions asked in the qualitative study and will be looked at later when presenting the results from these interviews.

Another strategy used when handling unfamiliar words is guessing the meaning on the basis of subject knowledge or content of the text. More fluent readers are able to draw conclusions and guess the meaning of unfamiliar words based on their background knowledge and the content of the text that they have read, and will therefore most likely be less dependent on dictionaries. The advantage of guessing the unfamiliar word is that it does not disrupt the reading process in the same way as consulting a dictionary. 66% of the respondents answered that they guess the meaning of the word from their subject knowledge (Item 32) often to frequently (5 or better). In addition 75% answered that they often to frequently (5 or better) guess the meaning of the word from the content of the text (Item 33). This indicates that the majority of the readers are proficient enough readers of English that they do not need to consult dictionaries or ask others the majority of the time. At the same time, having such high frequency in scores on the item concerning dictionary use and the two items regarding guessing the meaning of unfamiliar words is confusing when these suggest different levels of second language proficiency.

As expected, the majority of the respondents do not give up reading because of unfamiliar words. However, it should be noted that 9,8% of the respondents answered that they sometimes to frequently (4 or more) give up reading because they encounter unfamiliar words and are unable to handle them. These 9,8% make up 14 respondents, and the mean *EngIndex* score for these 14 respondents was 3.6 (SD = 1.1, $N = 14$). This is well under the overall mean score of the present study, which was 4.8. In addition, the high negative correlation on this Item (Table 4.10) indicates that those who give up reading due to unknown words are those with low *EngIndex* scores. This strengthens the argument that this group has poor English proficiency.

When the clear majority of respondents answer that they do not give up reading because of unfamiliar words, it is expected that the item that asks whether or not the respondents continue reading (Item 36) mirrors this majority. This is not the case, and the respondents' answers are surprisingly evenly distributed on this item. It is possible that the respondents have misunderstood the item and therefore the distribution is not as expected. Because this does not make much sense, it will not be discussed in detail here or in later sections of this thesis.

To get a more detailed overview of possible relationships between ways of handling unfamiliar words and English reading proficiency, bivariate correlation analysis was conducted. This was done to see how the respondents' ways of handling unfamiliar words correlate to the respondents reading scores in English. Table 4.10 shows the bivariate correlation of ways of handling unfamiliar words (Item 31-37) and *EngIndex*.

Table 4.10. Bivariate correlations of ways of handling unfamiliar words (Items 31-37) and *EngIndex*. N=142

Independent variable	Bivariate correlations (<i>r</i>) with <i>EngIndex</i> scores as dependent variable
Dictionary use	.02
Guess meaning of word using subject knowledge	.25**
Guess meaning of word using context	.20*
Ask lecturer	.19*
Ask other students	.00
Continue reading	-.11
Give up reading	-.50**

** Correlation is significant at the 0.01 level

* Correlation is significant at the 0.05 level

The analysis of the bivariate correlation show that some of the strategies have a weak, or non-significant correlation, including dictionary use, asking other students and continuing reading. The positive correlation for the compensatory strategies (i.e. guessing the meaning of the unknown word using subject knowledge or the context of the text) indicates that the students who are able to do this have high reading scores in English, and therefore do not have to interrupt the reading process when handling unfamiliar words. However, Hellekjær (2005) got similar results and points out that “These two positive correlations, however, are too low to allow any firm conclusion to be made” (p. 156). The highest negative correlation is found on the item that asks students how frequently they give up reading due to unknown words (Item 37). This high negative correlation indicates that those respondents who often give up reading are those who struggle with reading in English and have low *EngIndex* scores.

4.7 Strategy use

The next issue that will be considered in this section is the respondents' use of reading strategies. Knowing what the purpose of the reading is and what to do in order to understand and remember the information of the text is something that requires training and conscious thought. It has been assumed that Norwegian students tend to read carefully and for detail, and struggle with shifting their reading strategies according to the purpose of their reading. Five items (Items 26-30) that ask the respondents how they read and what they do when reading was included in the questionnaire to see what the respondents most commonly use. The respondents answered the items on a scale from 1 to 7, where 1 indicates that the strategy is not used at all, and 7 indicates that it is much used. These items were designed to give information about the respondents strategy use, but Hellekjær (2005) found that these items were better designed to give information about how the respondents read rather than strategy use. Table 4.11 show the distribution of respondents on the five items (26-30) to give a picture of what the respondents do when they read English course material.

Table 4.11. Distribution of respondents on Items 26-30. N=142

Items 26-30	Never used	2	3	4	5	6	Much used
Read straight through the text	4,2	6,3	8,5	16,9	23,2	20,4	20,4
Read straight through the text before reading for details	16,2	16,9	21,1	21,1	14,1	4,2	6,3
Take notes and underline important words and key points	12,7	13,4	5,6	5,56	9,9	15,5	37,3
Write summaries	25,4	18,3	16,2	9,2	12,2	7,7	11,3
Take regular pauses when reading to reflect on the text read	5,6	6,3	16,9	22,5	17,6	18,3	12,7

Note: The scores are presented as percentages (%) of respondents.

As mentioned, the items presented in Table 4.11 show, to a higher degree, what the respondents actually do when reading instead of their use of reading strategies. Therefore the items show the respondents use of memorizing strategies such as taking notes and underlining key points, organizing strategies such as writing summaries and monitoring strategies like reflecting over the content read. As Table 4.11 shows, organizing strategies and writing summaries are the least used by the respondents in this study. Whether this is the

case, because it is too time consuming or because students are not used to writing summaries from upper secondary school is an interesting question. In school pupils tend to be asked to read and then answer questions related to the text or discuss the topic with fellow pupils. There is less training in writing summaries, extracting the most important information from a text and reflecting over the content in the text (The Norwegian Directorate for Education and Training, 2013, p. 4). In addition, exams and term papers are the majority of the time open book tests at upper secondary school, whereas this is not the practice for most courses at higher education. Studying for an open book exam is different from studying to a closed book exam and writing summaries might not be necessary in the same way.

Unlike writing summaries, the clear majority of the respondents say that they take notes and underline important words and key points when reading. Doing this does not interrupt the reading process and makes it easy to go back to recall and identify the important points in the text. Taking notes can be a time consuming activity and the interesting question then becomes; what do the respondents do with these notes after reading? For notes to be helpful, they need to be worked with and revisited in order for the information to stay in the long-term memory and to be recalled when needed. Again, this will be discussed more when looking at what the respondents from the qualitative interviews answered on the same question.

4.8 The open-ended question - Item 38

The last item in the questionnaire asked the respondents to explain in their own words how they read English course material and about their experiences with reading in English. After the survey, all answers were looked through and those who had answered item 38 were written into a separate document, eliminating those who gave single word answers and those who did not seem serious or relevant (for example ‘good luck’ or ‘open book, look at book, understand text’). That left 60 statements with explanations about experiences of reading in English. In the following, some of these statements will be presented and briefly discussed.

Reading speed and fluency has been discussed earlier and several respondents made comments about this on Item 38. One commented that “In the beginning it (reading English course material) was much slower and I needed more breaks, now it is fine.” Another student said that reading English course material is “much slower, but that is my fault. I probably should have read more English earlier.” Similarly, another said, “I have to set aside more time when reading course material in English.” This is confirmed by another student who

said, “I think its fine reading English, but it takes more time.” Overall, several students express that reading English course material is slower compared to Norwegian and some express their frustration with this. One student’s comment clearly shows this frustration:

I become frustrated when I have to spend a full study day on *one* text because I have to look up words all the time, the result is that I have a very poor understanding of the English course material on the reading list.

This frustration was expressed by other students as well. Having problems with understanding the subject one is studying because of difficulties with the English language seems to be a problem and these quotes show that it can impact students confidence and motivation to continue reading and studying at higher education.

Moving on from the last comment in the previous section, it is logical to look at the comments concerning unfamiliar words and how the students handle these. The majority of the comments that discuss unfamiliar vocabulary explain that when encountering unfamiliar words they look up the words in an online dictionary. Some explain that they finish reading the sentence before looking the word up, while the majority does not comment on when they look up the words. Many of the respondents explain that it is technical and subject-specific vocabulary is what they struggle with. One student explains “many new, unfamiliar technical terms can make the text difficult to read.” Another student explains “my best strategy is to look up all words I do not understand in Google translate, and after a while I look up fewer words, fewer times and remember more.” By looking up all unknown words all the time he is slowly able to increase the vocabulary. Other students explain that because of “difficult language” it is hard to understand the overall message of the text and to see the content in a context, which in turn “make my understanding of the total content of the text poor.” Most of the respondents look up the unfamiliar words in a dictionary and spend more time on this than they would if the course material was in Norwegian. Although most of the respondents are able to manage unfamiliar words, one respondent commented that English and unfamiliar words made studying nearly impossible:

I really struggle with English in general, and did not know that the subject I am studying requires that high an English level. The subject consists of many difficult words from the start, and with English as well it becomes even more difficult. Therefore I am considering changing studies next year.

This comment might be extreme and not representative for the general population of Norwegian students. However, the point here must be that there are students in Norway who are unable to achieve the results they want, or do not feel that they can continue studying,

because of English course material and the challenges they face when reading in English. Another student commented that “I wish all course materials were in Norwegian” because of unfamiliar vocabulary, and that this made it “difficult to keep up with the reading”. This student argued that struggling with English in addition to the subject itself made it difficult to study, and it did not make sense to this student that he or she should have to struggle with reading at this level of education.

Some of the respondents also described their reading process and what they actually do when reading. One respondent explained that “I read word for word” and did not go into more details other than that. This can indicate that the student read texts carefully, however, the comment is not detailed enough to allow for any assumptions. It has been expected that Norwegian students favor careful reading when this is what they are used to from lower education, and some respondents comment support this. For example, one student explained, “I read concentrated through all sentences and make sure I understand everything.” Another student explained that when reading, each paragraph is read before he or she take a short break to think about the information and make sure that everything is understood.

In their comments, many of the respondents compared reading Norwegian course material to reading English course material. A number explained that reading English course material would be easier if the lectures and lecture notes were in English, instead of Norwegian. One respondent commented on this saying that “it (reading) would have been easier if the lectures were in English or if all books were Norwegian when lectures are in Norwegian.” Another respondent feels that reading in English is mostly manageable when it is part of a subject that “is not over the average difficulty level”. In addition, the comment that writing exams in Norwegian “can be tricky” and add an additional translation and language difference for student.

4.9 Summary – quantitative study

The results from the quantitative study have shown that the respondents find reading Norwegian easier than reading in English. In addition, 27% of the respondents are at risk of falling below the linguistic threshold level as indicated by their having high scores in Norwegian and low scores in English. Furthermore, the results show that the majority of those studying natural science and mathematics only follow the compulsory, first-year English course in upper secondary school, while the majority of those studying social

sciences complete upper secondary school with English all three years (Table 4.2). Moreover, there is a very limited improvement in English reading proficiency between those with English instruction one year of upper secondary school and those with all three years. This indicates that having two more years of formal English instruction, five-hours-per-week, does not improve students reading proficiency significantly. Similarly, the results show no improvement in reading proficiency between the respondents with or without prior higher educations. Unfamiliar words are one of the key sources of difficulty for the respondents in the study, and the majority of the respondents handle these by either consulting a dictionary or guessing the word based on subject knowledge or context of the text. Moreover, as many as 9.8% say that they sometimes to frequently give up reading because if unfamiliar words. These respondents also show a significantly lower reading score in English compared to the overall reading score.

5 Results - the qualitative study

In this section the results from the five semi-structured interviews will be presented. As mentioned earlier, notes were taken during all interviews as well as them being recorded so that they could be transcribed later. Unfortunately, the recording of one interview (Peter) was damaged and was therefore not transcribed. I used the notes taken during the interview in the analysis. To assure the anonymity of the interview objects, each interview object was given a randomly chosen, male name and will be only be referred to using these names. The following section presents the results of the qualitative study and will be structured according to the topics in the interview guide (Appendix B) used during the interviews.

