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Fluency and complexity in the written English of Norwegian 7th graders: A comparative study of pupils in the Early Years Literacy program (EYLP) with those in a textbook-based approach

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Abstract

The current thesis is based on a comparison of timed narrative English L2 texts written by two groups of Norwegian 7th grade pupils. One group participated in the experimental Early Years Literacy Program (EYLP), while the other group was taught English through a textbook approach. The textbook approach is the dominant one among Norwegian primary school teachers of English, while the EYLP is considered experimental due to its comparatively stronger focus on extensive reading. Several previous studies propose a favourable connection between extensive reading and foreign language development, e.g. in writing.

The texts were analysed quantitatively in terms of fluency, and grammatical and lexical complexity. Several of the fluency and grammatical complexity measures were based on the T-unit (a main clause and any subordinate clauses attached to or embedded in it) in some form. The fluency measures were the average number of words per text, the average number of T-units per text, and the average T-unit length (words per T-unit). The grammatical complexity measures were subordinate clause frequency, i.e. subordinate clauses per text, the subordinate clause per T-unit ratio, and noun phrase modification. Additionally, the subordinate clauses were subcategorised according to type. Finally, lexical complexity was calculated by counting the average number of lexical verbs, nouns and adjectives types per text.

The results showed that the experimental group scored higher than the control group across all the measures of fluency, and grammatical and lexical complexity. In the discussion, the comparatively higher scores of the experimental group's writing were mainly attributed to two factors of the EYLP: comparatively more reading than the textbook approach, and the reading material itself. The pupils in the textbook approach primarily read what the textbook offered. In contrast, the EYLP pupils read comparatively much more differentiated reading material, catering for a wide range of competence levels and interests.

The current thesis has contributed to the research on quantitative measures in language learner texts. It has also contributed to the research field by attempting to link reading input to writing output. To supplement previous research related to the written English development of young Norwegian learners in the EYLP approach, the current thesis has contrasted the writing of learners in this relatively experimental approach with those in an approach centring around the textbook, representing the conventional. As far as the author is aware, there is no

similar research where the written output of EYLP participants has been compared to the writing of pupils in a textbook approach.

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1.0 Introduction

1.1 The study and its aims

The aim of this thesis is to compare fluency and grammatical and lexical complexity in two corpora of Norwegian 7th grade English as a foreign language (EFL) texts. A corpus of timed narrative texts produced by 7th grade pupils (approximately aged 12) in the Early Years Literacy Program (EYLP) was compared to a similar corpus of texts written by pupils following a traditional textbook approach. Charboneau (2012:57) found that the majority of Norwegian primary schools use the textbook as the primary source for English reading instruction and that very few schools use the Early Years Literacy Program. The main research question is:

What are the similarities and differences in the two corpora in terms of fluency, and grammatical and lexical complexity?

1.2 EYLP background

The EYLP was developed to promote literacy among young first language learners (Drew, 2009:110). Its main focus is on differentiated reading, giving the pupils reading material suited for each reader's specific proficiency level. The pupils rotate between certain classroom learning 'stations' with different activities being offered, for example reading stations and literacy-promoting games, along with teacher-controlled guided reading of graded readers. Pupils are encouraged to read as much as possible, both in and outside the classroom. The assumption behind such a program is that reading extensively will have a positive outcome on the quality of writing compared to programs with more limited reading (Krashen 1984). The EYLP approach was adopted by a Norwegian school as a pilot project in Norwegian, and other schools then followed its example. It has since also been adapted in EFL teaching by some schools.

Compared to the extensive reading practices of the EYLP, the traditional textbook approach to EFL in Norway seems to conform more to intensive reading than extensive

reading through the texts provided in a textbook (Drew 2004:36, Hellekjær 2007:26). It therefore seemed interesting to compare pupils' writing in an EYLP school with pupils engaged in a more traditional program to see if there was any difference in the quality of their writing. The study is primarily quantitative, measuring features of fluency, and grammatical and lexical complexity. However, examples of the different measures will be shown.

1.3 Research context

According to Wolfe-Quintero et al. (1998:4), there are certain generalizations concerning fluency, accuracy and sophistication which can be made on the basis of written second language development studies. As learners become more proficient in second language writing, they are able to produce more within a given time frame, they make fewer mistakes in their writing, and their sentences become both grammatically and lexically more complex and sophisticated.

Concerning fluency, Wolfe-Quintero et al. (1998:14) connect it to rate and length, i.e. a writer at comparatively higher fluency level will access more language in the form of words and structures. In relation to fluency measures, Wolfe-Quintero et al. (1998:13) suggest that they 'reveal how comfortable the second language writer is with producing language'.

Complexity in writing incorporates both grammatical and lexical complexity. As suggested by Wolfe-Quintero et al. (1998:69), grammatical complexity can be divided into grammatical variation and sophistication. Cited in Wolfe-Quintero et al. (1998:69), Foster and Skehan (1996:303) explain high levels of grammatical complexity as more syntactically diverse patterns compared to a lower level of grammatical complexity. With regard to lexical complexity, Wolfe-Quintero et al. (1998:101) relate measures to lexicon, i.e. vocabulary. A writer of higher lexical complexity will often produce language which is lexically varied and sophisticated. Comparatively, a writer at a lower lexical complexity level tends to produce a text using more basic vocabulary. One way of measuring lexical complexity can be to count certain lexical items, such as different verb, adjective and noun types, which applies to the present study.

There have been several studies of pupils' writing at the primary and lower secondary levels in Norway, among them Drew (2003; 2010) and Vigrestad (2006). Drew (2003) conducted a study of 7th graders' fluency and complexity levels in writing, where he compared texts written by the same learners in both Norwegian and English. Vigrestad (2006)

conducted a study of Norwegian and Dutch texts written by pupils at the lower secondary level, specifically 7th and 9th grade texts, with a focus on fluency and complexity. Drew's (2010) longitudinal study of fluency and grammatical and lexical complexity in the writing of young learners in an EYLP school, as they progressed from the 4th to the 6th grade, is especially relevant to the present study.

1.4 Methodology

The basis for this thesis was two corpora of texts, consisting of 43 texts in each. The corpus from the EYLP school was made up of pupils from three different classes. The other corpus was made up of pupils from two different schools. The texts were narratives based on six pictures, and the pupils were given 45 minutes to write the texts at school.

To indicate fluency, the measures applied were average words per text, average number of T-units per text, and mean T-unit length. The grammatical complexity measures consisted of the average number of subordinate clauses per text, the subordinate clause per T-unit ratio, and the distribution of nominal, adverbial and relative clauses. Another measure was noun phrase modification, i.e. the average number of complex noun phrases per text. The lexical complexity measures were the average number of adjective, noun, and verb types per texts, i.e. lexical variation.

1.5 Relevance of the thesis

Young learners as a group have been the target of increasing research (e.g. Hasselgreen et al. 2012; Nikolov 2009). Nevertheless, comparative studies of writing with learners involved in different teaching approaches seem to be lacking from the research field of young language learner research.

Furthermore, the two most recent national curricula in Norway have emphasised writing at the primary level to a greater extent than previous curricula. With the most recent national curriculum (*LK06*), the ability to express oneself in writing has been defined as one of the basic skills in addition to being able to express oneself orally, being able to read, being able to calculate, and to be skilled in the use of digital tools.

Most Norwegian pupils do not experience such a strong focus on reading in their English language teaching (Hellekjær 2007). The writers represented in the EYLP programme thus belong to a minority group. It is therefore interesting to see what effect the EYLP programme has on the learners' writing compared to those following a traditional approach.

1.6 Organisation of the thesis

Chapter 2 presents background information on the status of English as a foreign language in Norway. Furthermore, it elaborates on the recent educational reforms and the English primary school curriculum. Chapter 3 provides the theoretical foundation of the thesis, and presents research relevant to the current thesis. It primarily refers to theories of reading and writing, particularly in a second language (L2) context. The chapter also includes relevant studies, both national and international. Next, Chapter 4 explains the methods which have been applied in order to analyse the fluency and complexity levels of the sample texts. Chapter 5 subsequently presents the results of the written analysis of the two corpora. Chapter 6 offers a discussion of the findings, with the aim of explaining the results and their implications. Finally, Chapter 7 concludes the thesis.

2.0 The background of EFL teaching in Norway

2.1 Introduction

The current chapter will provide background information on the position of English as a foreign language in Norway and present the most recent Norwegian educational reform. Since the two sets of texts which are analysed in this thesis are written by participants from two different literacy-promoting approaches, their characteristics will be described. However, the EYLP classroom practices will be presented in more detail compared to the textbook approach. Unfortunately, the specific details of the control groups' classroom practices are not available for the author. The textbook approach will therefore be presented in more general terms since through previous research of the said approach. The chapter consists of four main sections. Section 2.2 is about English as a foreign language in Norway. Section 2.3 is about EFL teacher education in Norway. Section 2.4 is about the EYLP in Norway, while section 2.5, finally, addresses the textbook approach to English teaching in Norway.

2.2 English as a foreign language in Norway

The importance of English as a foreign language (EFL) is echoed in Norwegian education policies, which aim to ensure that all Norwegian pupils have a basic set of English skills when they finish school. English is the only compulsory foreign language and it has its own curriculum, while the other foreign languages have a combined one. Furthermore, English is obligatory from year 1 to 10 and is one of three core subjects in the Norwegian school system, along with Norwegian and mathematics. These are core subjects because they are the only subjects in which pupils can sit a written exam at the end of the 10th grade.

The dominant position of the English language is also reflected in the way it has been emphasised in the two most recent Norwegian education reforms, *L97* (implemented in 1997) and *LK06* (implemented in 2006). Norwegian national curriculum guidelines are revised by the Ministry of Education and Research approximately every 10 years. Both of these reforms increased the focus on EFL reading and writing through new competence aims. Additionally, the assigned hours of primary school EFL teaching also increased with each reform. With the

reform of *L97*, the onset age for English language learning in Norwegian primary school was lowered from the 4th to the 1st grade, consequently changing the starting age from nine to six.

With the implementation of the most recent set of national curriculum guidelines, *Kunnskapsløftet (The Knowledge Promotion) (LK06)*, there were also changes to the assigned school hours for year 1-10 EFL instruction. Prior to *LK06*, the number of school hours was 328. With the implementation of *LK06*, the number of hours was increased to 366. As a result of this strengthened subject status, the allotted time increase was a total of 12 per cent (Abildgaard and Helland 2011:3). The main adjustment was made for years 1-4, with an allotted time increase of 93 per cent from *L97* to *LK06*.

Prior to the two most recent reforms, the main emphasis in EFL teaching had been on oral communication as opposed to reading and writing at the primary level (Drew 2009:109). With *LK06* came a reinforced focus on reading and writing through the introduction of *basic skills*. According to the official educational framework of *LK06*, there are five basic skills which pupils are expected to acquire during their primary education from grades 1-10. These skills are *reading, writing, oral skills, digital skills* and *numeracy* and are presented as ‘fundamental to learning in all subjects as well as a prerequisite for the pupil to show his/her competence and qualifications’ (*LK06*). In writing, the basic skills for English are described as thus¹:

Being able to express oneself in writing in English means being able to express ideas and opinions in an understandable and purposeful manner using written English. It means planning, formulating and working with texts that communicate and that are well structured and coherent. Writing is also a tool for language learning. The development of writing proficiency in English involves learning orthography and developing a more extensive repertoire of English words and linguistic structures. Furthermore, it involves developing versatile competence in writing different kinds of generalised, literary and technical texts in English using informal and formal language that is suited to the objective and recipient (*LK06* English subject curriculum).

There are specific primary school competence aims in English as a foreign language after years 2, 4, 7, and 10 (Mellegård and Pettersen 2012:209). The English competence aims after year seven, which are particularly relevant because they concern the pupils’ written sample texts in this thesis, state which skills the pupils aim to work towards. The competence aims cover both oral and written abilities. After a revision of the English curriculum in 2013, *written communication* became one of the main subject areas, together with Language

¹The Norwegian Directorate for Education and Training:
http://www.udir.no/kl06/eng1-03/Hele/Grunnleggende_ferdigheter/?lplang=eng Accessed 05.05.16.

learning, Oral communication and Culture, society and literature. After year seven, the competence aims in written communication are expressed in LK06 as follows:

- *use reading and writing strategies*
- *understand and use a vocabulary related to familiar topics*
- *understand the main content of texts one has chosen*
- *read and understand different types of texts of varying length from different sources*
- *take notes to create different types of texts*
- *write coherent texts that narrate, retell and describe experiences and express own opinions*
- *use basic patterns for orthography, word inflection, sentence and text construction to produce texts*
- *use digital tools and other aids to find relevant information and to create different types of texts*

Furthermore, the competence aims for year seven regarding the main subject area Culture, society and literature combine reading and writing skills with oral competence:

- *narrate about people, places and events in English-speaking countries*
- *read children's and youth literature in English and converse about persons and content*
- *express own reactions to English literary texts, films, internet culture, pictures and music*
- *express oneself creatively inspired by different types of English literature from various sources*
- *communicate short texts about topics one has chosen*

The competence aims for Culture, society and literature do not explicitly separate oral and written skills, and one may therefore assume that the verbs 'narrate', 'express' and 'communicate' can be used to describe both oral and written activity.

Regarding English as an upper secondary school subject, there is no academic discrimination between the two main upper secondary educational programs, i.e. general academic studies and vocational studies. *LK06* made English requirements academically equal for both of these studies. In upper secondary education, English is the only obligatory

foreign language for all pupils, with a final exam at the end of year 11 for general education studies and year 12 for vocational studies. The exam is identical for learners of both pupil groups and the total number of school hours assigned to the subject is the same.

2.3 Teacher education

As of today, there are no formal teacher qualifications required to teach English in compulsory education. The Norwegian general teacher education does not include English as a compulsory subject, but only offers it as an elective subject. According to Lagerström (2000), as cited in Drew (2009:110), seven out of ten English teachers who teach pupils in years 1-4 do not have formal education beyond their compulsory and upper secondary education. The same applies for every second English teacher in years 5-7. In addition to no obligatory English in the general teacher education, the number of teacher students choosing English as an optional subject has been on the decline (Drew 2009: 110).

However, there seem to be teacher requirement changes pending in Norway. According to the Ministry of Education of 2016², new formal teacher qualification demands will be implemented in 2017. The core subjects Norwegian, English and mathematics will require a minimum of 30 subject-related study points to teach grades 1-7. To be allowed to teach grades 8-10, 60 subject-related study points will be required. Without the additional subject-specific education, teachers will not be qualified to teach in the said core subjects regardless of previous teaching experience.

2.4 EYLP in Norway: Nylund School

The Early Years Literacy Program (EYLP) is a program being adapted and used by increasingly more primary schools in Norway, for both primary school teaching of Norwegian and English³. The basis for the EYLP in Norway is the Australian Early Literacy Research

² <https://www.regjeringen.no/en/topics/education/innsikt/larerloftet/id2008159/>

³ See the following school websites:
<https://skoyen.osloskolen.no/fagtilbud8/satsingsomrader/tiev-tidlig-innsats-early-years/> Accessed 09.05.2016
<https://ila.osloskolen.no/fagtilbud8/satsingsomrader/tiev/> Accessed 09.05.2016

Project (ELRP). ELRP was first initiated in Victoria in 1995 ‘to develop a system-wide approach to maximising the literacy achievements of ‘at risk’ students in the early years of schooling (ages 5-8)’ (Hill and Crevola 2002:1). The main goal was to reduce the academic differences between various pupils. Formally running from 1996 to 1998, beginning-of-the-school-year data was collected and then compared to data collected at the end of the school year. 27 trial schools and 25 reference schools participated in the project (Hill and Crevola 2002).

In 2003, Nylund Primary School in Stavanger was the first school to adapt and implement a revised ELRP strategy in Norwegian primary education⁴. Renamed EYLP, Nylund initially introduced the literacy-promoting approach in the teaching of Norwegian as a first language (L1). This shift in literacy teaching strategy garnered widespread attention both locally and nationwide due to comparatively improved literacy levels among the Nylund student body. In 2005, the EYLP approach was extended to foreign language teaching. It was decided that EYLP should include English as a foreign language (EFL) from year 3 to 7, in addition to the already implemented first language teaching.

According to Hill and Crevola (2006), as cited in Drew (2009:111), learning effectiveness of the EYLP is based on three principles, namely that the pupil achievement comes with high expectations, that the learning time is engaged and Vygotsky’s (1978) ‘zone of proximal development is taken advantage of. This means that what pupils can achieve with the help of a more knowledgeable person at their present stage, they will be able to achieve on their own at the next stage.

Additionally, The EYLP approach consists of several characteristics (Drew 2009:11-114). The most central features are the substantial amount of reading, specially educated teachers, pupil monitoring and assessment, and parental involvement.

EYLP classrooms in general share a particular organization. The teaching space is organized into several learning stations where the pupils rotate between different literacy-promoting activities. Combining autonomous work and one-on-one pupil-teacher interaction, the learning stations consist of both individual and group activities along with a teacher-led station. The pupils are divided into groups based on homogeneous language proficiency and ability. This principle is supported by having various learning station tasks suited to each group’s proficiency level. Extra tasks are available for the more adept language learners.

⁴ <http://www.minskole.no/nylund/Underside/742> Accessed 09.05.2016

At Nylund School, the classrooms are environmentally print-heavy, featuring environmental print in both Norwegian and English. Books are available both in the classroom library and in the school library. There are at least four computers in each classroom and the desks are arranged in groups in accordance with the different learning stations. At the beginning and end of each lesson, the pupils gather on the floor in a common area. The same area is used for the teacher-led learning station (Drew 2009).

The reading is centred on the Australian Wings series of books for graded reading. The Wings books are the same books read by the Australian EYLP pupils. Written in their first language, the Australian pupils are able to read the books at a younger age than their Norwegian counterparts. Offering a wide array of difficulty levels, 26 in total, the series allows pupils to read according to their proficiency level. Each level contains several books. To ensure that each group of pupils can read the same book, there are 4 copies of each book available. Rich in illustrations, the pages have comparatively little text. Pupils are meant to read most or all of the books at one difficulty level before moving on to the next level. Through the introduction of systematic high frequency words, the books intend to develop young language learners' vocabulary. An automatic word retrieval from memory enhances the pupils' fluency (Stanovich 1992:4, as cited in Drew 2009:11).

Typically lasting for one and a half hours, lessons usually start in the common area where all the pupils gather around the teacher for some singing or receiving teacher instructions. The initial part usually lasts for around 5 to 10 minutes. The teacher speaks primarily English, but the instructions can be repeated in Norwegian. The class is divided into groups consisting of three or four pupils, which then rotate between the pre-prepared learning stations: silent reading in a designated area, writing practice, vocabulary-building activities on the class computer, and speaking activities through role play, games and vocabulary practice. In addition, there is a teacher-led station where the pupils read aloud, usually from a Wings book. The teacher keeps a record of each pupil's reading and provides the pupils with new reading material to read at home. In a week, pupils read from one to three books with parental guidance. To increase reading fluency, the books are read several times. The final part of the teacher learning station is generally the teacher reading aloud from a book the pupils had not read before. Afterwards, there is a conversation about the content of the book.

The EYLP is considered experimental both in form and content, as most Norwegian English teachers follow a more conventional approach, namely the *textbook approach*. Since the aim for the current thesis is to compare the written output of the participants in each approach, it seems relevant to present the textbook approach in more detail.

2.5 The textbook approach

As previously acknowledged in the introduction of the current chapter, details of the textbook approach will have to rely on previous studies regarding English teaching methods in Norwegian primary schools, e.g. Charboneau (2012; 2013) and Drew (2004). However, there is no apparent reason why the general characteristics should not apply to the approach carried out in the control group classrooms.

Course textbooks often make up the primary foundation of English teaching practices in Norwegian primary school classrooms. According to Drew's (2004:20) survey of English teaching in Norwegian primary schools, the majority of primary school English teachers, seven out of ten specifically, reported to use a textbook either frequently or all the time. Supporting Drew's (2004) survey, Charboneau (2012:57) found that 61,8% of Norwegian primary school English teachers used the textbook as the basis for teaching materials in English.

Content-wise, some textbooks include multi-levelled reading materials to meet different competence levels among the pupils. The lower level texts are often songs and short dialogues. Comparatively, the higher-level texts more often comprise more varied text genres, e.g. fairy tales and other narratives (Charboneau 2012:63).

In his 2004 survey, Drew found that reading-related activities were not practised as frequently as oral language (Drew 2004:17). Furthermore, non-textbook texts were hardly ever used in reading, with seven out of ten pupils never or hardly ever reading books written for L2 readers. Other authentic texts, like magazines or newspapers, were also generally disregarded by four out of five teachers. Silent reading was never/hardly ever carried out among two out of three teachers. Moreover, reading aloud in class was reportedly done by three out of ten teachers once or twice a month. Finally, more than half of the teachers reported that they never or hardly ever read aloud to their pupils (Drew 2004:17).

Regarding the different textbook activities, the teachers in Drew's (2004) survey reported that post-reading comprehension questions were asked once or twice a week by almost to two out of three teachers. Other textbook-related activities, e.g. pupils reading aloud, were practised with roughly the same frequency and by a similar number of teachers. Additionally, more than half the teachers used the textbook in translation from English to Norwegian either 'every time/almost every time or once or twice a week' (Drew 2004:20).

To sum up, Drew (2004) and Charboneau (2012) found that the textbook approach was the most common approach among Norwegian primary school English teachers, who

relied on the textbook for both reading and reading-related activities. In general, it seemed that silent reading was rarely carried out and other reading material written for native readers was seemingly hardly ever used.

3.0. Theory and literature review

3.1 Introduction

The purpose of this thesis is to examine the similarities and differences in L2 writing of pupils in the experimental EYLP approach compared to those who followed the textbook approach. In order to recognise what EYLP represents in the context of language learning theory, different theories will be addressed to see how they have been realised in methodological practices.

One of the main characteristics of the EYLP approach is a special focus on reading. Literature regarding reading in connection with second language writing is therefore also included in this chapter. The method applied in this thesis is an examination of written texts by means of countable measures. The current chapter will therefore review these measures and studies in which they have been applied.

The current chapter is divided into five main sections. In order to compare how an L2 extensive reading approach such as EYLP can, in some aspects, simulate L1 learning, the L1 and L2 learning processes need to be presented. Therefore, section 3.2 addresses processes, approaches and methods in L1 and L2 learning. Since the two literacy-promoting approaches addressed in this thesis may represent two different reading practices, section 3.3 presents the distinction between extensive reading versus intensive reading. Next, the written output of the participants in each approach is the foundation of the study in the current thesis. Section 3.4 thus examines the connection between reading and writing. Since the sample texts are written in the pupils' second language, section 3.5 deals with second language development in writing. The texts are measured in terms of fluency and complexity, using particular methods which have previously been applied in similar research. Section 3.6 therefore presents previous studies about written fluency, while section 3.7 contains studies of complexity, and consists of two subcategories: grammatical and lexical complexity.

English is officially a foreign language in Norway. However, as previously presented in section 2.2, the language has a special position in Norway. It could be argued that its current status to some extent resembles that of a second language, as English is not included in the foreign language section of the national curriculum. Instead it has its own curriculum along with other basic subjects, such as maths and Norwegian. Due to this somewhat blurred distinction of the two terms *second* and *foreign* language, along with the terms' often

interchangeable use in research studies, second language and foreign language will generally not be distinguished in the thesis. Unless a distinction is necessary in the context of the theories presented, both second and foreign language will be referred to as L2. In references to *first* languages, the abbreviation L1 will be applied.

Furthermore, *acquisition* and *learning* are terms used interchangeably throughout the chapter, as they seem to be in most of the included language learning research. An exception is made when addressing Krashen's (1984) theoretical platform, since he argues for a separation of the two terms.

3.2 Approaches and methods in L1 and L2 learning

In order to describe the underlying objective behind L2 learning theories, a comparison of the characteristics of L1 and L2 learning processes may be useful. Theories regarding the said learning processes are thus included in the current section. To provide a historical background to the most recent learning approaches, the audio-lingual and communicative approaches are presented, along with the underlying theories by which they are influenced.

The terms *approaches* and *methods* can carry different meanings. Richards and Rodgers (1986:16) define *approaches* to be 'theories about the nature of language and language learning that serve as the source of practises and principles in language learning'. *Approach* would therefore be a theoretical model which promotes a specific way of learning languages. *Method*, on the other hand, is the actual implementation of an approach (Harmer 2001:78), i.e. the details of the classroom practices, such as the teacher's role and the materials used. The EYLP and the textbook approach can both be considered to adhere to the umbrella term *communicative approach*, but the corresponding methods are not identical (see Chapter 2).

3.2.1 Audio-lingual approach

According to Harmer (2001:79), the audio-lingual approach originates from the behaviourist theory. Referred to as a 'Stimulus – Response – Reinforcement' model (Harmer 2001:79), language learners in an audio-lingual approach are encouraged to learn languages through imitation and positive reinforcement from their surroundings.

Lightbown and Spada (2006:10) present the behaviourist theory as based on the view that language is learned through imitation of the people in the language learner's immediate surroundings. In L1 learning, a toddler will imitate the language spoken in its home environment. By receiving praise, or simply achieving successful communication, the child's linguistic reproduction is rewarded through positive feedback. This again will inspire more practice and imitation, as the reinforcement increases the likelihood of the language behaviour becoming a habit. Additionally, corrective feedback directed at incorrect language use can further guide the child towards oral language proficiency. In time, the emergence of correct language production is likely, enforced by language habits and encouraging response. According to behaviourism, the *environment* provides the circumstances and processes of language development.

In L2 teaching, the corresponding model to behaviourism is the audio-lingual approach (Lightbown and Spada 2006:34). Mimicking and memorizing words and structures in a particular order corresponds with the behaviourist language development theory that claims language is formed by habits. The different language skills are often taught in a fixed order in the audio-lingual approach (Richards and Rodgers 1986:52-53), starting with listening. The pupils then progress to speaking. Reading and writing skills are also taught, but they are presumed to be reliant on already existing oral skills. The main classroom practices are dialogue and oral drills, and the aim is memorisation through repetition of language input.

The belief supporting the audio-lingual approach, as applicable for L2 learning, is that learners will incorporate first language habits into second language learning. This formation of habits is assumed to be transferable from first to second language learning via classroom activities of imitation, practice and enforcement. Regarding cases of similar mother tongue and target languages, the use of the Contrastive Analysis Hypothesis might explain how learners can acquire the target language comparatively easier than with a non-similar first- and target language. The Contrastive Analysis Hypothesis suggests that learners acquire the target language with relatively more ease if it is similar to their L1 (Lightbown and Spada 2006:34). As an illustration of the said hypothesis in connection with Norwegian L2 learners, the English language is linguistically more similar to Norwegian than, for example, Spanish. Norwegian and English both belong to the Germanic language family and share similarities both in syntax and lexis. Spanish does not. As a result, it may require more effort from Norwegian native speakers to learn the Spanish language compared to learning English.

The behaviourist perspective has been questioned with regard to the complex structures of language (Chomsky 1959). Recognising that behaviourism can account for early

stage imitation of basic language aspects, Chomsky (1959), as cited by Lightbown and Spada (2006:15), argues, however, that it cannot explain more complex grammar acquisition. The basic target language input that children are exposed to is not significantly grammatically advanced to explain children's extensive structural knowledge. Suggesting that learners absorb and express more language knowledge than is reasonable to expect through exposure alone, Chomsky addresses the weakness of the behaviourist theory as the 'logical problem of language acquisition' (Chomsky 1959, as cited in Lightbown and Spada 2006:15).

Challenging the notion that the environment is the sole contributor to language proficiency, the innatist view, represented by Chomsky, rather views language learning as already embedded in the basic human biology, and not just the result of language input.