5.1 Background

The respondents' background was central when selecting the sample for the qualitative study. A number of criteria were used when selecting the sample, including reading proficiency and background. With regard to reading proficiency the goal was to get respondents who struggle with reading English to some degree. This was difficult because of the limited sample to choose respondents from. Table 5.1 gives a brief presentation of the respondents' reading scores in the quantitative study and background.

Table 5.1: Brief overview of the qualitative samples' reading scores in the quantitative study and background

	Nick	Peter	Bob	Matt	Jack
Mean score: <i>NorIndex</i>	6.8	5.3	6.5	6.5	6.0
Mean score: <i>EngIndex</i>	6.2	4.5	4.3	6.0	5.7
Prior higher education	No	No	No	No	No
Most advanced English course completed in upper secondary school	Vg3	Vg1/Vg2	Vg1	Vg1	Vg2

As can be seen in Table 5.1, the majority of the respondents had an *EngIndex* score that is higher than the overall mean score of 4.8. Indeed, the respondents' have high scores in regard to reading proficiency in both Norwegian and English. However, Table 4.6 (p. 49) showed that 27% of the respondents risk falling below the linguistic threshold level when they had high scores in Norwegian (5 or better) and low scores in English (4 or lower). Therefore, as Table 5.1 shows, Bob is on the borderline of falling below the linguistic threshold level and is struggling with reading English course material.

Another criteria when selecting the sample for the interviews was that the participants only had completed the compulsory, first-year English course in upper secondary school. This was not fully accomplished because of a limited selection of participants to choose from. Nick completed upper secondary school following the English courses all three years. In addition, Jack first completed the compulsory, first-year English course, before completing an English course in communication and information technology as part of his vocational training. Later Jack also finished the compulsory English course a second time. Peter only followed the compulsory, first-year English course in upper secondary school, but took the elective English course for the second year (Vg2) as an external candidate after starting his higher education, since this is a requirement for medical school in Denmark for which he is applying. None of the respondents had any previous higher education, and were therefore classified as beginner students.

5.2 English instruction in upper secondary school

An important issue for the present study is English instruction at upper secondary school and whether or not it is preparatory for higher education. In addition, it is anticipated that students of natural sciences and mathematics only follow the compulsory, first-year English course and do not choose the elective advanced English courses the second and third year. Therefore, questioning why the respondents did not choose English after the first year was central.

To this question Bob explained that this was because he wanted to specialize in science at upper secondary school and needed a certain number of science courses (mathematics and either biology, chemistry or physics for two years) to meet the requirements for higher education. Therefore, Bob chose not to elect the English course available the second and third year. Even more interesting, Bob explains that: “I really had a desire to take it (English), but I met with a guidance counselor who said that that English would not be of use in regards to a workplace in science (...), but at least I was told that you don’t need that English.” In other words, Bob was discouraged from electing English further, despite his desire and interest in the language and course. It can be understood that the guidance counselor argued that English in upper secondary school does not include science related vocabulary and that Bob would get more relevant knowledge by choosing to specialize in science. Bob further explained; “I got the impression that English would in no way be useful for me. But I have thought about this later, and realize that it was a bit odd to

say this.” Therefore Bob had 2 years without any English instruction before starting higher education.

Similarly to Bob, Matt and Peter chose not to continue with English their second and third year of upper secondary school because of their specialization in science. Although, Peter only finished the compulsory English course in upper secondary school, he later took the elective English course for the second year as an external candidate due to the requirements for being accepted to medical school in Denmark. He explained that he wishes that there were similar requirements in Norway because of the level of the course material he has had to read in higher education. He states “English should be obligatory all three years of upper secondary school.” This seem to be the consensus among the interview objects and all suggest that they would have benefitted from having more English instruction in upper secondary school.

Next, the level of the texts read in the English course the first year of upper secondary school was briefly discussed. On the questions about what texts he read in English Matt explained that the focus was mostly on British and American literature, and on the question on whether or not it was difficult to read the text, Matt answered “No, it went quite alright”, Peter remembers that they mostly read the textbook that consisted of simple factual texts and some literary works. He continued by saying that one time his teacher brought an article that was written in more academic language, and this was challenging for many of the students. However, Peter reflects that reading only one article like this was not sufficient if the goal was to introduce them to academic language. Reading simple factual texts and not feeling challenged when reading the textbook was also the reality for Bob and Jack. It has been mentioned that all of the interview objects stated that they do not find reading English prohibitively difficult, especially not in upper secondary school, therefore it is not surprising that they all found reading English textbooks easy.

Nick, who completed upper secondary school with English all three years, explains that the second and third year was focused on literary texts and some were more challenging to read than others. But when explaining the level of the text the first year, Nick agrees with the others and say “For the most part we read simple factual texts. (...) No, it wasn’t very challenging.” He explained that there was a difference in level between the texts he read in upper secondary school compared to the course material he read now, Nick explained “Oh yes, oh my God yes, it (the difference) is quite significant”. What seemed to be the biggest difference was that more academic nature of the language and the terminology. The terms are familiar in Norwegian but not necessarily in English and he explained, “in mathematics, we

know all the terms in Norwegian so therefore one might not now that “derivering” in Norwegian is ‘differentiation’ in English, etc. so that can make it hard...” Having to learn the vocabulary in English is something that all new students have to do, but as this study has shown, it can be an important source of confusion and difficulty.

Furthermore, the respondents, especially the respondents who specialized in science and mathematics in upper secondary school, were asked what they would have benefited from learning in the first-year English course with regard to better preparing them for their higher education. There was a consensus that learning the vocabulary and terminology from science and mathematics in English would have made a big difference in the transition from lower to higher education. Nick explained that integrating English and science would “be very useful, and getting some insight into how reading English course material for other classes than English, would be most useful for everyone who will take a university degree.” According to Nick, this is what he wished there was more of in upper secondary school, that is to say integrating English with other subjects. Bob seconds Nicks’ opinion and explains that one of the elective courses, either in English or science, should be ‘Scientific English’. Bob elaborates and explains:

I believe it would have given me a huge advantage, or it is difficult to say because I don’t know how it would be, but I know how it has gone so far, and it would have been a nice preparation to have an English that was relevant, and maybe it would have made me more used to reading this type of texts, and I would perhaps be more efficient when reading.

It should be expected that reading proficiency and vocabulary knowledge increases with experience, hence one would think that the suggestion made here would perhaps make students of science and mathematics more prepared for higher education in Norway. Matt also added “when you have an English within the subject area that you have chosen and are interested in, it becomes narrower and perhaps it is easier to get excited about the subject, compared to regular English.” Being a motivated reader is important and motivation may have a strong influence on ones confidence when it comes to reading, perhaps especially when reading in a formal setting.

5.3 Study experience

Being a new student in higher education can be exciting, scary and full of new experiences, in addition having large amounts of English course materials on the reading list is the reality

for many new students. It was therefore interesting to ask the respondents about their expectations about reading in higher education before they started, whether or not they received any information about it before starting, and whether or not they were offered any introductory courses that focused on reading strategies when they started.

The only respondents who seemed to expect large amounts of English course material in higher education was Bob, who got the information from friends and therefore started to prepare by reading English literature. Bob explains that “I became very aware that my English had become terribly bad because I hadn’t received any English instruction the last two years of upper secondary school, so I tried to only read English literature.” Bob believes this improved his vocabulary slightly, however he notes that “scientific language is NOT fictional language”. Reading English literature is a good way of maintaining ones English proficiency, however in most cases fictional literature does not give sufficient insight to the academic language one encounter when reading in higher education. Nick explained that he does not think that many of today’s beginner students are very surprised when they learn that they will be reading English in higher education, but that the question is how conscious they are of it.

Matt did not receive any information about much of the course material at higher education being in English, but looking back he can see the value of being made aware of it. On the question on whether or not it would have been helpful to know what is expected of students in higher education he explains:

It’s difficult to know (what is expected) before you start. I think they should spend more time on informing seniors in upper secondary school, especially those in the Educational Program for Specialization in General Studies, about what they can expect and what is expected of them.

Seeing that none of the respondents received any information about what to expect or what would be expected of them in higher education, and that all felt that this information would be valuable, indicates that there is a problem. Studying in secondary education is not the same as studying in higher education, and it seems like beginner students are left to themselves in discovering how things work. Peter explained that he did not know what to expect or what was expected of him, and the first semester he barely managed to get by. He had not studied enough, spent the last 5 days before his exam reading almost everything, and barely passed his exam. Several of the respondents said that they have been in the same situation, or know people who have done this because they have not read enough throughout

the semester, or because of a poor understanding of the content of the English course material.

Next, the respondents were asked whether or not they were offered any courses focusing on reading strategies when they started studying in higher education. None of the respondents received instruction in this, and Jack explain that this was something that he thought was missing when he started. Not knowing how to read in the most efficient way and how much was expected of him made him “read like a maniac” the first semester. Some of the respondents were offered courses in writing or to refresh their subject knowledge, but not in reading. Matt explain that not being offered instruction in reading strategy use means that he has to test different ways of reading and discover that some work for him while other do not. This is time consuming and according to Matt, not efficient. In later sections that discuss reading, the respondents reading strategies and what they do when reading will be looked at in further detail.

5.4 Large amounts of English course material

In this section I present how the respondents actually experienced reading large amounts of English course material. In addition, many of the respondents wanted to talk about their experience with having the course material in English and lectures and exams in Norwegian, which will also be mentioned in the following section.

All the respondents expressed that the majority of course material on the reading list had been in English since they started higher education. In addition many expected that this, to some degree would be the reality before they started. However, Matt explained that expecting English course material and having information about it before starting would have made it easier when starting higher education. He continues by reflecting that “yes, because it is a little shock starting higher education and everything is new. I started right after upper secondary school and it was a major transition.” As Matt explains, everything is new and struggling with English and the transition to reading academic texts is just one aspect of it. Nick also feels that “Being better prepared and learning how to read large amounts of English course material in an efficient way, is something I believe would have been very valuable.” Learning and knowing how to read English course material in an efficient way require patience and the respondents commented that this was something they should have been taught. Bob explains that reading is a time consuming task when the reading list is long, and if he wants to read it in detail and make sure he understands and remembers the information,

he is often not able to read everything. First, he explain that he has to take short cuts, for example reading the summary of a chapter, because he does not always have time to read the full chapter. But he often feels unsure after doing this because he is not certain he has read enough to have a good enough understanding of the topic. Secondly, in one subject there are about six chapters that he has not read or attended the lecture for because of mid-term examinations in that subject. Bob is not the only one who is behind on his reading, Jack explain that some subjects become less prioritized when it comes to reading and that it has to be that way in order for him to get through it all.

Another topic several of the respondents commented on was how awkward it is having English course material while lectures and exams are in Norwegian. Peter finds it difficult and confusing to have lectures and PowerPoint presentations in Norwegian when the course material is in English, especially initially. When reading he does not translate all terms to Norwegian because he is allowed to write the English terms on exams, in addition it is time consuming to translate. Therefore, he finds it hard to follow the lectures that use the terms in Norwegian. He also explains that he is often not able to connect the Norwegian and English terms and therefore struggle with following the lecture. Bob does not find it confusing in the same way when the lecture and PowerPoint presentations are in Norwegian. However, he explains:

It can be confusing; we have one lecturer who practices having the PowerPoint presentation in English while she is speaking in Norwegian. She explained that this would make it easier for us when the book is in English, but it is VERY confusing, because... if then, there is one word you don't know in English then you don't know where she really is in the PowerPoint, so that is not a good solution.

These are of course personal preferences and it cannot be assumed that all students find it confusing having to deal with two different languages like this. However, the impression was that the faculties involved in the present study allow students to use the English terms on examinations and term papers, which would allow them to focus more on one language. However, it might also lead to greater confusion when both terms are used interchangeably.

5.5 Reading

Reading is the central construct of the present study, and reading was also the most discussed topic during the interviews. First, reading in Norwegian versus English was briefly discussed in regard to difficulty level and reading speed. Second, what the respondents do when reading

and how they read course material was looked at. This includes strategy use and how they handle unfamiliar words. The respondents' understanding of the texts and the impact of background knowledge were also discussed. Last, whether or not reading English course material contributes to increased pressure and/or stress for the respondents was briefly discussed.

5.5.1 Reading in Norwegian vs. English

As it has been mentioned, it is expected that the respondents find reading in Norwegian easier than English. Nevertheless, since the present study is to examine how students experience reading English course material, it was natural to ask how they experience reading in Norwegian compared to English. On the question on what he would prefer Bob answered that "Norwegian would be easier because I read faster... Although I don't think I read English very slowly, I most definitely read more slowly in English." One of the main differences between reading in the two languages for Bob is in skimming through the text. He explains:

I find that reading (in English) is slower, it is more slow than what I am used to, especially skimming a text in English gives a much poorer understanding of the text compared to skimming in Norwegian.

Being able to skim through a text is a good reading strategy, but it is useless if you do not get an understanding of the content of the text. As mentioned, Bob's reading scores suggest that he is at risk of falling below the linguistic threshold level, and his statement further strengthens this. He is not able to transfer this strategy from the L1 because of his lack of English proficiency.

Peter and Jack agree that reading in Norwegian is much easier and faster than reading in English. Matt appreciates that reading in Norwegian is faster and he does not have to look up words when reading. Matt tells about a subject he took and explain "we were given a compendium that the professor had written in Norwegian (all other course material was in English) and it was MUCH easier to read, and you become more motivated." Having motivation when reading is important and can have a positive impact on the reading experience and the learning outcome.

5.5.2 The respondents' reading process

What the respondents actually do when they read course material in English was the next topic of the interviews. How the respondents read, including which reading strategies they use and how they handle unfamiliar words will be discussed separately in the following section, in the form of individual case descriptions of each respondent's reading process.

(a) Peter

Peter was the respondent whose audio recording of the interview was damaged and I only had the notes taken during the interview to refer to. In the quantitative study Peter had close to the same mean reading score of in both Norwegian and English, indicating that he is slightly a more proficient reader of Norwegian than English. In his interview Peter started by emphasizing that he is not confident that his way of reading is efficient, and that he has struggled with trying to find an efficient reading technique. Peter explained that when he reads he has three objects in front of him; his iPad with lecture notes, the textbook, and a notepad. He starts by reading the text chapter-by-chapter, and highlighting important words and key points. Most of the time the lecture notes provided by the professors follow the chapters in the textbook and therefore gives a good indication of what is important in the text. He explains that he encounters a number of unknown words, but most of the time he does not bother to look them up and instead guesses the meaning of the word. When he has read the chapter and underlined important words, he writes notes in Norwegian. He translates and writes the important points into his own words. When studying for exams he rewrites his notes instead of going back to the textbooks. In order to do this he has to make sure that when writing these notes he includes all the important information, and that the notes are detailed enough to rewrite later. This is a time consuming process and, as mentioned before, the first semester he fell behind because he had not read enough, which resulted in five intense days of studying before his exam.

(b) Matt

Matt had high reading scores in both Norwegian and English. As Table 5.1 shows, he has higher scores in Norwegian compared to English, which indicates that he finds the reading of Norwegian course material slightly easier. Matt explains that repetition is important in scientific studies and therefore solving tasks is his main focus when studying. He often starts by solving tasks and reading as he solves them. He explains that "by doing this you get

through the reading list because you read while you solve tasks in order to understand, and then, possibly, I need to read it again after the task.” As can be seen, the focus for Matt is on repetition and solving tasks, not on underlining and taking notes. However, Matt had heard that underlining important words and key points is the “smart” thing to do when reading and studying. He tried to do this when he started his higher education, but explains that “because there are so many important points my whole book was marked yellow or green, in other words I tried to underline the first two semesters, but I thought that this just isn’t working.” Matt was not able to isolate what information was the most important and did not see any value in underlining when everything was important.

When it came to how he handle unfamiliar words Matt explains that looking the words up online or asking others is what he does most of the time. However, he explained that he tries to finish reading the sentence or paragraph before looking up the word in case he might understand the meaning of the word from the context. This works many times and sometimes “it is fine if you don’t understand the actual word as long as you understand the context.” Guessing the word is less time consuming than looking up the word and therefore often becomes the option Matt chooses. When it came to studying for exams he points out that:

There is so much to go through in a short time, I feel that it turns into a lot of memorizing and then after you forget it quickly, and I think that is kind of sad because I want to know it, but when there is so much to go through you just can’t know it all.

This is frustrating for Matt who has felt that he was reading and memorizing to his limit, and then crashed when the time of the exam came, which of course was not a positive experience. Matt has struggled with finding a reading strategy and study method that fits him, and has had little instruction in how to read and study efficiently. Therefore he struggles to get through the course material on the reading list.

(c) Bob

Bob is the respondent whose reading scores showed the largest gap between his reading proficiency in Norwegian and English. He scored 6.5 in Norwegian and 4.3 in English, which places him on the borderline of the linguistic threshold level. When Bob reads he usually underlines important words and key points, but, when he was asked what he does with the marked text he answered: “Nothing!” He continued by explaining that he is “very uncertain about the technique” he uses and that he was actually meeting someone the next day to learn

more about study skills and how to read more efficiently. He wishes this had been offered to him when he started, instead of him having to realize that the way he is reading does not work, and then having to go find someone who might be able to give him some knowledge about it. Like Matt, Bob says that he “is not good at knowing what information is important to underline, so I can underline almost the entire page, which is simply nonsense.” He is used to just reading the text several times from upper secondary school, and taking notes while reading is simply too time consuming, “especially when it takes long enough to read by itself.” Bob seems frustrated and explains that he has tried different strategies, and spends time underlining, taking notes and writing summaries. But, in the end, he never looks at these again even though he feels like he should. As mentioned, Bob find it especially frustrating that he is not able to skim through a text in English like he does in Norwegian, and even though he indicates that he has some knowledge about the different reading strategies, he is not able to use them when reading in English. Not being able to transfer skills and strategies is what defines the linguistic threshold level, and readers who are not proficient enough in the L2 struggle with transfer these skills from the L1 to the L2. Bob reading scores have shown that he is on the verge of being at risk at falling below it and his explanations from the interview support this.

When it comes to how Bob handles unfamiliar vocabulary, his strategy depends on how motivated he is. He explains that “if I am motivated, I have Google translate next to me and type in the words I don’t understand, and end up with a long list of translated words.” However, more commonly he just reads on, and then, at least most of the time, understands the meaning of the word in the context. However, the problem with that is that he “can not provide a definition of the word later”. When he stops to look up words, he finishes the sentence and types inn the word before reading the sentence over again. To the question of whether or not he remembers the information he read in the paragraph before he stops to look up a word, Bob explains that “it is difficult to remember the information in the paragraph I have read regardless because there is so much information in a small space.” In other words, being able to comprehend the information in a text and be able to store the information in the long time memory is important for students when exams are the test of their knowledge.

(d) Nick

Nick had a higher reading score in Norwegian (M=6.8) than English (M=6.2), but lies well above the average mean reading score for both languages of the quantitative study. Nick was

also the only respondent who finished all three years of upper secondary school with the advanced English courses. He relies extensively on his memory when reading and feels that “just reading” works for him. However, he seemed uncertain about his strategy use when giving this answer. To the question of whether or not he underlines words, writes notes or summaries or solves tasks he answered

For the most part, no, at least I haven't at the university so far. In upper secondary school I tried to be good and wrote summaries in history and religion, but I didn't keep it up, it depends on motivation and the two first weeks I said “I am going to write summaries of everything”, but it is tiresome to spend so much time and many hours on writing summaries from each lecture, so then I just think; whatever, I remember it.

We see that even though Nick sees the value in writing summaries after reading, he finds it too time consuming and it is not a priority for him. He reflects that “studying and writing notes of things are very good strategies for internalizing information, absolutely, but for the most part it is not necessary for me.” When studying for exams, Nick mostly solves old exam tasks and then when he encounters a concept or problem he does not have knowledge about, he goes back to the book and reads about the topic over again.

Nick had given the impression that reading and remembering the information in the text is not a problem that affects his studies; however later in the interview some answers gave a slightly different picture. When talking about strategy use, Nick explains that:

Being able to isolate which information in the text is important when reading long, heavy chapters can be difficult for many I imagine, but it is something one can learn, that is reading efficiently and just underline the most important words and not full sentences, and also taking breaks when reading to make sure you remember what has been read, it was a little difficult for me when I started at the university.

Nick seemed a bit confused and uncertain when it came to what he actually does when reading. Early in the interview he explained that he “just read” and does not underline words or take notes because it is too time consuming. He tried doing this in upper secondary school, but stopped because it did not give him a better understanding or recall of the information. On the other hand, later in the interview he explain that being able to underline the most important words and key points in a text when chapters are long and heavy, was something he struggled with when he started studying at higher education.

When it comes to how Nick handles unfamiliar words he explained that he looks the word up online, but most of the time he gets a feeling of what the word means from the context it is in. When he looks up an unfamiliar word he does not “have a problem with

interrupting a sentence to look up the word immediately.” Nick is concerned with increasing his vocabulary and explains that:

Trying to increase your vocabulary is a good idea because not understanding words makes it (reading) more difficult, because even though you can look up all the words, meaning that if you have to look up words every third sentence it breaks up the flow of the reading.

He continues by explaining that without fluency when reading it is difficult to understand and remember the information you have read, and in addition it becomes more difficult to get through the reading list stop continuingly.

(e) Jack

In the quantitative study, Jack had nearly the same reading score of 6.0 in Norwegian and 5.7 in English. Like Peter, this means that he finds reading English course material similar to reading Norwegian course material in higher education. When Jack reads he writes short summaries of key points from the articles. He writes in English and word for word, meaning that he does not rewrite the text into his own words or translate it to Norwegian. He explains that he does not translate the texts into Norwegian because “it is too much extra work I feel, and I want to spend as little time, or I want to get through as much as possible in the shortest possible time.” He feels that by reading and writing down what he is reading at the same time makes him remember the information in a more efficient way. In addition, by writing notes while reading he has a short version of the text when he starts studying for exams.

Similar to the other respondents, Jack has experienced difficulties identifying which information is the most important when reading. He explains “I recognize myself in this. My entire book was underlined yellow, I wasn’t able to prioritize and separate what is important.” Because of this, he realized early that underlining words and key points was not a strategy that worked for him when he was not able to isolate the important information. For Jack, rewriting when he reads has become the preferred strategy.

When it comes to unfamiliar words he expresses that it has not been the biggest problem at the university. When he encounters a word he is not familiar with he looks it up online most of the time. He then writes the translation or definition next to the text in the book or article, so that “when I read the text again later I know the meaning of it.” Most of the time he finishes reading the sentence before looking up the word to see if he can understand the word from the context of the text. Sometimes he does not bother to look up

the word because he feels he can continue reading the text without knowing the exact meaning of each word.

(f) Summary – reading process

Looking at what the respondents do when reading gives the picture that the majority feels unsure about whether or not what they do when reading is efficient. They all say that they have tried different strategies, for example underlining key points, writing summaries and taking notes. There is an agreement that underlining important words and key points is difficult because they are unable to identify which information is important, and therefore end up coloring everything yellow. Taking notes seem to be what most of the respondents prefer, however, this is time consuming and the quality and quantity of notes depends on motivation and time. The most used way of handling unfamiliar words for the respondents is looking them up online, although all respondents said that they frequently try to understand the meaning of the words from the context of the text before looking it up. They also explain that it is fine if they do not understand all words as long as they understand the overall message of the text. Another observation is that some respondents, who take notes when they read, or underline important key points and words, do not look at these notes later when studying for exams. They spend time reading, translating from English to Norwegian, and writing notes from the text, but do not use these notes later because they do not know what to do with them.