Chomsky (1959), as cited in Lightbown and Spada (2006: 15), proposes that humans are biologically pre-destined to language acquisition. As their natural functions develop, their language developments will follow in sequence. For example, unless disabilities hinder natural development, the majority of children will learn to walk at approximately the same age. The same happens in the process of language acquisition. The necessary contribution to language development comes from the environment; if a child interacts sufficiently with the people in their surroundings, the target language will eventually be learned. According to the principle of the innatist view, humans are therefore born with an innate ability to organically implement the principal rules of language. Since the immediate environment provides natural language in real time, i.e. people speaking to the child, the input will partly be grammatically incorrect. Although oral language is often grammatically inconsistent and flawed compared to written language (Lind 2005:51), learners can usually at some point distinguish between grammatical and ungrammatical language. Had children been mere 'blank slates', they would often only imitate and not learn to apply the unpronounced and underlying language rules (Lightbown and Spada 2006:15).

The audio-lingual approach to teaching presents language forms and structures in isolation, and disregards meaningful use within a communicative context (Lightbown and Spada 2006:196). This approach was prevalent up until the 1970s and early 80s, when there was a shift towards emphasis on the communicative nature of language.

3.2.2 Communicative approaches

In recent decades, the audio-lingual approach has been replaced by communicative approaches in second language teaching (Lightbown and Spada 2006:38). Transitioning from an approach primarily focused on rule learning and dialogue memorization, the umbrella term *communicative approach* promotes a more meaning-based language learning process (Harmer 2001:84-86). The hypothesis behind a communicative approach is that learners can achieve progress in the target language without direct instruction, but rather through communicative learning situations in a variety of forms and intentions. Communicative teaching practices are dependent on the learners' desire to communicate a message, and the content of the said message is suggested to be more important than the actual form (Harmer 2001:85).

Communication is therefore both a means and a goal of language learning. While exposure to comprehensible input, e.g. through reading extensively, can be beneficial in L2 acquisition, Lightbown and Spada (2006:38) acknowledge that guided instruction may also be necessary in order to achieve successful language learning.

In contrast to the audio-lingual approach, which often emphasizes conscious learning of language forms and pronouncing words correctly, the central focus in communicative approaches is often to communicate meaning in social settings. Nunan (1991:279) presents several features which can be used to characterize a communicative approach with regard to classroom practices and tasks. Firstly, communication through interactions in the target language is emphasized, and authentic texts are often preferable. The learners are also encouraged to focus on the learning process itself, not just the target language. Additionally, personal experiences of the learner can be seen as relevant to the learning process, and language activities often aim to prepare the learners for applying their language skills outside the classroom.

With regard to materials used in a communicative approach, Hedge (2000:67-68) addresses the use of authentic materials in L2 classrooms. Authentic materials are defined as 'materials which have not been designed especially for language learners and which therefore do not have contrived or simplified language' and these include both oral and written language production (Hedge 2000:67). Since the aim of communicative approaches is often to prepare the learners for real world language interactions, the argument for authentic texts is that this aim should be reflected in the teaching materials. Learners who have only been exposed to unnatural target language in a classroom will often not succeed in real-life L2

communication. In order to build learner confidence and avoid demoralization, Hedge (2000:67) proposes that authentic texts should gradually be introduced into the L2 classroom.

However, authentic texts are not universally endorsed by all L2 researchers. Day and Bamford (1998: 53) criticize the use of authentic written texts in L2 communicative approaches, referring to the tendency of preferring such texts as ‘the cult of authenticity’. Claiming that creating texts designed for L2 learners is often seen as unreasonably controversial, Day and Bamford (1998:53-54) suggest that learners can rather benefit from texts which meet their proficiency level. According to Day and Bamford (1998:56), the dominant view on simplified texts is that they are pedagogically inferior to authentic texts and induce no interest among L2 learners. Furthermore, the terms used to describe them, e.g. *graded* or *simplified*, can possibly be counterproductive to their actual use. However, Day and Bamford (1998:57) promote the use of such texts with respect to L2 learners at beginning or intermediate stages of proficiency. For reading to be confidence-building and L2-inducing, the texts need to be tailored to the learners’ proficiency level. Using simplified versions of authentic texts, or texts especially designed for L2 beginners, encourages language learning (Day and Bamford 1998:57-58).

Graded readers, as used in the EYLP approach presented in this thesis (see section 2.4), serve as an example of authentic texts being used in young language learner teaching. The books used in the approach were intended for English native speakers, but were applied in L2 learning. The texts, however, were graded, i.e. designed for a particular proficiency level, which researchers such as Day and Bamford (1998) support.

3.2.4 L1 learning versus L2 learning

The acquisition processes of first and second language learning often hold separate characteristics. L1 learning typically occurs naturally and without conscious effort, while L2 learning is often comparatively more organized and consciously approached. L1 proficiency is generally achieved through casual conversations in children’s home environments (Lightbown and Spada 2006:10). In contrast, L2 instruction is often meticulous and planned and often limited to school classrooms. The two contrasting language acquisition processes have different proficiency outcomes, where the first language route typically results in a higher proficiency language level compared to second language learning. The implication is that the L1 acquisition process is the most effective one and that L2 instruction could adapt

some of the L1 principles to achieve greater language acquisition among L2 learners. As one of the main differences between L1 and L2 learning is exposure to the target language, increased input is seen by a number of researchers (e.g. Elley and Mangubhai 1983; Krashen 1984) as beneficial to L2 learning processes.

In contrast to the natural learning environment of L1, L2 instruction is often carried out in artificial circumstances, i.e. in a teacher-led classroom context. This classroom-restricted second language learning approach may be considered a hindrance to effective second language learning due to its relatively limited target language exposure (Elley and Mangubhai 1983). If the first language acquisition process is the most effective way to learn a language, it should be a goal to bridge the gap between the two learning practices. Elley and Mangubhai (1983) suggest that this can be done by working towards a language learning approach which simulates the process of first language acquisition, primarily through increased second language exposure.

Elley and Mangubhai (1983: 54-55) identify five differentiating factors between L1 and L2 learning processes, and propose that the differences should be reduced as much as possible in order to make L2 instruction more productive. The most effective way to reduce the differences is therefore suggested to be the implementation of extensive reading into L2 learning, thus closing the gap between L1 and L2 learning development.

Firstly, there is a suggested difference in *motivational strength* because the language learner already has the means for communication via their first language. Children's innate need to communicate will not be a prevalent motivation since they are already able to linguistically connect to others (Halliday 1973, as cited in Elley and Mangubhai 1983:54). As a result, external motivation, e.g. wanting to please the teacher, could be more essential to L2 learning than L1 acquisition. Secondly, *meaning over form* in language instruction is often a more dominant characteristic of L1 learning methods compared to L2. L2 classroom practices often focus on 'form, practise, and repetition of structure' (Elley and Mangubhai 1983:54) instead of conveying new meaning.

Exposure to the target language is another main difference between L1 and L2 learning (Elley and Mangubhai 1984:54). Constantly surrounded by their first language, L1 learners normally acquire their first language through relatively unlimited exposure from their environment. Comparatively, L2 exposure is generally more restricted. In addition to the sheer amount of exposure, the *type* of language exposure often differs between L1 and L2. L2 exposure is usually planned and often more deliberate compared to the more informal and unplanned first language interaction. The result of artificial language instruction can be the

lack of communicational signifiers, such as facial expressions and gestures, in a given context. Donaldson (1978:38), as cited in Elley and Mangubhai (1983:55), claim that the ability to interpret situations could be important in language learning. This view suggests that context could be vital to language learning, as opposed to simulated exposure coming from a more controlled language learning approach.

Lastly, *model quality*, i.e. teacher proficiency, is presented by Elley and Mangubhai (1983:55) as a significant difference between L1 and L2 acquisition. Non-native speakers of the target language are often less fluent than native speakers and may therefore sometimes expose the learners to inaccurate language models. In addition, first language teachers might offer more instructional variation in form and meaning than L2 teachers because they are often more linguistically fluent.

In support of language proficiency progressing as a result of using language communicatively, researchers such as Krashen (1984) argue that language should be learned in a meaning-based context. In contrast to the general discourse of language research, Krashen (1984:21) explicitly distinguishes between language *acquisition* and language *learning*. When comparing the two, Krashen proposes that acquisition by far supersedes learning. Language ‘acquisition’ is suggested to be a subconscious process similar to the way a child learns to master his/her first language, while ‘learning’ is a conscious process. ‘Acquisition is responsible for our ability to use language in both production and comprehension, while conscious learning serves only as an editor or monitor (...)’ (Krashen 1984:21). ‘Comprehensible input’ is suggested by Krashen (1984:21) to be the prerequisite for acquisition, claiming that acquisition does not occur in instructive learning situations focused on correct form over communicative meaning. In order for the learner to progress, the current competence level should be taken into account. Krashen’s input hypothesis is defined as $i + 1$, where the ‘i’ represents existing language proficiency level, and the ‘+1’ contains language forms just beyond the said level (Lightbown and Spada, 2006:37). Furthermore, Krashen (1984, 2004) puts forward that the most effective way to acquire language is to read extensively.

3.3 Extensive reading

3.3.1 Extensive reading characteristics

In foreign language teaching, two approaches to reading are often contrasted: *extensive* and *intensive* reading. Day and Bamford (1998:5) credit Palmer (1969:131) for introducing the term *extensive reading* to be used in foreign language pedagogy. Palmer presented extensive reading to mean the rapid reading of numerous books with a focus on the *meaning* of the text, as opposed to the contrasting concept of *intensive* reading, where one would ‘take a text, study it line by line, referring at every moment to our dictionary and grammar, comparing, analysing, translating, and retaining every expression that it contains’ (Palmer 1921/1964:111, as cited in Day and Bamford 1998:5).

Hafiz and Tudor (1989:5) explain intensive reading practices as exposure to and close study of comparatively short texts which exemplify specific linguistic aspects of the target L2, such as lexis and syntax. The texts also provide a foundation for reading strategy exercises. Typically, Norwegian L2 learners engage in intensive reading activities to a greater extent than extensive reading, and the textbook is often the primary source of reading (Drew 2004, 2009; Hellekjær 2007).

3.2.2 Extensive reading

In contrast to intensive reading, the term *extensive reading* is described by Hedge (2000:202) through presenting certain ideal characteristics of the said reading. An extensive reading approach could include reading large quantities of materials which differ in form and intention. The reading should be consistent over time. The texts should be relatively long, and the reading would be done for ‘general meaning, primarily for pleasure, curiosity, or professional interest’ (Hedge 2000:202). Furthermore, reading could be done in the classroom, but also outside school hours, e.g. at home. Ideally, the reading material would be chosen by the reader based on interest and proficiency level.

Vocabulary learning is an intrinsic part of language acquisition, and some researchers suggest that extensive reading can have a positive effect on learners’ vocabulary (e.g. Wilkins 1972; Day and Bamford 1998). Wilkins (1972) argues that reading can make learners understand which words are appropriate in a given context, and consequently expand their

lexis. By reading, the learner 'is exposed to lexical items embedded in natural linguistic contexts', and '(...) as a result they begin slowly to have the same meaningfulness (...) that they have for the native speaker (Wilkins 1972:132). Day and Bamford (1998:17) claim that there is no essential difference in L1 and L2 vocabulary acquisition, and that reading extensively can increase L2 vocabulary the same way as for L1.

However, the beginner L2 learner often needs the input to be just within, if not slightly below the comprehensible competence level (i.e. the *i minus 1* level). By engaging with *i minus 1* reading material L2 lexis can be increased (Day and Bamford 1998:17). With regard to L1 material, the comparatively broader vocabulary of a person's L1 compared to L2 vocabulary can offer more linguistic scaffolding within the given textual context. The number of unknown words in a text can therefore be comparatively higher in an L1 text than an L2 text in order for readers to understand the meaning, and subsequently expand their vocabulary (Day and Bamford 1998:18).

Turning to affective aspects of learning, Arnold and Brown (1999:2) propose that effective language learning might depend on particular attention to such aspects. 'Affect' refers to internal psychological features, such as feelings, motives, needs and attitudes (Lightbown and Spada 2006:37). Heathington (1994:199) claims that the development and maintenance of positive attitudes towards literacy-promoting classroom activities is crucial for the learning process. With regard to extensive reading practices, researchers such as Krashen (2004) and Drew (1998) suggest that classroom extensive reading can also have an affective influence on the participants. To see the reading in itself as pleasurable might be beneficial to reading motivation, as a positive, low-anxiety attitude towards reading can consequently result in enhanced overall language skills.

In order to achieve L2 acquisition, Krashen's language acquisition theory is reliant on low-anxiety learning situations (Krashen 1984:22-23). Hence, Krashen's Affective Filter hypothesis is central to explaining how understandable input does not automatically result in language acquisition. According to the hypothesis, the learner, in addition to read in accordance to proficiency level, needs to be in a relaxed mental state to avoid the mental block formulated as an Affective Filter. For example, if the learner is lacking motivation, is unable to identify with the second language speakers, or is apprehensive in relation to their own performance, language acquisition is impeded. This can result in a metaphorical barrier standing in the way of language acquisition, even with appropriate input. Krashen (1984:21) therefore proposes that, in order for acquisition to occur, the focus needs to be on the message and not the code, i.e. meaning over formal language sequences. Furthermore, the learner

should not view the acquisition circumstances as too demanding or daunting. A non-anxiety inducing situation, where the attention is drawn away from the distinctiveness of the target language, is optimal for acquiring second languages.

In alignment with Krashen's Affective Filter hypothesis, i.e. that low-anxiety learning situations are optimal for language acquisition, enjoying what is being read can have a positive effect on anxiety levels in a learning context (Yamashita 2013). After studying the effects of extensive reading on reading attitudes in a foreign language, Yamashita (2013:256) found that among Japanese L2 English students, extensive reading increased the students' comfort and lowered their anxiety levels in connection with EFL reading.

Moreover, reading books is often comparatively more pleasurable when the material is chosen by the reader according to interest and proficiency level. Drew (1998:75) claims that if a learner finds pleasure in reading, i.e. chooses reading material out of interest and in accordance with current competence level, it will most likely have a positive influence on the learning process.

Ajzen (1988:4), cited in Day and Bamford (1998:22), suggest that 'an attitude is a disposition to respond favourably or unfavourably to an object, person, institution, or event' (Day and Bamford 1998:22). Attitudes towards second language reading are furthermore discussed by Day and Bamford (1998:23) through a rework of the first language reading attitudes' analysis performed by Mathewson (1994) and McKenna (1994), as cited in Day and Bamford (1998:23). The four sources of student attitudes are suggested by Day and Bamford (1998:23-25) to be based on first language reading attitudes, previous L2 reading experience, general L2 attitudes, and the L2 classroom environment. With regard to extensive reading and attitude, Day and Bamford suggest that extensive reading can have a considerable effect on the two last sources, namely general L2 attitudes and L2 classroom environment. The two first sources are a result of past processes and therefore deemed beyond the reach of a current program.