5.5.3 Increased pressure/stress due to reading English course material

The next question was whether or not reading English course material contributes to increased pressure and/or stress for the respondents. Bob explains that he does not feel much pressure caused by reading English course material, but adds that it can be stressful because reading in English is slower than Norwegian and there is much to read in all courses each semester. In addition, the feeling that he is not reading efficiently and knowing that he is behind on his reading, especially late in the semester, is stressful. Matt expresses that having so much English course material to read can definitively be stressful for new students. He argues that because of the large amounts of course material to go through in a short amount of time, the focus when reading is on getting through it all and “then you forget it all fast after reading or taking the exam.” Peter agrees with Bob and Matt in that reading in English

can increase the stress levels for students, especially when “everything is your own responsibility and you do not get much help.” He explains that in upper secondary school you are in smaller classes and have teachers and peers available to you to a much higher degree, that is the case in higher education. Large auditoriums and little interaction with teachers and/or other professionals who have knowledge about the subject is something that Peter finds difficult, especially when he encounters a problem, is uncertain, and does not know whom to turn to.

5.6 Is English in upper secondary school preparatory for higher education?

The last question that was discussed during the interviews was whether or not the respondents found that the compulsory, first-year English course in upper secondary school to be adequate preparation for higher education and the reading of English course material. In addition, some of the respondents also commented on whether or not they felt that the scientific courses they completed in upper secondary school were preparatory for higher education, and compared these courses to English. Peter did not feel that he was particularly ready for higher education after finishing upper secondary school. He explained that with regard to the scientific subjects he is studying he felt well prepared, and that he had the basic scientific knowledge needed to study this further in higher education. However, he did not feel that the first-year English course prepared him well enough, or gave him the skills needed to read large amounts of English course material.

Bob answered that “it is nonsense and it (English) should be obligatory all three years!” He continues by explaining that because of the situation at Norwegian universities and the globalized world we live in, one needs to know and understand English. According to Bob, the compulsory English course in upper secondary school “does not prepare you for the language used and reading academic texts in English.” When it came to upper secondary school in general, Bob argues that on a general level it is preparatory with regard to the scientific subjects, which provided the basic knowledge needed.

Jack agrees that “with regard to English one is not prepared.” He also mentions that the way tests and exams are carried out in upper secondary school does not correspond with the system in higher education. In upper secondary school pupils write exams and often regular tests on their computer. In contrast, students at university write

the old fashioned way with pen and paper. In addition, in upper secondary school you are allowed to bring assistive in the form of your textbook, dictionaries, articles, notes, printed Internet articles, etc., to exams in all subjects. However, most courses in higher education do not allow the use of any assistive like books or articles

Jack's point is that this difference might come as a shock to many students when they start higher education and Matt argues that "it might seem like the university is behind in that regard... shouldn't they be leading?"

Nick questions the systems, and thinks about how it is at the university and reading large amounts of English course material and explains that:

I can not understand how English in upper secondary school, that is the compulsory English course the first year alone, should be able to prepare you for higher education, it is hard for me to understand how it can.

He continues by explaining that:

It is telling one who has only finished English the first year of upper secondary school, that this is all you need to know to be prepared for reading at the university, this is not correct. The fact that only the first year English course is compulsory is not consistent with the reality.

As can be seen, Nick is clear in his opinion that the compulsory first year English course "is not adequate" when it comes to being preparatory for higher education, when he was not introduced to the academic language in English course material or some of the scientific vocabulary in English. The respondents all agreed in their answer that they did not find that the first-year English course adequately prepared them for reading of English course material in higher education. In addition, they all felt that something have to be done to improve the situation and that in today's globalized world being a proficient reader of English is important and therefore academic reading and the teaching of reading strategies should be stressed more in upper secondary school.

6 Bringing the two studies together

The present study uses a quantitative-qualitative mixed-methods approach to investigate how beginner university students experience the reading of English course material. The results of both approaches have been presented separately in the previous chapters of this thesis. The qualitative study was included to give additional and more descriptive information about how students experience reading English course material at higher education, and to elaborate and explain the results from the quantitative study. Therefore the two studies need to be looked at in relation to each other. This section will be structured starting each section with a brief summary of the findings of the quantitative study, before explaining these results with the findings from the qualitative interviews.

6.1 Reading

The quantitative study includes six items that ask the respondents about their reading of respectively Norwegian and English course material. First these items were looked at separately and showed that the respondents read Norwegian course material with less difficulty than English course material on all items. Table 4.4 (p. 46) shows that the items looking at lower-level processes (fluency, decoding abilities and sentence understanding) had the lowest scores in both languages and in addition had the largest gap between Norwegian and English. This indicates that the lower-level processes are the main source of difficulty when reading and the gap between shows that the respondents find the lower-level processes more challenging in English than Norwegian. This was only to be expected when English is the respondents' L2.

Next, the six items were merged into additive indices, one for Norwegian and one for English. As expected, the additive indices show that the respondents find reading in English ($M=4.8$) more difficult compared to Norwegian ($M=5.5$). These additive indices were compared to Hellekjær (2005) who used the same items and additive indices in his study. The mean English score was slightly higher in the present study, which indicates that there is a slight improvement in students' English reading proficiency. This raised the questions of whether or not this improvement is good enough and why there is an improvement. One possible explanation might be the change in curriculum since Hellekjær (2005) and the strengthened focus on reading in it.

Last, the scores of the additive indices were crosstabulated to see whether or not any of the respondents are at risk of falling below the linguistic threshold level. Whether or not any of the respondents are at this risk can be indicated if there is a large gap between their scores in Norwegian and English. Table 4.6 (p. 49) shows that 27% of the respondents in the present study are at risk of falling below the linguistic threshold level. Hellekjær (2005) found that 41% of the respondents in his study were at the same risk. Similar to the results found in the additive indices, the comparison shows that there has been an improvement in students English reading proficiency since 2002, when he collected his data. Again, the question is whether or not this improvement good enough and why has there been an improvement?

The reading scores from the quantitative study for the respondents in the qualitative interviews shows that three out of the five interviewees read Norwegian course material with less difficulty than English. The other two indicated that they find reading Norwegian and English course material the same. Despite this, all of the respondents who were interviewed agreed that they read English course material more slowly than Norwegian course material. They explained that because of the large amount of unfamiliar words and the uncertainty when it came to what reading strategy to use, which meant that they read slower and some struggled with reading all texts on the reading list. As the quantitative results showed, it is the lower-level processes, including decoding words, that the respondents struggle with and as a result they read more slowly in English.

Some of the respondents in the qualitative sample commented that having course material in Norwegian would be easier because they read it faster compared to English. Matt said that reading in Norwegian is much easier when unknown words are not a problem and reading is therefore faster, which in turn makes it more motivating. Bob explained that English is slower because he needs to make sure he has understood everything. Seeing that the qualitative sample agrees that reading in English is slower than Norwegian and the main source of difficulty is unknown words, and spending time understanding words and sentence confirm the results of the quantitative study in that the lower-level processes are what students struggle with when reading. Some of the respondents explained that the difference in text level between upper secondary school and higher education is quite significant when they did not encounter many texts written in a more academic language. This combined with scientific vocabulary made the transition from upper secondary school to higher education more difficult than they felt should have been necessary. The respondents studying science and mathematics explained that being introduced to the vocabulary and terminology

beforehand, in EFL instruction, would have been very useful since this is what they struggle with and what affects their reading the most.

Bob's reading scores places him on the borderline of falling below the linguistic threshold level when there was a large gap between his scores in Norwegian and English. In the qualitative interview Bob explained that skimming in English was nearly impossible and gave him a much poorer understanding of the text, compared to skimming in Norwegian. Therefore his option is reading the text carefully for detail, which is time consuming and has resulted in him not been able to complete the course material on the reading list. As not being able to transfer different reading strategies (for example skimming) from the L1 to the L2 confirms that Bob is at risk of falling below the linguistic threshold level and that he is not proficient enough in English to read efficiently.

6.2 English instruction in upper secondary school

It was expected that many student who specialize in science and mathematics in upper secondary school do not choose the elective English courses the second and third year because they prioritize other subjects in science and mathematics. In addition, it has been expected that they make these choices because they prioritize the available elective courses in science or mathematic in order to meet the requirements for admission to higher education. The results from the quantitative study showed that 55% of the respondents from the Faculty of Natural Sciences and 61% of the respondents from the Faculty of Mathematics only finished the compulsory first year English course, while in the sample from the Faculty of Social Sciences 60% completed upper secondary school with English all three years (Table 4.2, p. 44). This indicates that the majority of those studying science and mathematics choose not to continue with English their second and third year.

Next, the mean *EngIndex* score of the respondents who only completed the compulsory, first-year English course was compared to those who completed the advanced English courses the second and/or third year to see whether or not their English reading proficiency improved. The data shows that there is almost no improvement in reading score between those who only attend English the first year and those who have English all three years. The mean *EngIndex* score for those who finished the first year was 4.7, there was no change for those who had two years of English and it only improved to 4.9 for those who had English all three years (Table 4.7, p. 51). When compared to Hellekjær (2009) the present study had a slightly higher score, especially for those who completed the first year English

course. However, the gap between the scores was only .2 in the present study and .4 for Hellekjær (2009), meaning that the respondents in Hellekjær improved more than the respondents in the present study to the extent this miniscule difference is meaningful at all. Nevertheless, the limited improvement is alarming when one should expect that student who have two more years with five-hours per week, of formal English instruction are more proficient in the English language. The low difference indicate that it is not the number of teaching hours, but probably the content and quality of EFL teachings in general, and lack of reading practice in particular that explains the reading difficulties.

Out of the five respondents in the qualitative interviews, four were studying science or mathematics at the university, and only one of these chose to continue studying English the second and third year of upper secondary school. This was Nick, who was able to choose additional English because he did not need biology or chemistry in order to get accepted to the study he wanted to attend in higher education. In contrast, the other respondents explained that they could not chose to continue with English because of their plan to specialize in science, and therefore needed a certain number of scientific courses to be accepted to the higher education programs they wanted to attend. Bob also explained that in addition to the reasons listed above, he was discouraged from choosing English by a school counselor in upper secondary school who argued that what you learn in English the second and third year would not be useful for him. It is therefore clear that there is some truth to the expectation that the majority of students specializing in science and mathematics do not continue with English after the first year of upper secondary school. In addition, the qualitative interviews explained that this was because they could not fit English into their schedule because they needed to prioritize other courses, especially science and mathematics.

All the respondents in the qualitative interviews agreed that English should be obligatory all three years of upper secondary school because of the large amount of English course material at higher education. Those who only attended the first-year English course expressed that they believe that having English all three years would have made them more proficient readers of English and therefore better prepared for higher education. In addition they felt that having two or three years with no English instruction degraded their English proficiency, which made starting higher education more difficult. In addition, literature and reading account for much of the curriculum in the elective English courses the second and third years, and therefore it should be expected that this experience would have made the students who attended these courses more proficient readers. Nevertheless, the quantitative

results show that choosing English the second and third year does not make much difference with regard to reading proficiency in higher education.

As an extension to the previous section, the respondents in the qualitative interviews were asked what they would have benefited from learning in English in upper secondary school today when studying at higher education. The consensus among the respondents was that being introduced to the English vocabulary and terminology used in the fields they were studying at the moment would have made a big difference for their transition from lower to higher education. Some of those studying science and mathematics suggested that integrating English with scientific and mathematic courses, or including some relevant articles or texts in English would have been very helpful in introducing the vocabulary of that subject. They explained that there is a large difference in the level of the texts they encountered in upper secondary school, compared to the academic texts they read now, and knowing more scientific English would have made them better prepared and motivated to maintain their English proficiency.

6.3 Study experience

This thesis was focused on questioning beginner students and eliciting their experience with reading English course material. The results show that 75% of the respondents in the quantitative study were beginner students who did not have any prior higher education. It can be expected that more experienced students will have improved their reading proficiency when they have become more adapt to reading academic texts in English, and have increased their vocabulary. Therefore it was surprising that the results from the quantitative data show that there is no significant difference in mean reading score (EngIndex) for those with no prior higher education, $M=4.8$, and those with prior higher education, $M=4.7$ (Table 4.8, p. 53). This can be an indication that even though the students have increased their vocabulary, they are not able to read efficiently and are not confident in their reading of English. The data collected and analyzed in the present study does not indicate that reading proficiency improves with study experience, which was also the result in Hellekjær (2005).

All the respondents in the qualitative interviews were students with no prior higher education. The respondents interviewed explained that they feel that reading course material has slightly improved since they started, and that their vocabulary has increased some. However, what seems to be the biggest issue for the respondents is figuring out how to read and what to do when reading to do so in an efficient way. None of the respondents were

offered courses or seminars in strategy use or reading strategies when they started studying and explain that this is something they wish was available for new students. As the quantitative results indicate, the qualitative sample agree that with study experience they will learn the vocabulary and get more used to reading academic texts, but they struggled with figuring out how to read efficiently, which in turn have an affect on their comprehension of the information they read.

6.4 Unfamiliar vocabulary

When looking at reading, the results of the quantitative study determined that the lower level processes, including unfamiliar words and how to handle these, is what that the respondents struggle with when reading English course material. This was somewhat expected and therefore the quantitative study also asked how the respondents handle unfamiliar words and what they do when encountering unfamiliar words.

Table 4.9 (p. 54) shows how the respondents answered on the items asking how they handle unfamiliar vocabulary when reading. Looking the word up in a dictionary was the preferred way of handling unfamiliar words for the respondents. However, looking a word up in a dictionary seriously disrupts the reading process and therefore interrupts the fluency of reading. The majority of the respondents in the quantitative survey also answered that they guess the meaning of the word from the context of the text or their background knowledge often to frequently. Unlike consulting a dictionary, guessing the meaning of a word does not disrupt the reading process. Therefore, having high scores on both looking up words in a dictionary and guessing the meaning of the word, may be seen as contradictory because they suggest different strategies and different levels of proficiency.

The least used way of handling unfamiliar vocabulary is asking others for the meaning of the word. But, the respondents would rather ask their fellow students for help than their teachers or lectures. In the qualitative interviews Peter explained that he often does not know whom to turn to when facing a problem because the lectures are so big and it can be awkward to ask the lecturer for help during lectures.

It was expected that the majority of the respondents do not give up reading due to unknown words. However, 9.8% of the respondents say that the give up reading sometimes to frequently when encountering unfamiliar words. The mean *EngIndex* score for these respondents was calculated ($M=3.6$) and showed that these respondents scored well below the average, and were clearly struggling with the reading of English course material.

The quantitative survey did not ask the respondents *when* they looked up unfamiliar words; whether they stopped in the middle of a sentence or finished the sentence or paragraph before they looked up the word? Four of the respondents in the qualitative study, however, finished reading the sentence in question before looking up the word, and did this in order to try to guess the word from the context before using time to look up the word. Bob explained that he has to read the sentence again after looking up a word in a dictionary because he disrupts the reading process and therefore struggles with remembering the information he has read. In addition, Bob also notes that it is difficult to remember the information regardless because the information is so densely presented. Nick, however, does not feel that stopping in the middle of a sentence to look up a word disrupts the reading process. It seems like the respondents feel that they have to look up the unknown words, but that they often does not bother to look it up and try to guess the meaning of the word from the context of the text. As the respondents in the interviews explained, they often try to guess the meaning of the word before looking up the word in a dictionary. This suggests that many students use the two methods almost interchangeably, which may explain the high frequency in both ways of handling unfamiliar vocabulary, and the conflicting results in the quantitative study that showed that the respondents consult the dictionary and guess the meaning of the word with the same frequency.

What the respondents' do after they looked up the word to remember it varied among the respondents who were interviewed. Bob writes them into Google Translate, and this results in a long list that he can keep for later. Jack writes the translation or definition in the margin of the book so that it is there if he has to reread the chapter. Matt does not write it down to look at later and explains that he simply does not know what to do with the information in order to remember it better.

6.5 Strategy use

In the quantitative study, five items that look at strategy use was included. But, these items are better designed to give information about how the respondents read and what they do when reading, instead of information about strategy use. As Table 4.11 (p. 57) shows, organizing strategies such as writing summaries are the least used by the respondents. This raised the questions whether it is simply too time consuming or whether the respondents are simply not used to writing summaries when reading when in lower education. In contrast, the clear majority of the respondents say that taking notes and underlining important words and

key points is what they do most commonly when reading English course material. However, the quantitative data does not give information about what the respondents do with these notes later to ensure that they remember the information.

One of the biggest issues for the respondents in the qualitative study is figuring out how to read in an efficient way, and what to do when reading to remember the information later. None of the respondents remember receiving much or any instruction in strategy use or reading strategies in upper secondary school, and they were not offered any courses in reading strategies when they started higher education. Indeed, not being offered any instruction in how to read in an efficient way was one of the things Jack thought was bad when he started studying.

In the qualitative study, Bob explained that he was very uncertain about his strategy use and did not know whether or not it was efficient. One of the strategies he has tried is underlining important words and key points with a yellow marker, but the problem doing that is identifying which information is important and which is not. The result is that he is not able to do this and therefore end up coloring the entire book yellow. Nick, Matt and Jack explain that this has been a problem for them as well, but they do not know what to do instead, so some of them have continued underlining words because they have the impression that it is the correct way to study and it is what “good students” do. Bob also explained that when he writes notes or underlines important points he never go back to look at them again, even though he feels that he should. In order to remember the information one read, one has to work with the information to ensure that it is stored in the long-term memory. Taking notes and underlining important words and key points was the strategy that the majority of the respondents in the quantitative study preferred, but as the interviews indicate the respondents do this because they believe it is the correct way of studying. Further, the respondents struggle with identifying the most important information and therefore taking notes and underlining is not effective. Moreover, the qualitative sample suggest that they do not know what to do with these later, and therefore some of them do not bother to look at them again.

6.6 Is English in upper secondary school effectively preparatory for reading in higher education?

The results of the quantitative study shows that nearly 30 percent of the respondents are at risk of falling below the linguistic threshold level. This means that they are not proficient

enough in English to transfer skills and strategies from Norwegian. In addition, the results show that completing upper secondary school with three years of English, compared to only completing the compulsory, first-year English course, does not make students more proficient readers of English course material in higher education.

A central topic in the qualitative interviews was whether or not the respondents found that the compulsory, first-year English course adequately prepared them for reading English course material in higher education. The qualitative sample agreed that the first-year English course alone is not enough to ensure that students are prepared for reading large amounts of English course material in higher education. In addition, they explained that the level of the texts they reading in upper secondary school is too simple, and does not introduce them to the academic language of textbooks and articles in higher education. Moreover, they agreed that they wished they had had more English instruction, and that an English course that introduced them to the terminology and vocabulary of science and mathematic would have been very helpful when this is what they struggle with today.

In the next section, *Discussion*, I will start by summing up my findings in relation to the research statements presented in Ch. 1, *Introduction*, before discussing the results in light of relevant theories on reading.

7 Discussion

I start this chapter with a brief summary of the findings of the present thesis, and then I discuss these findings with regard to the research statements presented in Ch. 1 *Introduction*. Next, the results will be discussed in light of relevant reading theory that was presented in Ch. 2 *Theory*. Moreover, the results will be discussed in comparison to other studies investigating academic English reading proficiency, in particular Hellekjær (2005), and to English instruction in upper secondary school in Norway. Next, some final remarks on the validity of the results of the study will be mentioned.

7.1 What did I find?

In previous sections of this thesis, the method and results of the study has been presented. In the following section I will discuss these findings in relation to the research statements presented in Ch. 1, *Introduction*. The present thesis aims at investigating students' academic English reading proficiency and includes three research statements about different aspects of this. The research aims are as follows:

1. to investigate beginner university students' academic reading proficiency and their experience in reading English course material in higher education in Norway, paying special attention to students studying natural science and mathematics.
2. to examine whether or not the respondents found the compulsory first-year English course in upper secondary school adequate preparation for reading in higher education.
3. to see whether there has been an improvement in students English reading proficiency compared to the results found in Hellekjær (2005), and whether the strengthened focus on teaching reading as part of the Knowledge Promotion reform from 2006 has had an impact on students English reading proficiency.

In the following section I will give a summary of the results of this study in relation to the three research statements from the present thesis that were presented above.

7.1.1 Students' English reading proficiency and experience in reading English course material

As mentioned, the first goal of the present study was to investigate students' English reading proficiency and their experience reading English course material in higher education.

Looking at the results of the quantitative study, I found that respondents read English course material more slowly and with greater difficulty than in Norwegian. Unfamiliar vocabulary and difficulties with understanding sentences were the main sources of the difference between Norwegian and English. Moreover, the qualitative interviews revealed that struggling with unfamiliar vocabulary and not understanding the text clearly can be frustrating, and that the respondents read more slowly due to these difficulties. In addition, some of the respondents in the qualitative interviews explained that they based on their experiences from upper secondary school and reading English literature considered themselves good readers of English. Nevertheless, they had come to realize that fictional language and academic language were not the same, and that trying to maintain ones reading proficiency by reading English literature may have helped slightly, but has not prepared them for the reading of academic English texts found in course material in higher education.

It was expected that unfamiliar vocabulary would be something that the respondents struggled with when reading English course material, and therefore several items that asked the respondents how they handle these were included in the questionnaire. What was surprising was the high number of respondents answering that they frequently consulted a dictionary and guessed meaning of when facing unfamiliar words. These suggest different levels of proficiency, since consulting a dictionary disrupts the reading process, whereas guessing the meaning of the word does not and suggests that the reader is proficient enough to make these guesses and assumptions. These conflicting results were in part explained in the interviews when the respondents explained that they often try to guess the meaning of the word before consulting a dictionary, and therefore use the two methods almost interchangeably.

Moreover, the interviewees explained that, in addition to unfamiliar vocabulary, what they struggled most with when reading is figuring out how to read in the most efficient way. First of all, they do not have sufficient knowledge about different reading strategies, and struggle with trying something different if one option has failed. Second, some of the respondents do not know what to do with notes, underlining's of key points, summaries, etc. when they are done reading to remember the information later, which results in some of the

respondents not doing anything. The quantitative data also showed that a majority of the respondents underline important words and key points, but the survey did not ask the respondents what they did with these later on. In addition, some of the respondents in the qualitative interviews explained that they could not remember receiving much instruction in reading strategy use in upper secondary school and wish that they had been offered some instruction or course in reading strategies when they started higher education. Some were offered courses in writing or to refresh their scientific subject knowledge, but not in reading course material. The interviewees also explained that they believe that they have been able to acquire much of the new, scientific vocabulary when they have studied a couple semesters. However, the quantitative results for the present study indicates that English reading proficiency does not improve with study experience. This may suggest that while many students are able to read, and even though they eventually acquire new vocabulary, they are not necessarily able to read efficiently according to the purpose of their reading, or to use learning strategies effectively.

Furthermore, the present thesis found that 27% of the respondents in the quantitative study are at risk of falling below the linguistic threshold level when they had high scores in Norwegian (5 or better) and low scores in English (4 or worse). Falling below the linguistic threshold level means that these respondents seriously struggle with or are not able to transfer skills and strategies from the L1 to the L2 because they are not proficient enough in the L2. One of the respondents (Bob) in the qualitative sample has reading scores that show that he is on the borderline of falling below the linguistic threshold level. This suspicion was strengthened when he explained that one of the most frustrating things about reading English course material is that he is not able to skim through a text like he does in Norwegian, and that his understanding of text is much poorer when skimming in English. Therefore, his main option is reading carefully for details and spending time on looking up words and rereading sections to make sure he has understood it all. In comparison, Hellekjær (2005) found in his study, that 41% of the respondents were at risk of falling below the linguistic threshold level.

Nevertheless, one has to ask whether or no this improvement is good enough, when more than a quarter of the respondents in the present study are at risk of falling below the linguistic threshold level and therefore not proficient enough in English to read in an efficient manner.