However, as a central extensive reading advocate, Krashen's views have been criticized. After reviewing the critiques, Gregg (1984:80-94) argues that the overall issue with Krashen's language learning assumptions is that they are difficult to empirically prove. For example, Gregg argues that the separation of acquisition and learning is difficult, and that Krashen does not offer up a scientific method to prove this distinction.

Furthermore, Harmer (2001:74-75) criticises the affective variable and its supposed importance in learning, as proposed by Krashen (1984). The focus on language learners' feelings with regard to their learning experiences can be referred to as the humanist approach

theory (Harmer 2001:75) and has influenced classroom practices and materials. Adherents to such a theory suggest that the learners' feelings are as vital to the learning process as their mental state and academic level. Hostility towards the teaching subject, materials or methods, can negatively interfere with learning. Harmer (2001:75) acknowledges that a non-threatening teaching environment is probably warranted in order for learning to be successful, but warns against teachers becoming 'moral guides and quasi-therapists' (Harmer 2001:75). To pay too much attention to learners' self-esteem could possibly interfere with the teacher's language guiding role.

Krashen and Terrell (1983), cited in Hafiz and Tudor (1989:5) acknowledge that extensive reading alone has certain limitations regarding other forms of communication apart from writing. 'Written input alone will not result in spoken fluency, due to the phonological factor as well as differences in spoken and written language' (Hafiz and Tudor 1989:5). However, Krashen and Terrell put forward that reading as comprehensible input may increase general language knowledge, both in spoken and written language.

Citing direct instruction to be the key alternative to reading, Krashen (2004:18) characterises direct instruction as a combination of *skill-building* and *error correction*. The skill-building process promotes conscious rule-learning and memorizing the meaning and spelling of words. Through output practice, the knowledge is made automatic. Error correction is explained thus: 'When errors are corrected, students are expected to adjust their conscious knowledge of the rule, word or spelling' (Krashen's (2004:18). In his criticism of direct instruction, Krashen's three main objections are, firstly, that language is simply too complex to be learned one rule after another. Secondly, literacy can be attained without formal instruction. Lastly, direct instruction results in little or no language acquisition. According to Krashen (2004:18), studies on the effects of instruction reveal that the gained effects are to some extent fleeting.

3.3.2 Extensive Reading research

Several researchers support extensive reading as a primary factor in language learning (e.g. Elley and Mangubhai 1983; Krashen 1984, 2004; Hafiz and Tudor 1989; Lee and Hsu 2009).

With regard to the fundamental differences between L1 and L2 learning principles (see section 3.2.4), Elley and Mangubhai (1983:55) propose that primary school L2 instructors

should aim to reduce the aforementioned differences between L1 and L2 learning. As a result, L2 learning could be made more effective. The suggested way in which this could be attained is by increased exposure to the target language through well-illustrated, high interest story books. To examine the correlation between written input and language learning effectiveness, Elley and Mangubhai (1983) conducted second language research in Fijian and Indian primary schools. The book-based programs on which their research results were based were coined 'Book Flood' (Elley and Mangubhai 1983:57).

At the time of the study, the audio-lingual approach dominated the national education systems in which the studies were conducted. Six rural Fijian and Indian schools participated, and the school classes were assigned to one of the following groups: 'Shared Book Experience Method', 'Silent Reading Method' or 'Control Group' (Elley and Mangubhai 1983:58-59). The chosen schools were selected due to their relative linguistic isolation, i.e. the communicative language outside the schools was non-English. According to Elley and Mangubhai (1983:58), this could be beneficial for the reliability of the study, as any exposure increase would be related to and controlled by the educational situation.

The Shared Book Experience method contained some characteristics similar to a classic bed time story read by an adult. The teacher introduced a language-appropriate, illustrated book and engaged the pupils in a discussion of both pictures and content. Then the teacher read the book aloud. After having been made familiar with said book, the pupils then read with the teacher, i.e. this was guided reading. The pupils read for meaning and were encouraged to predict the narrative, making the reading a high-interest, low-accountability learning situation. Follow-up activities were non-instructive and based on the story which was read, as opposed to activities focused on language forms and vocabulary. The hypothesis behind the method was that 'new learning takes place at the point of interest' (Elley and Mangubhai 1983:58).

The Silent Reading Method did not entail a special workshop. The teachers were encouraged to read aloud and spend time on pupil sustained silent reading for 10-20 minutes each day. The teacher functioned as a reading model and read along silently with the pupils. There was no post-reading accountability, i.e. no written assignments. The essence of the method was that reading increased reading abilities.

Finally, the Control Group followed the at-the-time traditional audio-lingual approach, with language form drills and oral imitation as the main classroom activities. The reading material consisted of graded books with subsequent tasks regarding structure and vocabulary practice.

After reviewing the post-tests, the results showed that extensive exposure to books had a positive effect on target language learning. With regard to the different groups, both book flood groups surpassed the control group in all proficiency level categories, namely reading comprehension, listening comprehension, English structures, word recognition, and oral sentence repetition (Elley and Mangubhai 1983:59-60).

Furthermore, through empirical evaluation of nine contrasting second language acquisition programs, Elley (1991:375-379) found that extensive exposure to high-interest illustrated story books had a positive influence on second language learning. Children in alternative book-based programs promoting natural literacy acquisition improved their comprehension proficiency in both reading and listening with additional transfer to all target language aspects (Elley 1991:408). They also gained a positive attitude towards reading books.

The opposing approach to the book-based programs was a more traditional systematic and organised method, which contained instruction in a fixed order. The practices consisted of drills, oral activities, such as imitation and dialogue and controlled reading (Elley 1991:376). After reviewing L2 programs with regard to their teaching effectiveness, Elley (1991:375) concludes that immersing the language learners in interesting, frequently reader-selected texts, and thus limiting systematic instruction and linguistic input controls, could have an advantageous effect on second language learning compared to audio-lingual programs.

The alternative book flood literacy acquisition programs had defining similarities, as stated by Elley (1991:378-379). The texts were *meaningful*, as they were specifically designed to appeal to young language learners, and were mostly rich in illustrations. The literature exposure differed in form, from teacher presentation to silent readings and listening activities. The language learning was *incidental* and arose from the context of meaningful print processing, as opposed to deliberate teacher instruction. By reading engaging stories, the children acquired vocabulary and grammatical structures more effectively than through the audio-lingual approach. The book-based programs also favoured *meaning over form*, where '(...) the language teacher directs the attention of the learner to those features of performance which normal use of language requires him to ignore' (Widdowson 1978:17, as cited by Elley 1991:379). A genuine interest in what is being read helped with language proficiency as opposed to a more analytical and out-of-context language study. Lastly, the high level of *intrinsic motivation* defined the book-based programs. Reading or listening to books designed to engage and stimulate interest in the target audience increased the internal motivation for learning. Compared to motivation created through wanting to please the teacher, or acquiring

knowledge for a test, language learning driven by pleasure rather than a sense of academic duty was found to be more effective.

In another extensive reading study, Hafiz and Tudor (1989) conducted a 3-month research project on the effect of extensive reading through graded readers. The subjects were UK learners whose second language was English. However, the majority of the subjects were either born in the UK by immigrant parents or had received their education in the UK. Hence, they used English as a communicative language outside the home environment, and were further exposed to the target language via media outlets, and in other school subjects. In comparison to Elley and Manguhai (1983), who studied L2 learners in a more linguistically isolated environment, where the only English exposure was in school settings, Hafiz and Tudor acknowledged that the external exposure was not optimal for research purposes. However, the results were significant enough to offer a suggestive correlation between extensive reading and language progression. Comparing the experimental group, who read five hours per week, to a control group who did not, the results showed that the experimental group superseded the control group in both reading comprehension and writing (Hafiz and Tudor 1989:7-8).

Moreover, after reviewing extensive reading studies, Lee and Hsu (2009) found several design weaknesses which were due to practical constraints of the studies. The study flaws were categorized by Lee and Hsu (2009:12) to be relatively short duration, limited access to books, a lack of appropriate comparison group, and accountability, i.e. required written activities on what had been read. In order to examine the impact of in-class reading, also termed 'sustainable silent reading' (Lee and Hsu 2009:12), Lee and Hsu made some design changes to achieve optimal effect. The practical changes made to Lee and Hsu's study were as follows: extending the duration of the study, offering a higher access of books, less accountability, and a valid control group. The subjects were 86 Taiwanese vocational college students who were at a relatively low-proficiency English level. The students had been awarded similar grades for the general English class the previous semester, so they were at the same proficiency level at the study starting point.

The control group and the experimental group both contained 43 subjects. Both followed the same writing curriculum and were part of the same traditional language instruction class. They also used the same textbook. The groups had different teachers, but their classroom practices were the same. In addition to the general English classes, the experimental group had a weekly self-selected reading period of 50 minutes. The reading

material was graded readers. The students read according to interest and competence level, and were encouraged to read at least one book per week.

The results of six measures were compared; word production, content, organization skills, vocabulary, mechanics, and language use (Lee and Hsu 2009:15). After comparing the pre- and post-study essays of the two groups, the experimental group post-essays scored comparatively higher in all categories. The increase in fluency compared to the control group was the most statistically significant. In addition to improving their writing skills to a greater extent than the control group, the experimental group also reported that they read more the second semester of the study than the first semester. This lends itself to the conclusion that they enjoyed reading (Lee and Hsu 2009:17).

Summing up, the aforementioned book-based programs incorporated extensive reading. Teamed with literacy-promoting activities, the programs resulted in general language acquisition. The findings support Krashen's (1982) Input Hypothesis, as cited in Elley (1991:408). Increased exposure through reading can help learners acquire the target language more quickly and effectively.

3.4 The link between reading and writing

According to Grabe and Kaplan (1996), reading and writing are mutually beneficial language activities, as 'the outcome of a reading activity can serve as input for writing, and writing can lead a student to further resources' (Grabe and Kaplan 1996:297).

Following up on the positive link between extensive reading and writing in the study by Lee and Hsu (2009), several other researchers have argued that reading and writing are interrelated processes (Krashen 1984, 2004; Janopoulus 1986; Drew 2009b). The hypothesis shared by supporters of the reading-writing correlation is that reading extensively can have a positive effect on the written output of language learners.

Krashen (1984:23) makes a strong connection between reading and writing, claiming that writing ability is acquired through extensive reading motivated by interest and/or pleasure. Furthermore, Krashen (2004:17) suggests that extensive reading or, as he terms it, 'Free Voluntary Reading', is the basis of language education. By reading extensively, pupils can expand their vocabulary and improve grammatical skills. The concept of Free Voluntary Reading focuses on reading for pleasure as opposed to being imposed to read, in order to fully

take advantage of the language learning possibility that comes with reading, including writing skills. Krashen (1984:20) hypothesises that writing skills are connected to reading:

Writing competence (...) comes only from large amounts of self-motivated reading for interest and/or pleasure. It is acquired subconsciously; readers are unaware they are acquiring writing competence while they are reading, and are unaware of this accomplishment after acquisition has taken place. It is reading that gives the writer the 'feel' for the look and texture of reader-based prose.

Krashen (1984:21) acknowledges that the relationship between pleasure reading and quality writing is not unequivocally without faults. As opposed to ubiquitously claiming that the more reading is done, the better the writing will be, Krashen points out that his research only shows that all proficient writers have read extensively for pleasure. In other words, every skilled writer has engaged in a certain amount of reading. The reading hypothesis does not discriminate between 'excellent' or 'good' writers, but concludes that both types of writers 'have read 'enough' to have acquired the code of written language' (Krashen 1984:21). As a result of considerable language input through reading, essential grammatical structures and rules of discourse will be implemented in the learner's skill set and be available for use in written production (Krashen 1984:23).

Making the connection between reading as instrumental for writing skills, such as spelling competence, Smith (1983), cited in Krashen (1984:24), notes that the complexity and erraticism of spelling rules make spelling hard to consciously learn. Direct instruction in the form of error-correction is unlikely to be the reason for competent spelling, but this would rather come from reading.

Moreover, Janopoulus (1986) conducted a US study involving graduate students of varied L1 backgrounds. The aim was to examine a possible positive correlation between L1 and/or L2 pleasure reading and L2 written output of adult learners. The subjects were characterized according to voluntary L1 and L2 reading practices, i.e. to what extent they read for pleasure. The study showed no correlation between L1 pleasure reading and written L2 proficiency, but 'heavy' L2 pleasure readers were more likely to write at a comparatively higher L2 proficiency level than 'not-heavy' pleasure readers (Janopoulus 1986:766-767). Janopoulus concludes that L2 reading and writing are closely related, but also states the connection as correlative, not causative, and suggests further research.

Finally, Drew (2010) puts forward that writing can be directly mirrored in reading material. In his aforementioned comparative study of EYLP participants, as they matured from grade 4 to grade 6, Drew found that language input, i.e. reading, might have a direct

influence on the output, i.e. writing. When comparing the pupils' graded reader books to their writing, Drew found several similarities across the grades, both syntactic and lexical (Drew 2010:213-214).

The current section suggests that reading and writing are reciprocal activities. As L1 writing normally precedes L2 writing, there may be differences in written L1 output compared to L2 writing.

3.5 The relationship between L1 and L2 writing

According to Silva (1993:657), the common assumption in English as a second language writing research is that L1 and L2 writing share some strong characteristics and are similar in nature. Silva acknowledges that first and second language learners '(...) employ a recursive composing process, involving planning, writing and revising, to develop their ideas and find the appropriate rhetorical and linguistic means to express them.' (Silva 1993:657). In contrast to these similarities, Silva claims that there are significant differences to first and second language writing processes. Through a review of 72 studies, Silva found differences between L1 and L2 writing in terms of strategy, rhetoric and linguistics. The two main dissimilarities are presented as 'composing processes' and 'written text features' (Silva 1993: 657-668).