7.1.2 English instruction in upper secondary school

Next, the present study was to investigate whether the compulsory, first-year English course in upper secondary school is adequate preparation for reading in higher education. First, the quantitative data revealed only a very limited improvement in English reading proficiency between the respondents who only completed the first-year English course compared to those who had completed upper secondary school with all three years of English. Indeed, the scores only improved by .2 points, showing that the respondents do not become much more proficient readers of English with two additional years of formal English instruction five-hours-per-week. Hellekjær (2005) got similar results in his study, although he found a slightly greater improvement when the gap between the scores was .4. The low improvement in scores between the respondents indicate that it is not the amount of teaching hours that explain the lack of reading proficiency, but the content and quality of the English instruction. This is alarming, and paints a highly unflattering picture of EFL teaching in upper secondary school. Indeed, it should be expected that students become more proficient readers with more formal English instruction and when the curriculum for the English courses available the second and third year includes more reading and literature compared to the first-year English course. As mentioned above, even though there has been an overall improvement in students' English reading proficiency there is a need for more English instruction when 27% of the respondents are at risk of falling below the linguistic threshold level and are not proficient enough in English. Moreover, EFL teaching in upper secondary school apparently needs to be changed to ensure a good dividend and better prepare students for the reading of English course material in higher education. This will be discussed in greater detail in the conclusion of this thesis when looking at the implications of this study.

Furthermore, the qualitative respondents' agreed in that they could not understand how the compulsory, first-year English course can be sufficient preparation for the reading of English course material in higher education. Having additional input of English in a formal setting, as opposed to the everyday English one encounters via the Internet and television, must be valuable with regard to increasing vocabulary, fluency and confidence in own abilities. Moreover, they explained that there is a huge difference in text difficulty between upper secondary school and higher education. They remember reading simple factual texts, short stories and perhaps one book in the first-year English course in upper secondary school, and explain that these cannot be compared to the level of the academic, scientific English course material they have to read so far in higher education. Some of the respondents

explained that being introduced to more academic language and the English vocabulary and terminology of science and mathematics would have made the transition from lower to higher education easier, and would also have been very helpful when reading English course material. For instance, Bob, had the needed scientific knowledge from upper secondary school for studying science in higher education, but because of his difficulties in reading the English course material he struggle with keeping up with the reading list and lectures, and understanding the information in the text. In other words, his poor English proficiency results in him having a poorer understanding of the subject he is studying.

7.1.3 Has there been an improvement in students' English reading proficiency?

The quantitative survey used in the present study was designed and used by Hellekjær (2005), and therefore the results of the two studies can therefore be compared to show whether or not there has been an improvement in students' English reading proficiency. In addition, the present study also asks whether the strengthened focus on teaching reading as part of the Knowledge Promotion Reform (LK06) has had an impact on students' English reading proficiency. The scores of the additive indices that indicate reading proficiency showed that the present study had a slightly improved mean *EngIndex* score compared to Hellekjær (2005), in practice a quite negligible improvement in students' English reading proficiency. Moreover, as mentioned, the present study found that 27% of the respondents are at risk of falling below the linguistic threshold level, which is an improvement since Hellekjær (2005) found that 41% were at this risk. However, the difference in sample size and composition must be kept in mind and may have an impact on the results. However, other test scores indicate that there has been an improvement in English reading proficiency among upper secondary level students reading scores from 2002 to 2011 (Hellekjær and Hopfenbeck, 2012). One can question whether this is a results of the new curriculum (LK06) that has strengthened the focus on reading and teaching reading strategies (Hellekjær, 2012, p. 154). LK06 has much clearer goals than previous curricula with regard to the development of reading proficiency in both Norwegian and English, and therefore it is reasonable to expect that students will be more proficient readers and have better use of reading strategies.

Moreover, whether or not the improvement seen in the present study is sufficient needs to be questioned. On the one hand it is good that the present study sees that fewer respondents are at risk of falling below the linguistic threshold level, and that they are more

proficient readers of English course material. On the other hand, seeing that 27% of the respondents are still at risk suggests there is still need for improvement in the teaching of reading in English. This should arguably not be the situation in Norway today, which is the one of the countries that spend the most money on education, both lower and higher education (OECD, 2010). As mentioned above, Hellekjær and Hopfenbeck (2012) also found an improvement in academic English reading proficiency among upper secondary school students from 2002 to 2011, but they are also uncertain as to why there has been an improvement. They found that there is a slight increase in the amount of literature respondents with the first year English course read, but it is not great enough to explain the improvement in reading proficiency (p. 117). Further, Hellekjær and Hopfenbeck (2012) explain that even though there is an improvement in English reading proficiency, the “need for good reading proficiency has increased, not decreased during this period.” (p. 119, my translation). It is positive that the present study found an improvement in students’ English reading proficiency, but the present study questions whether or not the improvement seen is good enough in Norway today. Moreover, it questions the effect of English instruction in upper secondary school and its efficiency in preparing students for reading English course material in higher education.

7.2 Discussion the findings in a theoretical perspective

In the following section I will discuss the results of the present study in light of relevant theories about reading, including the reading process, unfamiliar vocabulary and reading strategy use. Moreover, I will discuss the results in light of studies that look at English instruction in upper secondary school in Norway.

7.2.1 Reading difficulties

It has been shown that the main sources of the respondents’ difficulties when reading English course material are reading speed and unfamiliar vocabulary. These are lower-level processes that should be automatic and fluent for proficient readers allowing them to comprehend the information in the text in an efficient way. Word recognition is often considered one of the most important reading processes and rapid word recognition is one of the requirements for fluent reading that Bråten (2011) recognizes as the “bottleneck in developing good reading

comprehension” (p. 45, my translation). Seeing that the respondents struggle with unfamiliar vocabulary and reading speed supports the notion that these processes are important when reading to ensure fluency and comprehension. As the qualitative interviews showed, the respondents explained that what they struggle with is the subject specific vocabulary and terminology in English. The compulsory, first-year English course in upper secondary school is to give the skills and knowledge necessary for studying in higher education when it provides university and college admissions certification (LK06). Therefore it seems logical that academic and subject specific vocabulary should be included to some degree in EFL teaching to prepare students for reading of English course material in higher education and will arguably make the transition from lower to higher education easier to some extent.

Unfamiliar vocabulary in turn, influences the respondents reading speed and the overall understanding of the text. One of the respondents in the qualitative sample explained that because the information in the text is so densely presented and there are so many unfamiliar words, he reads more slowly and finds remembering the information in the text problematic regardless of whether he stops to consult a dictionary or not. In other words, when the word recognition process is automatic it is not longer a source of distraction, which in turn allows the reader to focus more on understanding the meaning of the text and storing this information in the long term memory (Bråten, 2011). However, items on how the respondents in the quantitative study handle unfamiliar words gave conflicting answers when the majority said that they consult a dictionary and guess the meaning of the word from subject and content knowledge. Consulting a dictionary confirm that the respondents’ word recognition process is not automatic, and therefore they have to disrupt the reading process to consult a dictionary. This, in addition to some respondents’ frequently even give up reading altogether, might, according to Hellekjær (2009) “reflect poor language proficiency or a tendency to dwell on the meanings of unfamiliar words.” (p. 211). This in turn strengthens the suspicion that Norwegian students tend to read texts carefully for detail, and that teaching reading strategies have not been a priority in the Norwegian school (Anmarkrud, 2009; Thuland and Heskestad, 2009, Roe, 2008). Respondents in the qualitative sample explained that they struggle with figuring out how to read in an efficient way, and for instance one respondent (Bob) explained that because he is not able to skim through English texts like he can in Norwegian. His option is reading the text careful for details when he does not know what else to do.

On the other hand, seeing that the respondents in the quantitative study also answered that they guess the meaning of the word from subject and content knowledge indicate that

they are proficient enough to make these guesses and assumptions, and therefore does not need to disrupt the reading process which results in a more fluent reading. Indeed, the qualitative interviews showed that the high frequency on both ways of handling unfamiliar vocabulary might be explained with the respondents trying to guess before consulting a dictionary, and therefore use the two methods interchangeably at times. Motivation also seems to be a factor in the respondents' choices of method when consulting a dictionary is more time consuming than guessing the meaning. On the other hand, it is reasonable to assume that the respondents' understanding of the text is poorer when they try to guess the meaning of the word because it is too time consuming or they are not motivated to consult a dictionary despite not understanding the word. The respondents in the qualitative sample explained that it is Ok for them if they do not fully understand the meaning of every word, as long as they understand the overall meaning of the text. However, as Bob explained, he might understand what the text is about, but he is not able to explain or give a definition of the word later, which can be problematic later when studying for and taking exams.

7.2.2 Strategy use

In reading research, what separate good or fluent readers from poor readers are often considered their lower-level processing skills and use of reading strategies (Bråten, 2011; Grabe, 2009). Having knowledge about as well as the ability to choose and use different strategies when reading a text is important, perhaps especially when studying in higher education when it is expected that students comprehend large amounts of information in a short time period. The quantitative findings showed that the respondents most frequently take notes and underline important words and key points, which are examples of what Bråten (2011) categorizes as memorizing and organizing strategies. Some of the respondents in the qualitative interviews explained that they do not have much training and knowledge about different reading strategies, but underline words or write notes because they believe that this is the correct way of studying and what "good students do". However, Matt explained that he never look at these notes or markings later when he does not know what to do with them, while some of the other respondents say that they go back and rewrite the notes later when studying for exams. That several of the respondents struggle with identifying the important information in a text is alarming when this is a skill needed for the majority of the six purposes of reading in an academic setting listed by Grabe (2009, p. 8). However, studies have shown that teaching reading strategies has not been a priority in the Norwegian school

(Anmarkrud, 2009; Thuland and Heskestad, 2009, Roe, 2008) and that this lack in knowledge of reading strategies from lower education persist in higher education (Fjedbraaten, 1999; Bråten and Olaussen, 1999).

As mentioned, the respondents in the qualitative study explained that they did not receive much instruction in reading strategies in upper secondary school, or when they started higher education, and as a result they feel unsure about whether or not their way of reading is efficient and struggle with changing their reading strategy according to the purpose of the reading. Knowing the purpose of the reading is important, perhaps especially in educational settings, when this influences the way you read the text and the skills you apply to the reading, which in turn has impact on the comprehension of the information in the text (Alderson, 2000; Grabe, 2009). Seeing that the respondents struggle with both identifying the purpose of the reading and what strategies to use in order to read in the most efficient way, it is quite probable that this has an impact on their comprehension and recall of the information in the text.

Moreover, since the present study investigates students in higher education, *reading to learn* is important when this requires that the reader is not only to understand and interpret the ideas presented in the text, but is also able to recall this information when needed. Reading to learn is, according to Grabe (2009), a strategy that is mostly carried out in educational and professional settings, and therefore it is alarming that the present study indicate that this is something the respondents struggle with and do not have much training in. Moreover, this is something that the Norwegian Directorate for Education and Training (2013) require of pupils in lower secondary school when they state that they “should be able to locate and retrieve information from text, they should be able to interpret and draw conclusions and they should be able to reflect on and assess the form and content of texts.” (p. 4). The present study indicate that students in higher education are not sufficiently able to do this and lack knowledge in reading strategies, and argues that even though reading strategies are more clearly included in the curricula there is, as Hellekjær (2009) points out, “too little emphasis on teaching Nordic students how to *read to learn*” (p. 202).

7.2.3 Difference in text difficulty

The respondents in the qualitative study noted that there is a significant difference in difficulty level between the texts read in the compulsory, first-year English course in upper secondary school and English course material in higher education. It is to be expected that

texts in higher education are written in an academic language, but the respondents asked why they had not been introduced to texts written in a more academic language in English in upper secondary school. In addition, they reflected that being introduced to texts more similar to the English course material they face in higher education would help in making the transition from lower to higher education easier. Faye-Schjøll (2009) found that most of the teacher interviewed in her study “rely heavily on the textbooks and rarely supplement it with texts of their own choice” (p. 113) and that for the most part, the only longer text read in the first year English course is one novel that is not much worked with in class. The respondents in the qualitative study agreed that the textbook and texts read in the first-year English course consisted of simple factual texts and short stories that they did not find difficult and these did not challenge them much. My respondent Peter explained that his teacher brought an article written in a more academic language one time and many students found it challenging to read and understand it. However, as he reflects, only bringing one article of this sort is not enough to introduce students to texts similar to what they face in higher education. Krashen (2011) explains that academic language is complex in regard to both discourse and grammar, and argues that in order to successfully read academic literature one has to have both academic language proficiency and knowledge of academic content, and in addition the ability to connect the two. As the respondents explain, they mostly read simple factual texts and were not introduced to much academic language. So despite their content knowledge, they were not introduced to academic language enough to learn how to comprehend the information in an efficient way.