When suggesting what goes into composing processes, Silva includes 'planning', 'transcribing' and 'reviewing' (Silva 1993:661). According to the review of studies, L2 writers planned less, resulting in less successful writing. More time was spent on identifying the topic of the writing, but time spent did not result in comparatively useful material. Generated ideas were less likely to be included in the actual writing, and L2 text organisation was reported to be more laborious compared to L1. Actual text production, referred to by Silva (1993:661) as 'transcribing', was more demanding and less prolific. L2 writers produced less text within an allotted time, and writing was reportedly more demanding, so that more frequent writing breaks were needed. L2 writing seemed to be generally less revised than L1, with comparatively fewer occurrences of rereading and text reflection

Differences in written text features between L1 and L1 writing included 'fluency, accuracy, quality, and structure' (Silva 1993:662). Silva claimed that L2 writing was less fluent; texts written by L2 writers were often comparatively shorter than L1 texts. L2 writers generally made more errors than when they wrote in their native language, and they often received lower scores when evaluated holistically. Finally, L2 writers generally showed less

competence in argument structure, e.g. less use of definitions and examples to strengthen arguments, and exhibited less narrative structure knowledge compared to their L1 writing.

Drew (2003) conducted a Norwegian study comparing L1 and L2 writing among Norwegian 7th graders, and some of the results mirrored those in Silva's (1993) overview. In his study, Drew found that there were differences between the learners' L1 and L2 writing in terms of fluency and grammatical complexity, i.e. sentence types, subordination and noun phrase modification. In a timed writing exercise, the pupils were asked to write two narrative texts: one in Norwegian and one in English. The Norwegian texts were translated into English and compared with the writing of the English texts. The results showed that the pupils on average wrote more in their L1 texts, and the L1 texts contained more subordination and noun phrase modification compared to the L2 texts. Drew used the findings of the study to comment on the Norwegian educational system, and made recommendations as to how the gap between L1 and L2 writing could be reduced for young learners in Norway. The suggested requirements were an earlier start to language learning and literacy, extensive L2 reading, sufficient contact time, and high teacher competence (Drew 2003:355).

Lexical words are often more available in a writer's L1 than L2, as suggested by Harley and King (1989). In order to investigate L1 and L2 lexis, Harley and King (1989) compared the number of verb types in narratives and letters written by bilingual and second language 6th grade students. The study found that native writers overall produced a higher number of verb types compared to the second language pupils, suggesting that native speakers have an easier access to lexically varied verbs compared to the second language writers (Harley and King 1989:421).

Further concerning L1 and L2 written expression, Hyland (2003:34) argues that the main distinction between L1 and L2 writing competence is the ability to express thoughts and ideas in a linguistically adequate manner. L1 writers often have a pre-existing, comprehensive vocabulary before they start writing in their native language, in addition to an intuitive sense of what makes language grammatically correct. L2 writers, on the other hand, often learn several language modules simultaneously, e.g. general target language development and target language writing at the same time. This can complicate the learning process, as the writers might not be able to adequately express their ideas due to lack of L2 'linguistic resources', and may become frustrated (Hyland 2003:35).

The learners' native language can also have a direct impact on the target language output. Concerning L2 errors due to first language interference, native speaker patterns can be inaccurately transferred to second language (Lightbown and Spada 2006:14-15). This may

particularly happen with young language learners whose target language may not be so developed as that of older learners. Children tend to overgeneralize to a greater extent, excessively relying on first language patterns in second language production (Lightbown and Spada 2006:14-15). Adult learners, on the other hand, may be hesitant to apply first language characteristics due to their metalinguistic awareness of the inaccuracies which might follow L1 patterning.

3.6 Measuring written fluency and complexity

According to Wolfe-Quintero et al (1998:4), there are certain generalizations concerning fluency, accuracy and complexity which can be made on the basis of written second language developmental studies. Firstly, learners produce more text within a given time frame as they become more proficient in second language writing. Secondly, fewer mistakes are made. Finally, sentences become both grammatically and lexically more complex.

For the current study, grammatical complexity will be examined by using measures of syntactic complexity, i.e. subordination and noun phrase modification (i.e. pre- and/or post-modification of the head noun in a noun phrase). Lexical complexity will be examined by a frequency count of verb types, noun types and adjective types. The T-unit is central to both measures of fluency and complexity and is therefore explained in the following subsection. Relevant studies on fluency and complexity, both grammatical and lexical, are also included.

3.6.1 The T-unit

Several prominent measures of language development are based on the T-unit. 'T-unit' stands for 'minimal terminable unit' (Hunt 1965:21), and refers to a language production unit that can be grammatically terminated by adding a final punctuation mark, even when it is not grammatically required. The T-unit was constructed by Hunt (1965) as a more suitable indicator of language development compared to the sentence. Hunt (1965:49) defines a T-unit as a 'main clause plus the subordinate clauses attached to or embedded within it'

The need for a new production unit to measure language development came out of Hunt's (1965) dissatisfaction with the sentence as a measurement unit. In sentence-based

analysis, punctuation in the form of a period marks the end of a running sentence, and the start of a new one. However, young language learners have a tendency to endlessly string sentences together with 'and', consequently omitting the full-stop that a period provides. Even if the production of such long sentences is not grammatically incorrect, only a stylistic offence, Hunt considered the sentence as an ineffective marker for language proficiency. A more effective measurement would be the T-unit. Hunt claimed the T-unit would solve the problem with young language learners' under-punctuation by dividing long, stringed-together sentences into the comparatively shorter T-units. To illustrate the problem with under-punctuation, Hunt (1965:20) presents the following example from a text written by a 4th grade English native speaker:

I like the movie we saw about Moby Dick the white whale the captain said if you can kill the white whale Moby Dick I will give this gold to the one that can do it and it is worth sixteen dollars they tried and tried but while they were trying they killed a whale and used the oil for the lamps they almost caught the white whale

This text unit is made up of 68 words and contains no punctuation. It further contains both simple, complex and compound clauses and can be divided into 6 T-units. Each T-unit can be considered a grammatically correct unit, but the whole unit is totally devoid of punctuation. By dividing the unit into T-units, a relevant analysis of its content can be carried out (Hunt 1965:20).

The T-unit can be used to measure both fluency, i.e. T-unit length (words per T-unit) and grammatical complexity, e.g. subordinate clauses per T-unit. Since the T-unit can be lengthened by, for example, adding subordinate clauses, the measures for fluency and complexity are interwoven and can be difficult to separate. Hunt (1970b) addresses the T-unit subordination process and puts forward that T-units of older writers 'pack more information in fewer clauses by the grammatical processes known as embedding and deletion' (Hunt 1970b:188). To illustrate embedding and how it can increase T-unit length but simultaneously reduce the number of T-units in a text, Hunt (1970b:190) gives an example taken from a 4th grade text. The following example is made up of two main clauses coordinated with 'and': 'There was an old lady and the lady was a singer' (Hunt 1970b:190). With regard to T-unit number, the sentence would be divided into two short and simple T-units: /there was a lady/ /and the lady was a singer/. According to Hunt, an older student would likely reduce the second main clause to a relative clause, and thus write 'There was a lady who was a singer', i.e. a complex T-unit. While the younger pupil would comparatively more often produce two

main clauses coordinated with 'and', the older writer would more often produce complex T-units, i.e. one main clause and one subordinate clause. In the process of combining the information from two clauses into one, the more mature writer would make the T-unit more complex and, in turn, also longer. In addition, the single T-unit would be more succinct.

In addition to adding subordinate clauses, as in the abovementioned example, Hunt (1965) also points to other ways to make T-units longer. Making phrases longer, e.g. by modifying noun phrases, lengthens the T-unit. Lastly, coordination inside T-units is another way of influencing T-unit length, according to Hunt (1965:93). To illustrate such coordination, Hunt (1965:97) compared the following examples: 'We go up to my tree house. And we make plans to spy on the girls'. In the two previous T-units, 'we' is the subject in both T-units, but could be deleted in the second one. Then, the two T-units would become one: 'We go up to my tree house and make plans to spy on the girls'. Hunt (1965) claims that comparatively younger writers miss opportunities to such coordination compared to older writers. However, such lengthening does not affect T-unit complexity, only fluency, i.e. T-unit length.

3.6.2 Studies of written fluency

After reviewing studies of fluency, Wolfe-Quintero et al. (1998) present fluent L2 writers as those able to 'produce written language rapidly, coherently, appropriately and creatively'. A fluent writer will have comparatively easier access to language than a less fluent writer. Schmidt (1992:358), as cited in Wolfe-Quintero (1998:13), argues that the ability to access language relies on sophisticated language memory processes as opposed to language rules, which are consciously learned. A less complex definition of fluency is presented by Lennon (1990), as cited in Wolfe-Quintero (1998:13): fluency means text production rate and length. For the purpose of this thesis, measures of fluency are words per text, T-units per text and T-unit length (words per T-unit).

However, Wolfe-Quintero et al. (1998:18-19) conclude their review of fluency studies by stating that the number of T-units alone does not adequately determine fluency. They put forward that with higher proficiency levels, T-unit production (i.e. the number of T-units) decreases. However, T-units are often simultaneously made longer by e.g. adding subordinate clauses or lengthening phrases. A more differentiating measure related to development in fluency is therefore suggested to be T-unit length (Wolfe-Quintero et al. (1998:122).

Several researchers have presented fluency results in connection with T-unit and text length (e.g. Hunt 1965; Drew 2010). For example, Hunt (1965) suggests that words per T-unit increase as the writer reaches a higher level of proficiency. In Hunt's seminal 1965 study, where he compared the written output of pupils in grade 4, 8 and 12, T-unit length increased linearly with age. The average T-unit length for a 4th grader was 8,6 words. For 8th graders, the corresponding length was 11,5, and the average 12th grade T-unit consisted of 14,4 words.

Partly mirroring Hunt's (1965) results, Drew (2010) conducted a longitudinal study in which the English writing of Norwegian pupils in the 4th, 5th and 6th grades was compared with regard to fluency and complexity. To measure fluency, a word count was applied and an average number of words per text was calculated for each corpus. The mean number of T-units per text was also calculated for each corpus. An additional fluency measure was mean T-unit length. The results showed that as the pupils matured from the 4th to the 6th grades, they produced more text within the same time frame, i.e. increased fluency. The mean number of words per text was 60 in grade 4 and 115 words in grade 5. For the grade 6 pupils, the average text length was 186 words. Regarding T-unit count, the same age-related fluency progression applied. The 4th grade learners produced the fewest T-units per text, an average of 9,1 T-units. The 5th grade learners wrote on average 17,6 T-units per text, while the 6th grade learners averaged 26,6 T-units per text. T-unit length was also the shortest in grade 4 at 6,6 words per T-unit. The average 5th grade T-unit length was, however, slightly shorter compared to grade 4 (6,1 words per T-unit). Finally, the average 6th grade T-unit contained 7,1 words, i.e. an increase of 0,5 words per T-unit from grade 4 to grade 6 (Drew 2010:203-204).

3.6.3 Measuring written complexity

3.6.3.1 Grammatical complexity measures

Complexity in writing incorporates both *grammatical* and *lexical* complexity. Firstly, as shown by Wolfe-Quintero et al. (1998:69), grammatical complexity can be divided into grammatical variation and sophistication. Cited in Wolfe-Quintero et al. (1998:69), Foster and Skehan (1996:303) define improved grammatical complexity as 'progressively more elaborate language' and more syntactically diverse patterns compared to a lower level of grammatical complexity.

Grammatical complexity studies have used quantifiable measures to indicate proficiency level, e.g. the frequency and types of subordinate clauses and the frequency of complex noun phrases, i.e. nouns that are either pre-modified, post-modified, or both (Wolfe-Quintero et al. 1998:75). Both international studies (e.g. Hunt 1965) and Norwegian studies (e.g. Drew 2010; Raaen and Guldal 2012; Vigrestad 2006) have examined grammatical complexity in written text production.

Hunt (1965), in his aforementioned study of pupils' grade 4, grade 8 and grade 12 writing in the US, found that subordinate clause frequency correlated with age in that subordination increased as the learners matured. The older the writers were, the more subordinate clauses they produced. In the 4th grade texts, roughly two out of three of the T-units were single-clause ones. The 8th graders used two-clause T-units more frequently than the 4th graders, but the majority of their T-units were also single-clause ones. Multi-clause T-units made up 40 per cent of the 12th graders' clauses, a ratio which exceeded the younger writers.

Hunt (1965) also categorized subordinate clause types in order to discover which types could differentiate between proficiency levels. The subordinate clauses were namely 'noun clauses' (i.e. nominal clauses), 'adjective clauses' (i.e. relative clauses) and 'adverb clauses' (i.e. adverbial clauses) (Hunt 1965:73). Firstly, Hunt's findings suggested that relative clause frequency was the most important maturity index. Next came nominal clause frequency. Regarding adverbial clause types, these shifted in frequency as the writers matured. Hunt does not subcategorize adverbial clauses, but the specific words introducing each adverbial clause were tabulated. The most common introducers among all three grades were 'when', 'if' and 'because' (Hunt 1965:80). However, the frequency changed with age. The 4th grade writers favoured 'when' as an introducer, but the frequency dropped for grades 8 and 12. The number of clauses introduced by 'because' stayed roughly the same, while clauses introduced by 'if', i.e. adverbial clauses of condition, increased the most from grade 8 to 12 (Hunt 1965:82). The results lend themselves to the conclusion that adverbial clauses of condition could be a sign of maturity.

Drew (2010), in the aforementioned longitudinal study of Norwegian pupils in grade 4, 5 and 6, also measured the written subordinate clause ratio and noun phrase modification with the aim of differentiating between proficiency levels. The measures applied by Drew were the average number of subordinate clauses per text for each corpus, and the mean number of simple and complex noun phrases for each corpus. Additionally, the subordinate clause types were categorized and compared with regard to frequency across the three

corpora. Drew (2010) came to the same conclusion as Hunt (1965) with regard to language complexity and maturity. After comparing the writing of the said learners, the results showed that both the level of subordination and noun phrase modification increased with age. Grade 4 texts contained 0.2 subordinate clauses per text, while the corresponding numbers for grade 5 and 6 were 3.3 and 5.5 respectively. Moreover, the mean number of complex noun phrases per text increased from 3.4 occurrences per text in the 4th grade, to 4.6 in the 5th grade, and finally to 11.4 in the 6th grade (Drew 2010:205-209).

Furthermore, Raaen and Guldal (2012) performed a longitudinal study of the development of formal aspects of writing, namely orthography and T-unit complexity in written English. The participants were Norwegian 7th and 10th grade pupils. In relation to grammatical complexity, the grade 10 pupils generally produced a higher number of subordinate clauses compared to grade 7. Moreover, the 10th grade texts showed a particular increase in the frequency of clause types which are not found in Norwegian, e.g. ‘-ing’ clauses (Raaen and Guldal 2012:110-11).

Finally, subordinate clause frequency as an index of maturity is also supported by Vigrestad (2006). Vigrestad (2006) analysed and compared English texts written by Dutch and Norwegian 7th and 10th graders and found that, with maturity, the subordinate clause ratio per T-unit increased, i.e. the 10th graders (both Norwegian and Dutch) had a higher subordinate clause ratio per T-unit than the 7th graders. Specifically, the average Norwegian 7th grade T-unit contained 0.33 subordinate clauses. By 10th grade, the ratio had increased to 0.48. Similarly, the Dutch pupils progressed from a 0.16 subordinate clause per T-unit ratio in grade 7, while the corresponding number for grade 10 was 0.48 (Vigrestad 2006:59).

All the studies presented here therefore confirm that as writers develop their written language proficiency, their writing becomes more grammatically complex. However, not all studies have concluded that T-unit complexity is necessarily connected to language proficiency. With the aim of investigating a possible correlation between syntactic skill and overall composition scores, Kameen (1979:343) analysed 50 college level ESL student samples. With regard to writing quality, 25 texts were ‘good’ compositions and 25 texts were ‘poor’ compositions. The result showed that T-unit length, clause length and passive voice frequency most effectively discriminated between the two proficiency levels (Kameen (1979:347). When comparing T-unit length, the samples written by ‘good’ writers contained 29 % more words per T-units than the ‘poorer’ writers. However, clauses per T-unit did not differentiate the proficiency levels. Therefore, the result opposed the assumption that ‘good’

writers produce syntactically more complex T-units when their writing is compared to ‘poor writers.

The suggestion that T-unit subordination ratio does not differentiate between proficiency levels is also supported by Tjerandsen (1995), as cited in Hasselgreen (2006:128). Tjerandsen studied 8th grade pupils’ sentence complexity, and when comparing the highest assigned marks to the highest subordinate clause frequency, no correlation was found. However, Tjerandsen (1995), cited in Hasselgreen (2006:128), puts forward that future subordinate clause studies might be more relevant with regard to more advanced learners. However, even if Tjerandsen did not conclude that higher complexity scores and higher marks typically coincide, the strongest writers produced comparatively more complex and complex-compound sentences than the writers at lower proficiency levels. Nevertheless, T-unit analysis was not a strong indicator of a higher holistic evaluation mark (Hasselgreen 2006:132).

According to Hunt (1965; 1970), subordinate clauses are not the only applicable measure of grammatical complexity. Along with increased subordination as the writers matured, Hunt correspondingly also found that noun phrase modification increased with age (Hunt 1970:192). In his aforementioned 1965 study, 8th graders wrote over 150 per cent more single-word adjectives functioning as noun phrase modifiers compared to 4th graders. The same pattern emerged when examining prepositional phrases as post-modifiers. Compared to pupils in grade 4, grade 8 pupils produced 170 per cent more such prepositional phrases. Grade 12 pupils wrote 240 per cent more noun phrase post-modifying prepositional phrases than 4th graders (Hunt 1970:193).

3.6.2.2 Lexical complexity

According to Wolfe-Quintero et al. (1998:101), ‘[m]easures of (...) complexity in second language development can all relate to lexicon’. One way of measuring lexical complexity can be to count certain lexical features, such as different verb, adjective and noun types, as done by e.g. Harley and King (1989) and Drew (2010). Lexical variation and/or density, e.g. the number of lexical word types or the ratio of lexical words to non-lexical function words, are measures that can indicate language proficiency. The higher the level of a writer’s lexical complexity, the easier the access to a wider range of words will be. Comparatively, a writer at

a lower lexical complexity level tends to produce a text using more basic vocabulary. Supporting this assumption, Harley and King (1989) compared the number of verb types in narratives and letters written by bilingual and second language 6th grade students. The study found that native writers overall produced a higher number of verb types compared to the second language pupils, suggesting that native speakers had an easier access to lexically varied verbs compared to the second language writers. As L1 writers typically have a broader vocabulary compared to L2 writers, vocabulary can be expected to increase along with L2 proficiency progress.

Lexical complexity studies have also been conducted in Norway, e.g. Drew (2010). Drew's (2010) aforementioned longitudinal study of Norwegian 4th, 5th and 6th grade pupils' written English included lexical complexity measures in the form of a frequency count of lexical word types. The frequency count included verb types, noun types and adjective types, and showed that the pupils produced increased numbers of all word types as they became older (Drew 2010:206). For each grade, noun types were the most frequently produced, followed by verb types and, finally, adjective types. When comparing the number of noun types for each grade, Drew found that the average number of noun types per text more than doubled from year 4 to 6. Lexical verb type frequency more than tripled from year 4 to 6, while adjective types more than doubled (Drew 2010:206).

4.0 Materials and methods

4.1. Introduction

The aim of this thesis is to compare fluency and complexity in two corpora of English texts written by Norwegian 7th graders exposed to different teaching approaches. Presenting the materials and applied methods, the present chapter consists of four main sections. Section 4.2 describes the nature of the research. Section 4.3 introduces the participants of the study. Section 4.4 explains the writing task carried out to provide the sample texts. Section 4.5 describes the methods used to analyse the texts. Consisting of three sub-sections, this section offers details of each focus of the analysis, namely fluency, and grammatical and lexical complexity. Finally, section 4.6 addresses issues of validity and reliability in the research.

4.2 The nature of the research

The current thesis is primarily a quantitative study where the numerical data is presented through figures. Only descriptive statistics are used. This type of research can be compared with qualitative research, e.g. interviews and observations, which are presented through words, not figures (Dörnyei 2007:24). However, examples from the texts are shown, consequently adding a qualitative dimension to the study. The current study is part of the tradition of measuring quantifiable data in corpus studies of language learner texts, e.g. Hunt (1965) and Drew (2003, 2010).

4.3 The participants

The corpus consists of 86 texts written by 7th graders, 43 from a school using the Early Years Literacy Program (EYLP) (see section 2.4) and 43 from two schools that based their teaching on textbooks, i.e. an approach where a textbook comprised the primary texts source for the pupils. The 43 texts from the EYLP school were produced by pupils from three different classes. The other 43 texts were written by three classes of pupils from two different schools. The two corpora of texts were collected by members of the English department at the

University of Stavanger for the purposes of research on the writing of young language learners. The author was encouraged to carry out this research as the basis for her MA thesis. However, the author was only able to rely on the texts themselves and any information about them she could gather from the involved members of the English department, as the texts had been collected before the author started her MA studies.

Members of the English department had especially been interested in following the use of the Early Years Literacy Programme in English lessons in a Norwegian primary school from the time the pupils had started in the 4th grade until they reached the final year of primary school in the 7th grade (Drew 2009; 2010). Because the pupils in the EYLP had been required to read extensively in English, it was expected that their reading would have a positive influence on their writing. It was therefore decided to compare the writing of 7th grade pupils in the EYLP school with the writing of 7th grade pupils in the two control schools. The pupils in both schools had been given the same picture story to write about, and in the same circumstances. However, the texts from the control schools had been collected at an earlier time than the texts from the EYLP school. Both schools gave permission for the texts to be used for research purposes.

The EYLP school was in a relatively low socio-economic area of a large city in Norway and had a relatively high number of minority background learners. Five of the 43 subjects in the research group from that school were of a minority background. The two schools comprising the subjects in the control group were in suburban areas of the same city. The subjects in the research group from these two schools were all of Norwegian ethnic background.

The pupils in the EYLP school followed station teaching in homogenous ability groups, as described in section 2.4. The stations were the teacher station, the independent reading station, the computer station, the writing station, and a practical station for e.g. games. The teacher station was used for guided reading focusing on a book from the Wings series of graded readers written for pupils in Australian schools. The series consists of 26 levels incorporating 290 titles. The principle is for pupils to read most or all of the titles in a given level before moving to the next level. The typical levels for the pupils in the 7th grade were 18 to 22, which means that the pupils concerned would have read approximately 180 or more of these books. In the independent reading station, pupils would read self-chosen texts from the school library, either graded readers for English language teaching, or authentic texts.

The primary source of reading for the pupils in the textbook-based control school was the course text book, which is typical for most of the English teaching at the primary level in

Norwegian schools (Charboneau 2012:57). The textbook series used in the two schools were *A New Scoop* and *Stairs*. The textbook texts are usually based on a theme, e.g. ‘Ireland’, ‘Natural disasters’ and ‘Great adventurers’ in *A New Scoop 7*, and have oral and written exercises in the corresponding workbooks.

4.4 The task

The pupils were presented with a six-picture story chronicling a man’s journey up the mountains, where he encounters a tiger (from Heaton 1975). Asked to write as much as possible in the assigned 45 minutes, the pupils wrote the texts by hand. Being hand-written, the texts were submitted without the standard digital spelling check of word processing programs.

The pupils’ instructions were as follows:

Please write a story in English about the pictures. The title of your story is The Tiger. Write about what you see, but also feel free to use your imagination. You may, for instance, want to write about the following:

Who is the main person in the story?

How did he get to the mountain location?

Why is he here?

What happens after the last picture?



Figure 1: The picture story

The teachers' instructions read as follows:

Please ask your pupils to write a story about the pictures. They should do this without cooperating with each other, although they may use dictionaries. Encourage them to use their imagination in addition to describing the events in the pictures (please see the note to the pupil). The title of the story is The Tiger. Please allow the pupils up to 45 minutes to write their stories.

By using pictures as a starting point for the writing process, these can function as scaffolding for both advanced and basic language proficiency levels. A picture narrative offers the less proficient language learners the help they may need for basic reporting of the action portrayed in the pictures, while the more advanced learners can use their imagination to add more features to their stories as they wish.

4.5 The methods

4.4.1 Introduction

A quantitative method was chosen for this thesis. As the texts produced by the pupils were written, a quantitative count of grammatical and lexical features seemed a relevant approach. Since the pupils were relatively young (aged about 12), and were also writing in their second language, a holistic assessment approach appeared to be less valid than a quantifiable one. Typical characteristics of quality writing, such as text organization, a sense of traditional narrative elements and reader consciousness, are not to be automatically expected from young second language learners. Young writers can still be capable of the said characteristics of mature writing, but perhaps not to a degree which validates a holistic approach as a main focus.

The study focused on measures of fluency and complexity. While the fluency measures are text production- orientated only, such as word count, the lexical and grammatical complexity perspective helps avoid a production-only angle, but instead also studies the writers' language sophistication. Fluency was examined with regard to each corpus. Complexity, both grammatical and lexical, was also investigated, as Wolfe-Quintero et al. (1998) suggest that these two features indicate language variation and sophistication.

Both the fluency and complexity measures of this thesis rely strongly on the T-unit, which consists of a main clause and all its modifiers, included any embedded or attached clauses (Hunt 1965:25) (see section 3.6.1). Each T-unit can be considered an individual item of written production, with a subject and a finite verb. Any subordination will be preserved in the unit, and will count towards an examination of the grammatical complexity of both corpora.

4.4.2 Fluency

After having reviewed several research studies regarding fluency, Wolfe-Quintero et al. (1998: 14) state that '[t]he primary way to measure fluency is to count the number, length, or rate of production units. Production units include sentences, T-units, clauses and phrases'. According to Larsen-Freeman (1978:444), as cited in Wolfe-Quintero et al. (1998:14), word

production is linked to proficiency levels. The more units accessed and produced, the higher the proficiency level. For the purpose of this thesis, fluency levels were measured by counting words, counting T-units, and calculating the average length of T-units.

The mean number of words per text was calculated by adding up all the words within T-units and dividing them by the number of texts in each corpus. The word count had some restrictions with regard to which words were included. Any words outside the T-units were excluded, for example headlines and signatures. Contracted forms were counted as one word (e.g. *don't*). Incomprehensible words, Norwegian words, exclamations and greetings (e.g. *oh* and *hello!*) were not included in the count. A text distribution according to the text length was also included, organizing the texts into categories of 'low', 'average' and 'high' text length. The three categories used were texts from 30-170 words (low), 171-250 words (average), and 251-406 (high). In this way it was possible to measure the spread of text length in the two groups.

To find the average number of T-units, all the T-units were identified, added up, and divided by the number of texts. Mean T-unit length was calculated by dividing the number of words by the total number of T-units. Additionally, a T-unit length distribution for each corpus was included in the fluency measures. The four categories of words per T-units were as follows: 7,3 words or less, 7,4 to 9 words, 9,1 to 10 words, and 10,1 words and more. To examine how the T-units were lengthened, the average number of coordinations within T-units for each corpus was also included in the analysis. Mean T-unit coordination was found by summing up the said coordination occurrences and dividing that number by the number of texts.

4.4.3. Grammatical complexity

The grammatical complexity measures in this thesis are of two types: those which analyse the production items, e.g. subordinate clauses per T unit and subordinate clause type ratio, and noun phrase modification.

Wolfe-Quintero et al. (1998:69) suggest that grammatical complexity means grammatical variation and sophistication. Foster and Skehan (1996:303), as cited in Wolfe-Quintero et al. (1998:69), suggest that development of grammatical complexity can be defined as '*progressively more elaborate language*', i.e. that the syntactic patterns show more

variation. Grammatical complexity is attained when the written output shows a wider variety of production units. Writing at a high level of grammatical complexity could mean being able to produce both simple and more elaborate sentence structures. In contrast, a less grammatically complex writer would produce more limited and less varied sentence structures (Wolfe-Quintero et al. 1998:69).