The respondents also believe that reading more academic text that introduces them to vocabulary in English course material in higher education would be most valuable. Some of the respondents suggested either including English articles in science or mathematics courses in upper secondary school, or having an elective English course that focuses on science and mathematics. One example of integrating English with other subjects in upper secondary school is Content and Language Integrated Learning (CLIL). CLIL is a method where teachings in non-language subjects, for instance history or science, are taught in English. Hellekjær (2005) and Hellekjær and Hopfenbeck (2012) found that the CLIL-respondents were more proficient readers of English compared to those attending regular EFL teaching in upper secondary school. The CLIL-respondents were to a higher degree able to adjust their way of reading according to purpose and were more fluent readers (Hellekjær and Hopfenbeck, 2012, p. 103). Because these respondents are used to English texts in non-language subjects and have been introduced to the vocabulary in English, it can be assumed

that they will be more proficient readers of English course material in higher education. In previous curricula's there was such an elective advanced English course that combines science and English and it can be assumed that this introduced pupils to the vocabulary used in course material in natural science and mathematics in higher education and overall more academic language (for an overview of the history of the EFL syllabi and reading, see Hellekjær, 2005, pp. 24-49).

7.2.4 English instruction in upper secondary school

It has been questioned whether or not the compulsory, first-year English course in upper secondary school adequately prepares students for reading English course material in higher education. However, as Table 4.7 (p. 51) showed, the respondents reading proficiency did not improve significantly for those who completed upper secondary school with the elective advanced English course the second and third years, compared to those who only completed the first-year English course. The low difference in scores indicate that it is not the amount of teaching hours, but the content and quality of the teachings that explain the reading difficulties found. The present study and Hellekjær (2005) shows that the respondents are not proficient enough readers of English and therefore struggle with reading English course material in higher education. Moreover, both studies show that English reading proficiency improves slightly by following the second and third year English course in upper secondary school. Since the lack of improvement in reading proficiency cannot be explained by the amount of teaching hours, but the content and quality of EFL teaching it is clear that in addition to more English, the EFL teaching has to be changed to provide better dividend. As mentioned, the results from the present study and Hellekjær (2005) paints an unflattering picture of English instruction in teaching pupils how to read in an efficient way and in being preparatory for reading in higher education.

Similar to Hellekjær (2005), the present study found that students in higher education struggle with fluency and unfamiliar words when reading, and figuring out how to read in an efficient way, which support the findings of Faye-Schjøll (2009) who found that there are serious shortcomings in EFL reading instruction and that there is a lack of focus on teaching reading and different ways of reading, such as skimming and scanning. In addition to unfamiliar vocabulary, the respondents in the qualitative study explained that they received little or no instruction in different reading strategies in upper secondary school, or when they started higher education. Moreover, not knowing how to read in an efficient way and having

to test different strategies to find out whether or not they word is a source of frustration for the respondents. Bob also explained that skimming in English gives a much poorer understanding of the text, compared to skimming in Norwegian and therefore he read the texts careful for detail when this is the only option for him.

None of the respondents in the qualitative study feel that the compulsory first year English course gave them the skills and knowledge needed for reading English course material in higher education. Moreover, the scores from the quantitative study showed that 27% of the respondents are at risk of falling below the linguistic threshold level, meaning that they are not proficient enough in English to transfer skills and strategies from the L1, and it can be assumed that they therefore struggle with reading English course material efficiently. Based on the results from both the quantitative and qualitative study it is reasonable to question whether EFL instruction develops the necessary academic reading proficiency for reading in higher education in Norway. Even though the present study found that there has been an improvement in students academic English reading proficiency, it questions whether or not this improvement is good enough when English instruction is compulsory a total of 11 years of lower education in Norway, media and the Internet provide extensive exposure to the English language on an everyday basis, and the importance of reading and English reading proficiency has received more focus and is considered highly important in today's society.

7.2.5 Subject choice in upper secondary school

The present thesis has expected that students specializing in science and mathematics in upper secondary school do not choose the elective advanced English courses the second and/or third year. The reason for this expectation is that many studies in natural science, mathematics and medicine in higher education require a certain number of courses in science and mathematics from upper secondary school for admission. The results of the quantitative study also showed that the majority of the respondents in the lectures from the Faculty of Natural Science and Mathematics only completed the compulsory, first-year English course, in comparison the majority of the respondents in the lecture from the Faculty of Social Science completed upper secondary school with English all three years. Skarpaas (2009) found that many pupils choose not to or could not continue studying English in upper secondary school the second and third year because they prioritize other subjects, most commonly courses in science and mathematics, which confirm the expectation of the present study. Seeing that among the respondents in the quantitative study studying natural science

and mathematics the clear majority chose not to continue with English the second and third year of upper secondary school, it arguably can be assumed that they, as Skarpaas (2009) found, prioritize other subjects.

The students studying science and mathematics in the qualitative interviews confirmed this and explained that because of their plans to study science or mathematics in higher education they needed a certain number of courses in those subjects, and therefore did not have room in their schedule to choose the elective English courses the second or third year. Nick was the only exception to this since he was able to choose English the second and third year because he did not need as many courses in science and mathematics to get accepted into higher education. The qualitative data support the expectation that the students studying natural science and mathematics prioritize other subjects instead of continuing studying English, which is also what Skarpaas (2009) found in her master thesis.

Bob explained that in addition to the reasons mentioned above, he was discouraged from choosing English the second and third years by a guidance counselor who told him that the English he would learn there would not be of use to him later when working in science. Having regular input of English in a formal setting, as opposed to the everyday English one encounter via the Internet and television, must be valuable in regard to increasing vocabulary, fluency and confidence in your own abilities. The guidance counselor did not take these factors into consideration, and did not inform Bob about English course material in higher education or the impact of regular input. On the other hand, as this study has shown, completing English the second and third year does not necessarily improve students' academic English reading proficiency significantly. Skarpaas (2009) explains that there is a tendency among schools to regard the advanced English courses as less relevant for students in the Natural Science and Mathematics program in upper secondary school, compared to those in the Language, Social Sciences and Economics program (p. 105), which also seem to be the opinion of the guidance counselor Bob talked to. Nevertheless, Bob's scores from the quantitative study placed him on the borderline of falling below the linguistic threshold level which indicate that he is not proficient enough in English to read in an efficient way, and having two more years of English may very well have improved his basic English proficiency and made him a more proficient reader of English.

7.3 Validity – some final remarks

So far in this chapter I have given a brief summary of the findings of the present study in relation to the research statements, and discussed these results in light of relevant theory presented in earlier sections of the thesis. Before moving on to the conclusion, the validity of the results needs to be addressed once more with some final remarks.

First, this study uses a mixed-method research design with a quantitative-qualitative approach that arguably strengthens the validity when the qualitative data elaborates on and supports the findings of the quantitative study. As mentioned, the use of mixed-methods gives room for more comprehensive and extensive interpretations of the findings, which strengthened the validity of the study. The qualitative study was included to more descriptive information about how students experience reading English course material in higher education. As the results have shown, the qualitative data have given answers to questions raised after the analysis of the quantitative results, for instance with regard to how the respondents handle unfamiliar vocabulary, strategy use, English instruction in upper secondary school and subject choices in upper secondary school. As mentioned in Ch. 3, *Method*, a mixed method research design “is a stronger design than one that uses a single method because the supplemental component enhances validity of the project per se by enriching or expanding our understanding” (Morse and Niehaus, 2009, p. 14). As also shown, the results of the qualitative study have given supplementary and valuable information to the results of the quantitative study that could not be attained through statistical analysis, and therefore strengthens the validity of the present thesis.

In section 3.7 in the Method chapter I discussed the validity of this study, both the construct validity and external validity. With regard to construct validity the self-assessment items in the questionnaire were discussed questioned as to whether or not self-assessment items can be used to test reading proficiency since the items were validated with a reading test by Hellekjær (2005) I argue that they are reasonably for the valid testing of academic English reading proficiency. Moreover, the present study got similar results as Hellekjær (2005), which also indicates that the questionnaire and self-assessment items are still valid and useful more than 10 years after Hellekjær conducted his study.

With regard to external validity, the present study contains a small and limited sample from one university in Norway. Therefore, it is difficult to make generalizations about the Norwegian student population and assumptions about students academic reading proficiency in general. Nevertheless, the sample and results reflect those of Hellekjær (2005), whose

study contained a larger sample that is arguably more representative of the Norwegian students population. Because the present study uses the same, but shortened questionnaire the results have been comparable to Hellekjær (2005) and arguably give good indications of how students experience reading English course material in higher education. Moreover, the sample in the present study consist of a majority of students studying natural science and mathematics when 75% of the quantitative sample and 4 out of 5 of the qualitative sample were students from the Faculty of Natural Science and Mathematics. Therefore, the present study give at the minimum a useful picture of students studying natural science and mathematics and of their academic English reading proficiency.

8 Conclusion

In this chapter that concludes this present thesis, I will first give a presentation and discuss what I believe to be the most important implications of the results of this thesis. Last, I will suggest possible further research on academic English reading proficiency among Norwegian students.

8.1 Implications

Even though the results presented in previous sections of this thesis shows that there has been an improvement in students' academic English reading proficiency, the findings should cause some concerns with regard to EFL teaching in Norway. The main implication suggested from the results of the present study is that there is a need for more and improved English instruction that emphasizes on the teaching of reading and reading strategies. Although the Knowledge Promotion Reform that introduced a new curriculum in 2006 has strengthened the focus on reading and teaching of reading strategies, the improvement in students' academic reading proficiency is not sufficient. Compared to Hellekjær (2005), fewer respondents are at risk of falling below the linguistic threshold level, which suggest that they are more proficient readers of English. Nevertheless, the need for students to be proficient readers of English has increased and there is a need for more and better English instruction that focuses on reading and reading strategies, and better prepares students for reading English course material in higher education.

Moreover, the results show that there is a very limited improvement in reading proficiency for the respondents who complete the Advanced English course the second and third year of upper secondary school, which indicate that it is not the number of teaching hours that explain the lack of English reading proficiency, but the content and quality of EFL teaching. Seeing that this was also the situation in 2002 when Hellekjær (2005) conducted his study suggest that even though a new curriculum with a stronger focus on reading is in place, there is little change in the teaching of reading in English. There is a need for more reading in EFL teaching in Norway today and clearer demands for teachers to include practice in teaching reading and reading strategies are much needed. Even though the present study indicates that there has been an improvement in students' English reading proficiency, there is a compelling need to look at the content and quality of the teaching of the elective English

courses available the second and third year of upper secondary school. The present study also found that students lack knowledge about and are not able to use reading strategies when reading in higher education and that the respondents did not learn about different reading strategies in upper secondary school. Therefore, many struggle with reading English course material in an efficient way and comprehending the information they read.

In addition, the results of the present study show that there is a need for students to be introduced to more academic language in English in upper secondary school. Teachers often rely heavily on textbook that mostly include simple factual texts and short stories, which do not introduce students to the academic language they face when reading English course material in higher education. Since the Educational Program for Specialization in General Studies give students admission to higher education its goal is to provide the necessary skills and knowledge to study in higher education. In English this includes being able to read large amounts of English course material, since this is the reality in higher education institutions in Norway today. The results of this thesis indicate that the compulsory, first-year English course does not adequately prepare all too many students for the reading of English course material in higher education. This is alarming and supports the implication that there is a need for more and improved English instruction that focuses more on teaching reading and reading strategies. To achieve this the educational authorities must place an even stronger focus on reading in the curriculum. Moreover, teachers must be made aware of the need for efficient reading instruction, the importance of reading strategies and the introduction of academic language in upper secondary school.