T-unit length can be a measure of fluency, as in the present study, but it can also be used to examine grammatical complexity. By adding subordinate clauses to a T-unit, or increasing the noun phrase complexity, a T-unit can be made longer and at the same time more grammatically complex. However, T-units can also be lengthened by coordination of repeated elements within T-units. However, this would not influence complexity, only fluency. Additionally, subordinate clause production and noun phrase modification can be a sign of grammatical complexity, as well as a method of lengthening T-units, and therefore influence fluency. Measures of fluency and complexity can consequently be problematic to separate. This is also acknowledged by Wolfe-Quintero et al. (1998:25). For the purpose of the thesis, measures based on the T-unit are included in both the fluency and grammatical complexity analysis.

In this thesis, grammatical complexity levels were measured by counting subordinate clause types (adverbial, relative and nominal clauses) and finding the average number of subordinate clauses per text for each corpus. The analysis also included calculating the mean subordinate clause ratio per T-unit. Additionally, the distributions of each subordinate clause type were also computed. Finally, a calculation of the average number of complex noun phrases per text was also included.

To find the mean number of subordinate clauses per text for the two corpora, the subordinate clauses were added up. The totalled number was then divided by the number of texts. The ratios of subordinate clauses per T-unit were found by identifying the total number of subordinate clauses in each corpus and dividing them by the number of T-units. The ratios of each subordinate clause type to the total number of subordinate clauses were calculated by adding each type up and dividing by the total number of subordinate clauses. In addition, a categorization of subordinate clause distribution was performed. The categories were low (0-4 subordinate clauses), average (5-9 subordinate clauses) and high (10-16 subordinate clauses) per text.

Finally, adverbial clauses and nominal clauses were sub-categorized according to type. Adverbial clause types included *time*, *reason*, *purpose*, *result*, *condition*, *manner*, *concession* and *place*. Nominal clause types comprised of *that* clauses, *to-infinitive* clauses, *-ing* clauses

and *other* clauses. The *other* category contained *wh-interrogative* clauses and nominal *relative* clauses (Quirk et al., 1985).

Complex noun phrases, i.e. noun phrases containing pre- and/or post-modifiers, can be a sign of written language maturity and consequently be used to differentiate between proficiency levels (Hunt 1965:114). The average number of complex noun phrases per text for each corpus was included in the grammatical complexity analysis. Pre-modifiers included common adjectives (e.g. ‘*small* stick’), proper adjectives (e.g. ‘*American* tiger’), participle adjectives (e.g. ‘*irritated* man’) and genitives (e.g. ‘the *boy’s* bag’). The counting of pre-modifiers excluded determiners, such as definite and indefinite articles (*a/an*), determiners of possession (e.g. *his*), demonstration (e.g. *this*), interrogation (e.g. *which*), quantifying (e.g. *many*) and numerals (e.g. *two*). Post-modifiers included prepositional phrases (e.g. ‘the tiger *by the rock*’), relative clauses (e.g. ‘the man *who worked at the inn*’), appositions, and non-finite clauses (e.g. ‘the boy *walking down the road*’). Regarding relative clauses, these were registered both as subordinate clause types and as post-modifiers to noun phrases. To calculate the average number of complex noun phrases per text, the number of pre- and post-modifiers for each corpus were added up and divided by the total number of texts. As a separate measure, noun phrases with both pre-and post-modification were identified and counted.

4.4.5 Lexical complexity

In second language writing research, one of the main assumptions is that “[s]econd language learners write more grammatically and lexically complex sentences as they become more proficient” (Wolfe-Quintero et al. 1998:4). As language learners progress through proficiency stages, they are expected to show a more varied vocabulary in addition to a greater syntactic variation.

For this thesis, different lexical word types were counted in order to examine the lexical complexities of the sample texts. The word types included were verbs, nouns, and adjectives. In order to calculate the average number of the lexical words types per text for each corpus, all the word types were added up and divided by the number of texts in each corpus. The mean number of each lexical word type per text was computed through

separately adding up all the words in each category and dividing that number by the total number of texts.

The word type counting was given certain restrictions. Only lexical verbs were counted, and excluded the verbs ‘to be’, ‘to have’ and ‘to do’. However, if the verb *to have* was used to express ownership, as in the example ‘he *has* two rocks’, it was included in the lexical verb type count. Common nouns were counted, but proper nouns were not (e.g. *John*). Compound nouns were counted as two separate nouns unless they were incorrectly joined into one noun (e.g. *water fall* versus *waterfall*). If unequivocally combined, they were counted as a single noun type. Additionally, compound head nouns which occurred on their own elsewhere in the texts were only counted once (e.g. *mountain inn* versus *inn*). The adjective types count included nominal adjectives (e.g. ‘he found some sticks and used the *big*’), common adjectives (e.g. ‘a *scary* tiger’) and participle adjectives (e.g. ‘a *walking* stick’). As proper nouns were not included in the noun type count, proper adjectives (e.g. ‘*American* hunter’) were not included in the adjective count. However, they were registered as pre-modifiers to noun phrases. Furthermore, other initially positioned adjective types in noun phrases (e.g. ‘an *old* man’) were also registered as pre-modifiers.

4.4.6 Validity and reliability

Dörnyei (2007) defines validity in quantitative research as two-dimensional; namely concerned with validity of both the research in itself and the measures. Research validity refers to ‘whether the outcome is indeed a function of the various variables and treatment factors measured’. In addition, research validity relates to the validity outside the individual study.

Regarding the research validity of the current comparative study of writing, there are some limitations which should be addressed. Firstly, the two corpora of sample texts are relatively small to offer a definite conclusion about the connection between language learning approaches and writing skills. However, even though the two corpora consist of only 43 texts each, an analysis can perhaps offer a possible connection between the two approaches.

Furthermore, it should be acknowledged that the specific details of each teaching approach have not been available for the author to examine. The sample texts were not collected by the author herself, but by a member of the English department at the University

of Stavanger at a time before the author had enrolled at the university. Subsequently, the author did not have the opportunity to conduct supplementary teacher interviews for either teaching approach, which would have added richer data. As a result, the classroom particulars of the two teaching practices were limited and the written material provided by the pupils were the main source of information, in addition to what the researcher was informed about the origin of the texts.

However, there is no apparent reason to assume that the two corpora should not be representative for their specific approach, for example regarding overall academic abilities. Both corpora contained texts at equally different proficiency levels. Such a proficiency spread is not uncommon for Norwegian classrooms, as they traditionally comprise of pupils of different academic aptitudes (i.e. Norwegian classrooms are mixed ability classrooms – streaming is not allowed). Also, the two sets of texts are comprised of texts from different school classes. The control group consisted of pupils from three classes and two different schools, and the experimental group texts were produced by three different classes in the EYLP school. Since the samples from each corpus did not come from one school class only, the chance of encountering one particularly gifted group of learners was possibly reduced.

As to measurement validity, it relates to whether the applied method actually measures what it is supposed to. In the current study, measures to assess written language development were applied. Validity was ensured by using quantifiable measures that have previously been used by numerous scholars (e.g. Hunt 1965; Drew 2010; Raaen and Guldal 2012). The current study is therefore anchored in an academically acknowledged research tradition within the field of corpus studies of written development.

Reliability, as defined by Silverman (2005:224), cited by Dörnyei (2007), concerns the ‘degree of consistency with which instances are assigned to the same category by different observers or by the same observer on different occasions’. The reliability of the quantifiable text analysis was strengthened by a second researcher checking the analysis measures in a random sample of the texts studied.

5.0 Analysis of the texts

5.1 Introduction

This chapter presents the results of the research. It consists of three main sections: fluency analysis (section 5.2), grammatical complexity analysis (section 5.3), and lexical complexity analysis (section 5.4). The sections address the main research question of this thesis: what are the similarities and differences in the two corpora in terms of fluency and grammatical and lexical complexity?

In the comparison of the two corpora, fluency is measured through word count, T-unit count and T-unit length. Measuring the average number and distribution of subordinate clauses and noun phrase modification investigates grammatical complexity. Counting and totalling the average lexical word type frequency for each corpus examines lexical complexity. The two corpora will be referred to as:

- C (Control group)
- E (Experimental group)

The data presented in sections 5.2 to 5.4 is mainly quantitative, but will also include several examples from the sample texts in these sections. These examples will provide a qualitative aspect to the otherwise quantitative data presentation.

5.2 Analysis of fluency measures

This section is based on a fluency analysis of the two corpora, each consisting of 43 texts. Containing of a total of three sub-sections, subsection 5.2.1 contains a fluency analysis regarding text length, while subsection 5.2.2 examines fluency with regard to the number of T-units produced. Finally, subsection 5.2.3 reviews T-unit length. This section also contains a subsection presenting how T-units were lengthened.

In this study, fluency is measured by counting the number of words and T-units per texts, and calculating the average T-unit length by dividing the number of words by the

number of T-units. The measures presented in the tables are the mean scores of each feature. The maximum and minimum fluency measures per corpus are also included.

5.2.1 Text length

Wolfe-Quintero et al. (1998:14) present fluency as ‘(...) not a measure of how sophisticated or accurate the words or structures are, but a measure of the sheer number of words or structural units a writer is able to include in their writing within a particular period of time.’ The general assumption is that the more fluent a writer is, the more writing he or she is able to produce.

Table 1 shows the average number of words per text, including the minimum and maximum scores in the corpora. The percentile difference from the control group to the experimental group is also included.

Table 1: Average number of words in the corpora

Measure	Control group (n=43)	Experimental group (n=43)	Difference
Words per text	187	228	+21,9 %
Maximum	349	406	+57 words
Minimum	26	102	+76 words

Using the fluency measure of sheer word production, the experimental group showed a higher degree of fluency compared to the control group. The texts written by the control group had an average text length of 187 words. Comparatively, the experimental group produced an average of 228 words per text, showing that the pupils in the experimental group on average wrote 21,9% more words on the same writing task within the identical time frame. The control group wrote texts ranging in length from 26 words to 349 words. For the experimental group, the shortest texts consisted of 102 words and the longest text contained 406 words. Compared to the control group, the pupils in the experimental group writing the least and the most words produced considerably more words.

Table 2 shows the distribution of text length in the two corpora. The text length is here divided into three groups: low, average and high. Low text length is characterized as 30-170 words, average text length is 171-250 words, and high text length as 251-406 words. The percentages of each category within the two corpora are placed in brackets.

Table 2: Low, average and high text length categories (percentages in brackets)

Category	Control group (n=43)	Experimental group (n=43)
30-170 words	15 (34,8%)	12 (27,9%)
171-250 words	22 (51,1%)	11 (25,5%)
251-406 words	6 (14%)	20 (46,5%)

Table 2 shows a more detailed fluency difference between the two corpora than in Table 1. The difference within the low text length group is fairly marginal compared to the other categories, even though it also shows a superior fluency score among the experimental group. 6,9% more pupils from the control group wrote a ‘short’ text consisting of 30-170 words. The most notable difference is the distribution of high text length, where 46,5% of the experimental group wrote texts ranging from 251-406 words. Only 13,9% did the same in the control group, meaning 32,5% more experimental group pupils wrote texts belonging in the longest text category.

Further, regarding the spread in text length, the maximum number of words in the control group was 349 words. Only one more control group pupil wrote over 300 words, which means that only two pupils in the control group wrote 300 words and over. In comparison, ten pupils in the experimental group produced texts of over 300 words. Additionally, only the experimental group included a text consisting of over 400 words.

5.2.2 T-unit count

As pointed out in Chapter 3, the number of T-units in a text alone does not discriminate between fluency levels, as T-units differ in length. However, the measure is still included in this section in order to calculate mean T-unit length. Table 3 shows the average T-unit number for each of the corpora.

Table 3: T-units per text

Measure	Control group (n=43)	Experimental group (n=43)	Difference
T-units per text	23,8	27,1	+13,8%
Minimum	3	12	+9 T-units
Maximum	48	49	+1 T-unit

The pupils in the experimental group produced 13,8 % more T-units per text compared to the control group. The mean number of T-units per text in the control group was 23,8, while the experimental group produced an average of 27,1 T-units per text. However, the words per text measure increased more than T-units per text. The experimental group clearly wrote more words, 21,9% more words per text, while the number of T-units per text did not increase in identical proportion to the increase in number of words per text. This resulted in longer T-units, as shown in the next sub-section.

5.2.3 T-unit length

Table 4 indicates the average T-unit length of each corpus.

Table 4: Average T-unit length

Measure	Control group (n=43)	Experimental group (n=43)	Difference
T-unit length (words per T-unit)	7,8	8,6	+10,2%
Minimum	3,7	6,1	+2,4 words
Maximum	10,8	12,6	+1,8 words

On average, the experimental group wrote T-units that were 10,2% longer than those in the control group. The mean T-unit length in the control group consisted of 7,8 words, while the experimental group produced an average of 8,6 words per T-unit. The pupil with the shortest

average T-unit length in the control group wrote 3,7 words per T-unit, while the pupil with the shortest T-unit length in the experimental group produced on average 6,1 words per T-unit.

The following T-units are examples of average length T-units for each corpus.

[1] John kick's his head with a rock (7 words) (C9).

[2] One day I was walking at the night (8 words) (E1).

The following T-units are examples of shorter-than-average T-units.

[3] Nobody was out (3 words) (C29).

[4] He ate some food (4 words) (E6).

Both groups contained several pupils who wrote longer-than-average T-units, but the distribution of the highest average length T-units for each corpus was not identical between the two corpora.

Table 5 shows the T-unit length distribution for both corpora. The T-units have been placed into four categories: 7,3 or fewer words, 7,4 - 9 words, 9,1-10 words, and 10,1 and more words.

Table 5: T-unit length distribution

Words per T-unit	Control group (n=43)	Experimental group (n=43)
7,3 or fewer words	15 (34,8%)	11 (25,5%)
7,4-9 words	18 (41,9%)	10 (23,2%)
9,1-10 words	6 (13,9%)	15 (34,9%)
10,1 and more words	4 (9,3%)	7 (16,3%)

T-unit length distribution shows distinct discrepancies between the two corpora. The largest of the above categories of the control group texts (an average T-unit length between 7,4 and 9 words) related to 41,9% of the texts. Comparatively, 23,2% of the experimental group texts belonged in the same category. 34,9% of the experimental group texts averaged a T-unit length of 9,1-10 words compared to 13,9% texts of this length in the control group. The difference in distribution is also noticeable in the other categories. The experimental group had 9,3% fewer texts in the shortest T-unit category (7,3 or fewer words) and 7% more texts in the longest T-unit length category (10,1 or more words). 7 texts from the experimental

group contained an average T-unit length of 10,1 words or over, while the corresponding number from the control group was 4. The maximum average T-unit length for both corpora was 12,6 words. Three pupils attained that T-unit length score, two pupils in the experimental group and one from the control group.