This thesis was also interested in students studying natural science and mathematics when it was expected that they do not choose the elective advanced English course the second and third year of upper secondary school. These students in particular will face large amounts of English course material written in a scientific academic language, which mean that they need to be proficient readers of English. As the results show, the majority of these respondents only follow the first-year English course, and because these students really need to be proficient readers of English, I believe that efforts should be made to strengthen the recruitment of these students to the elective advanced English courses. Moreover, they chose to prioritize course in science and mathematics because of admissions requirement in higher education and do not have room in their schedule for English. When the elective advanced English courses are five-hour-per-week it makes it harder for those who wish to continue with English to do so, compared to when there were elective courses with three hours per week. Therefore, going back to including smaller English courses might make it easier to fit

English into their schedule and as a result, students get more continued English instruction that maintain their English proficiency.

8.2 Further research

With regard to further research, most importantly there is a need for a larger study to get a better picture of Norwegian students' academic English reading proficiency with a larger, more representative sample from more than one university in Norway. The present study uses a mixed-method research design, but comprises a small and limited sample. Therefore, a larger and more representative sample from multiple universities and colleges in both the quantitative and qualitative study would arguable provide more valid results and give stronger indications to whether or not there has been an improvement in students' English reading proficiency since Hellekjær (2005). Moreover, a larger sample would give more accurate information about English instruction in upper secondary school and whether or not the first-year English course adequately prepare students for reading of English course material in higher education.

I also believe that studies focusing on students studying the natural science and mathematics should be carried out to investigate their reading of English course material and their need for good English reading proficiency. Seeing that the authorities in Norway have stressed the importance of these areas of study and that there is a strong focus on recruitment into these areas of study, it would be interesting to conduct a larger study focusing on these students. First of all, too see whether or not more pupils choose to prioritize courses in science and mathematics in upper secondary school as a result of this recruitment and whether or not English course material continues as a source of difficulty for these students. When the authorities want to focus on educating students in the natural sciences and mathematics, it is reasonable to believe that should they take into consideration that these students need to be proficient readers of English when this is the area with the least amount of research being published in Norway and much of the course material is in English, and it would be interesting to see what is being done to ensure this.

I also suggest that more studies that investigate how reading is being taught in upper secondary school today, and the whether or not the Knowledge Promotion Reform (LK06) has actually strengthened the focus on reading and the teaching of reading strategies. The results of the present study and other studies (Hellekjær, 2012; Hellekjær and Hopfenbeck, 2012) show that even though there is an increase in students' English reading proficiency,

this is still not good enough, and that the teaching of reading and reading strategies has not changed significantly with the new curriculum. Moreover, the present study found that students do not become more proficient readers by choosing to follow the elective advanced English courses the second and third year of upper secondary school and the lack of reading proficiency is explained by the content and quality of the teaching, and not the amount of teaching hours. This is alarming and paints an unflattering picture of EFL teaching in Norway, and more extensive studies are needed to investigate this in more detail so that something can be done to improve the situation, which is arguably not good enough today.

8.3 In conclusion

In this conclusion of my thesis that has investigated university students English reading proficiency, I have suggested, based on the results, that the main implication of the study is that there is a need for more and better English instruction that focuses on the teaching of reading and reading strategies. The importance of being a proficient reader of English in today's society has only increased and as upper secondary school give pupils' admissions certification for higher education, proper instruction in reading of English is essential. However, after conducting this study I am left with the impression that the compulsory, first-year English course alone does not adequately prepare students for reading of English course material, since they still struggle with how to handle unfamiliar vocabulary and lack knowledge in reading strategy use. Therefore, my impression that many beginner students struggle with reading academic English course material has been strengthened, and that there is clearly a need for a change in English instruction in upper secondary school.

As a future teacher of English, I want to motivate my pupils and give them the tools and skills necessary for when facing situations where they need to use English, which in today's society in Norway includes the reading of large amounts of English course material. I would like to end this thesis with a quote given to me by my supervisor when I was student teaching in an upper secondary school in Oslo. The quote is by William Ralph Inge (Dean of St. Pauls) and it has inspired me and sums up my view of what education should be.

“The aim of education is the knowledge, not of facts, but of values.”

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Appendices

Appendix A – The questionnaire

Spørreundersøkelse

No. _____

Kjære student.

Dette er en anonym spørreundersøkelse som er en del av min masteroppgave ved Institutt for lærerutdanning og skoleutvikling som undersøker hvordan nye studenter opplever møtet med og lesingen av engelsk faglitteratur. Min veileder på oppgaven er Glenn Ole Hellekjær ved ILS.

Til sist i undersøkelsen er et spørsmål om du samtykker til å kunne bli kontaktet til et intervju for å snakke mer om temaet. Jeg setter veldig pris på at du tar deg tid til å svare på denne undersøkelsen og evt. et kort intervju i ettertid.

Undersøkelsen tar mindre enn 10 minutter å fullføre.

Tusen takk for hjelpen!

Elise Sivertsen Arnsby

elisesar@student.uv.uio.no

Institutt for lærerutdanning og skoleutvikling

1. Hvilke fakultet studerer du ved?
2. Hvilke fag tar du dette semesteret?

Noen spørsmål om din bakgrunn

3. Mann Kvinne
4. Hvilket språk er ditt førstespråk (morsmål)?
 Norsk Engelsk Annet
5. Har du tatt utdanning på universitet eller høyskole før du begynte på studiet du går nå?
 Ja Nei
6. Hvis ja på 5, hvilke:

Noen spørsmål om din bakgrunn i engelsk

7. Kryss av for det høyeste nivået med engelskundervisning du fullførte på videregående skole.
 Vg1 Vg2 Vg3
8. Hvilke karakter fikk du i engelsk på videregående skole på Vg1?
 1 2 3 4 5 6
9. Hvor interessert var du i engelskfaget på videregående skole?
Ikke interessert 1 2 3 4 5 6 7 Veldig interessert
10. Har du bodd i et engelsktalende land?
 Nei Ja, mindre enn 12 måneder Ja, 12 måneder eller mer
11. Har du gått på skole utenfor Norge?
 Nei Ja, i et engelsktalende land Ja, i et ikke-engelsktalende land

Noen spørsmål om studiene dine

12. Hvor mye av pensumlitteraturen på studie ditt er på norsk?
 Ingen ting veldig lite (<10%) litt (10-39%)
 halvparten (40-59%) mesteparten (60-99%) alt (100%)
13. Hvor mye av pensumlitteraturen på studie ditt er på engelsk?
 Ingen ting veldig lite (<10%) litt (10-39%)
 halvparten (40-59%) mesteparten (60-99%) alt (100%)

Noen spørsmål om din lesing av norsk pensumlitteratur

(Selv om du ikke har noe norsk litteratur på pensumlisten dette semesteret, vennligst svar på spørsmålene på bakgrunn av tidligere erfaringer)
Sett **ETT** kryss for hvert spørsmål.

14. Hvor fort leser du norsk pensumlitteratur?

Veldig sakte
 1 2 3 4 5 6 7

Raskt og enkelt

15. På en skala fra 1-7, i hvor stor grad har du vansker med ukjente ord?

Alle ord er ukjente
 1 2 3 4 5 6 7

Alle ord er kjente

16. På en skala fra 1-7, i hvor stor grad finner du setningene i de norske tekstene vanskelige å forstå.

Alle setninger er vanskelig
 1 2 3 4 5 6 7

Jeg forstår alle setningene

17. På en skala fra 1-7, i hvor stor grad finner du sammenhengen i de norske tekstene når du leser.

Ingen sammenheng
 1 2 3 4 5 6 7

Alle tekstene er sammenhengende

18. På en skala fra 1-7, i hvor stor grad finner du informasjonen i de norske tekstene så tett framstilt at den hemmer din forståelse av innholdet.

Umulig å forstå
 1 2 3 4 5 6 7

Jeg forstår alt

19. På en skala fra 1-7, i hvor stor grad finner du inneholder i de norske tekstene forståelig.

Umulig å forstå
 1 2 3 4 5 6 7

Jeg forstår alt

Noen spørsmål om din lesing av engelsk pensumlitteratur

20. Hvor fort leser du engelsk pensumlitteratur?

Veldig sakte
 1 2 3 4 5 6 7

Raskt og enkelt

21. På en skala fra 1-7, i hvor stor grad har du vansker med ukjente ord?

Alle ord er ukjente
 1 2 3 4 5 6 7

Alle ord er kjente

22. På en skala fra 1-7, i hvor stor grad finner du setningene i de engelske tekstene vanskelige å forstå.

Alle setninger er vanskelig
 1 2 3 4 5 6 7

Jeg forstår alle setningene

23. På en skala fra 1-7, i hvor stor grad finner du sammenhengen i de engelske tekstene når du leser.

Ingen sammenheng
 1 2 3 4 5 6 7

Alle tekstene er sammenhengende

24. På en skala fra 1-7, i hvor stor grad finner du informasjonen i de engelske tekstene så tett framstilt at den hemmer din forståelse av innholdet.

Umulig å forstå
 1 2 3 4 5 6 7

Jeg forstår alt

25. På en skala fra 1-7, i hvor stor grad finner du inneholder i de engelske tekstene forståelig.

Umulig å forstå
 1 2 3 4 5 6 7

Jeg forstår alt

Noen spørsmål om hvordan du leser

Kryss av på skalaen til hvilken grad du bruker lese strategiene i spørsmålene under når du lese engelsk pensumlitteratur. Kun ett svar per spørsmål.

26. Jeg leser rett igjennom teksten.

Lite brukt
 1 2 3 4 5 6 7

Mye brukt

27. Jeg leser igjennom teksten før jeg leser detaljert.

Lite brukt
 1 2 3 4 5 6 7

Mye brukt

28. Jeg streker under eller noterer viktige ord og punkter.
Lite brukt Mye brukt
 1 2 3 4 5 6 7

29. Jeg skriver sammendrag av det jeg har lest.
Lite brukt Mye brukt
 1 2 3 4 5 6 7

30. Jeg tar regelmessige pauser når jeg leser og tenker igjennom det jeg har lest.
Lite brukt Mye brukt
 1 2 3 4 5 6 7

Noen spørsmål om hvordan du håndterer ukjente engelske ord.

Hva gjør du som regel når du møter ukjente engelske ord når du leser? Kryss av på skalaen hvor ofte du bruker de forslåtte løsningene. Gi kun et svar per spørsmål.

31. Slår opp i en ordbok.
Aldri Veldig ofte
 1 2 3 4 5 6 7

32. Gjetter ordets mening ved å bruke min kunnskap om faget.
Aldri Veldig ofte
 1 2 3 4 5 6 7

33. Gjetter ordets mening ut i fra det jeg har lest.
Aldri Veldig ofte
 1 2 3 4 5 6 7

34. Spør en foreleser.
Aldri Veldig ofte
 1 2 3 4 5 6 7

35. Spør andre studenter.
Aldri Veldig ofte
 1 2 3 4 5 6 7

36. Fortsetter å lese.
Aldri Veldig ofte
 1 2 3 4 5 6 7

37. Gir opp lesingen.
Aldri Veldig ofte
 1 2 3 4 5 6 7

38. **Kommentarer:** Forklar med egne ord hvordan du leser engelsk pensumlitteratur og dine erfaringer med lesing på engelsk. Skriv gjerne på baksiden av arket.

Vil du la deg kontakte for et oppfølgings intervju? Ja Nei

Hvis ja: Navn: _____

Telefon nr: _____

E-post adresse: _____

Tusen takk for din tid og hjelp!

Appendix B – Interview guide

1. Background - brief
 - Upper secondary education
 - Lived or studied abroad
 - Prior higher education
 - Current study
2. English instruction at upper secondary school
 - Vg1 English course
 - Choosing not to follow English the 2nd and 3rd year
 - Reasons for this: interests, further education, other
 - Do you regret this now?
 - English in upper secondary school – texts, level, experience, content
 - Texts at upper secondary school vs. Higher education
3. Experiences with studying at higher education
 - Expectations before starting
 - Information before starting
 - Strategy courses offered?
4. Large amounts of English course material:
 - Were you prepared?
 - Information
 - Does it affect your study experience?
 - Challenges
5. Reading
 - Norwegian vs. English
 - Strategy use:
 - Have you been taught any strategies?
 - Do you use them?
 - Where did you learn them?
 - Learning outcome
 - Understanding the content of texts
 - Background knowledge
 - Unfamiliar vocabulary
 - Pressure/stress
6. Vg1 English = preparatory for higher education?