5.2.3.1 How T-unit length was increased

As a language learner becomes more proficient, the number of words per T-unit can be assumed to increase (Wolfe-Quintero et al. 1998:25). Several Norwegian studies have supported this notion, for example Drew (2010) and Vigrestad (2006). Vigrestad (2006:44), comparing the English writing development of pupils in Norwegian and Dutch grade 7 and 10 found that T-unit length increased with maturity. The Norwegian pupils in the study increased their average T-unit length by 22,5% from 7th grade to 10th grade, advancing from 8 words to 9,8 words respectively.

For the purpose of this thesis, ways in which T-unit length was increased will primarily focus on added subordinate clauses and modified noun phrases. Frequencies of subordinate clauses and noun phrase modification are addressed more detailed later in the current chapter, but in order to examine T-unit length, both measures need to be taken into account. However, one of the ways writers made their T-units longer concerns fluency only, not complexity. Hunt (1965:93) addresses this as coordination inside T-units, which will be explained later in the current subsection.

The adding of subordinate clause to a T-unit makes the T-unit longer, i.e. more words are added. However, the two texts with the longest T-units in each corpus differ significantly in the number of subordinate clauses they contain. The experimental group text with the longest T-units contains 9 subordinate clauses, while the corresponding control group text only has 5. This suggests that the T-units from the experimental group text were to a greater degree lengthened by adding subordinate clauses.

The following T-unit is taken from the experimental group text with the longest average T-unit length (12,6 words). It contains three subordinate clauses.

[5] After the trip the circus owner was so happy *that Paul found his tiger that he got a free ticket to see the circus* (24 words) (E10).

Example [5] contains the nominal 'that-clause' *that Paul found his tiger*. It also contains the adverbial clause of result *that he got a free ticket* and the adverbial clause of purpose *to see the circus*. At 24 words, the T-unit is also lengthened by the two pre-modified noun phrases *circus owner* and *free ticket*, consisting in the first of the noun-as-adjective *circus*, pre-modifying the head noun *owner*, and in the second, of the adjective *free*, pre-modifying the head noun *ticket*.

Even though T-unit length can, in addition to indicate fluency, provide information on grammatical complexity, words per T-unit does not automatically differentiate between proficiency levels regarding grammatical complexity. T-units can be of similar length but show different levels of complexity. The following examples show how T-units can be equally long, but be of dissimilar grammatical complexity.

[6] So they went up to the mountains (7 words) (E4).

Example [6] contains 7 words and consists of a single clause. The noun phrase *the mountains* is simple with no pre- or post-modification.

[7] He liked *to climb in the mountain* (7 words) (E2).

Example [7] also consists of 7 words and the simple noun phrase *mountain*, but additionally it contains a subordinate clause. Specifically, *to climb in the mountain* is a nominal infinitive clause.

A high number of T-units does not necessarily reflect a high level of proficiency to the extent that T-unit length does. To illustrate this point, the experimental group text with the shortest average T-unit length can be more closely examined. Mean T-unit length for this particular text is 5,2 words per T-unit. Comprising 32 T-units, the text contains 20,2% more T-units than the mean corpus score. As a result, the text scores highly with regard to T-unit number, but the average T-unit length is considerably shorter than the mean corpus score (37,4% shorter). The following example from the text is typical in this respect.

[8] It was a long trip (5 words) (E5).

Example [8] consists of 5 words and is a simple clause. It contains the adjective *long*, which pre-modifies the head noun *trip*.

In addition to adding subordinate clauses, modifying noun phrases can result in longer T-unit length, as is the case with the two longest texts in the experimental group. At 406 and 344 words, they both include 49 T-units. Although the longest text has 50 more words than the second-longest (18% more words), the number of T-units is identical. T-unit length is therefore slightly greater in the longest text, 8,3 words compared to 7 words in the other text.

Since these two texts both contain 10 subordinate clauses each, comparatively longer T-units could be the result of more frequent noun phrase modification. The text with the longest mean T-unit length contained 13 complex noun phrases, while the corresponding text contained only 6 complex noun phrases. More than twice as many complex noun phrases in one text compared to the other resulted in longer mean T-unit length. The following examples are taken from the said texts and serve to illustrate how noun phrase modification can affect T-unit length.

[9] The path were a *tiny* path, *beside of a large mountain* (11 words) (E38).

[10] Bob's friend Lisa grabed her jacket and went outside the house (11 words) (E42).

Example [9] is a simple clause made up of 11 words and contains a complex noun phrase both pre- and post-modified. The head noun *path* is pre-modified by the adjective *tiny*, and post-modified by the prepositional phrase *beside of a large mountain*. Additionally, the noun *mountain* is pre-modified by the adjective *large*. Example [10] is equally long, consisting of 11 words also. The coordinating conjunction *and* connects the two clauses *Bob's friend Lisa grabed her jacket* and *went outside the house*. Because the subject is omitted in the second clause, referred to by Quirk (1985:883) as a type of grammatical omission, the T-unit cannot be divided into two. It remains one T-unit even if it is syntactically made up of two main clauses connected with *and*. Withn regard to noun phrase modification, the complex noun phrase *Bob's friend Lisa* contains the s-genitive *Bob's*, pre-modifying the head noun *friend*. *Lisa* is an appositive post-modifier of the head noun *friend*.

In addition to increasing use of subordinate clauses and complex noun phrases, T-units also were made longer by consolidating main clauses, i.e. intra T-unit coordination. Such consolidation does not affect T-unit complexity, only fluency. The following example is taken from the control group text with the longest average T-unit length (10,8 words) and shows two occurrences of intra T-unit coordination.

[11] and he left the luggage at the room and went down to the reception and asked for a map to his trip (22 words) (C3).

Syntactically, example [11] is not particularly sophisticated, even though it is long. It consists of 22 words and is therefore considerably longer than the average T-unit length of the control group corpus (7,8 words). As previously mentioned, T-units can be lengthened by, for example, adding subordinate clauses or lengthening noun phrases. Example [4] contains neither of these features. However, it is twice lengthened by the coordinating conjunction *and* in order to show a chronological order of events. Having occurred twice within the same T-unit, this clause coordination supports the notion that T-unit length alone does not always reflect grammatical complexity. The T-unit contains many words, but is still not syntactically complex, i.e. contains no subordinate clauses. However, Hunt (1965) examined different ways of intra T-unit coordination and found that T-unit consolidation by using *and* increases with maturity (Hunt 1965:93). To further investigate T-unit length, specifically how they are made longer without adding subordinate clauses or noun phrase modification, the use of *and* to coordinate main clauses within the T-units were also counted. Table 6 shows the frequency of such intra T-unit coordination.

Table 6: Coordination within T-units by the conjunction ‘and’

Measure	Control group (n=43)	Experimental group (n=43)	Difference
Coordination within T-units using ‘and’ per text	2,7	3,7	+37%
Maximum	11	9	-2
Minimum	0	0	No difference

The average experimental group text contained 3,7 *and*-coordinations within T-units, while the control group on average produced 2,7 *and*-coordinations within T-units. The experimental group produced 37% more intra T-unit coordinations using *and*. To illustrate the difference between using the said T-unit consolidation and not consolidation, the following examples [12] and [13] can be used.

[12] *Jimmy turned his head and saw the scary tiger on a rock* (C26).

[12] consists of 12 words. i.e. it is 4,2 words longer than the average control group T-unit. It contains two main clauses coordinated with the conjunction 'and', namely 'Jimmy turned his head' and 'saw the scary tiger on a rock'. Since the subject in the second main clause, Jimmy (or the corresponding pronoun *he*), is omitted, the content is recognized as a single T-unit. Comparatively, a less mature writer who does not consolidate main clauses often produces shorter T-units (Hunt 1965:93). The following T-unit examples are taken from a text with no occurrences of intra-T-unit coordination.

[13] The tiger jumped down from a rock. The tiger hit the tree (E16).

Since the T-units in [13] contain the same subject ('the tiger'), they could be combined into one T-unit by adding the coordinating conjunction 'and' between them. In the second clause, the subject would then be omitted. In the process of such consolidation, some words are deleted. For the purpose of this current T-unit example, 'the tiger' would be deleted from the second T-unit and the conjunct 'and' would be added. In the process of consolidation, The T-unit would be relatively long but still simple, i.e. not containing any subordinate clauses. However, more would be said in one T-unit compared to pre-consolidation. Consolidation can therefore increase the T-unit length, but at the same time have a comparatively reducing effect on the fluency measure *T-units per text*. Moreover, a T-unit containing two main clauses is more succinct than two shorter T-units, and is more likely to be produced by a mature writer (Hunt 1970a:198).

As shown in the abovementioned presentation of ways in which T-units were lengthened, i.e. how that affected the fluency level, the fluency measure of T-unit length also relates to grammatical complexity. There is a fuzzy distinction between the two with regard to T-unit length, as fluency level and complexity level can influence each other reciprocally. The difficulty of fluency and complexity measures separation is also acknowledged by Wolfe-Quintero et al. (1998:25).

5.3 Grammatical complexity

The two corpora have also been analysed according to grammatical complexity. The analysis is based on a subordinate clause count and noun phrase modification frequency. According to Quirk et al. (1985:987), a complex sentence is made up of one main clause and one or more subordinate clauses. However, the sentence as a production unit in this thesis has been

replaced by Hunt's (1965) T-unit. This section will therefore present the average subordinate clause number per text and the subordinate clause ratio per T-unit for both corpora. As previously explained in the above subsection, the T-unit can be used to measure both fluency and complexity, blurring the lines between the two. The three subordinate clause types *adverbial*, *nominal* and *relative*, will be subject to individual analysis, and the adverbial and nominal clause types will also be subcategorized. Lexical complexity of each corpus will be based on a word count of verb, noun and adjective types.

5.3.1 Subordinate clauses per text and T-units

According to Wolfe-Quintero et al. (1998:69), grammatical complexity is based on the ability to produce grammatically varied and sophisticated language. Regarding grammatical complexity, Wolfe-Quintero et al. (1998:69) claim that it entails 'a wide variety of both basic and sophisticated structures'. In this thesis, grammatical complexity is measured through a subordinate clause count and through an analysis of adverbial, relative and nominal subordinate clause distribution. Noun phrase modification is also included as a grammatical complexity measure.

Table 7 shows the mean subordinate clause number per text and the mean subordinate clause ratio per T-unit.

Table 7: Subordinate clauses per text and subordinate clause ratio per T-unit

Measure	Control group (n=43)	Experimental group (n=43)	Difference
Sub. clauses per text	5,5	7,9	+43,6%
Sub. clauses per T-unit ratio	.23	.29	+26%
Minimum	0	0	No difference
Maximum	16	16	No difference

The most apparent dissimilarity in Table 7 is the degree to which the experimental group produced more subordinate clauses compared to the control group. The experimental group produced on average 43,6% more subordinate clauses per text compared to the control group.

The mean subordinate clause number in the control group was 5,5 subordinate clauses per text, while the corresponding subordinate clause number in the experimental group was 7,9. The minimum and maximum subordinate clause number was identical in both groups, namely zero and 16 respectively. However, four pupils in the control group produced no subordinate clauses, while this applied to just one pupil in the experimental group.

The following is an example of a T-unit containing a subordinate clause. The average subordinate clause number of the text from which the example is taken is representative for the control group as a whole (5 subordinate clauses total).

[14] Later it came three hunters *which was hunting on the tiger* (C6).

Example [14] contains the relative clause *which was hunting on the tiger*. The relative clause post-modifies the head noun *hunters*.

In categorizing subordinate clause distribution, the results show that there are some differences between the corpora in terms of greater subordination in the experimental group. Table 8 presents an overview of subordinate clauses in three different clause number categories: low (0-4), average (5-9), and high (10-16).

Table 8: Low, average and high subordinate clauses per text categories (percentages in brackets)

Measure	Control group (n=43)	Experimental group (n=43)	Difference
Low (0-4)	17 (39,5%)	8 (18,6%)	-20,9%
Average (5-9)	21 (48,8%)	19 (44,1%)	-4,7%
High (10-16)	5 (11,6%)	16 (37,2%)	+25%

The largest category of the control group texts and the experimental group texts both belong in the ‘average’ category with respect to subordinate clauses. Ranging from 5 to 9 subordinate clauses per text, 48,8% of the control group texts and 44,2% of the experimental group texts fit into this category. However, the remaining categories of ‘high’ and low’ subordinate clause distribution show the biggest dissimilarities. More than one-third (37,2%) of the experimental group texts contained between 10-16 subordinate clauses, but only marginally

more than one in ten control group texts (11,6%) belonging in this category. Regarding the 'low' category, the control group had almost twice as many texts in the range of 0-4 subordinate clauses: 17 texts as opposed to the 8 experimental group texts. Furthermore, 4 texts in the control group had no subordinate clauses at all, while only one text in the experimental group contained simple clauses only.

Both corpora show marked differences between the language learners. The text with the by far highest subordinate clause number in the control group contains 16 subordinate clauses. The types of subordinate clause types are varied, and several T-units contain up to three subordinate clauses. Even with a high level of clause complexity, the subordinate clause patterns are nonetheless quite similar in parts of the text, as exemplified in the following examples.

[15] Steve wasnt sure /*what he was meining*/ /*because nobody told him*/ /*that it was tigers in the Seattle mountains*/ (C30).

[16] Steve didnt get afraid /*because the boss of the hotell tauld him*/ /*that it was hunters*/ /*out looking for the tiger*/ (C30).

Example [15] contains 3 subordinate clauses. Firstly, it contains the nominal relative clause *what he was meining*, followed by the adverbial clause of reason *because nobody told him* and finally the nominal *that*-clause *that it was tigers in the Seattle mountains*. Example [16] is syntactically somewhat similar, with the same number of subordinate clauses and two of the same subordinate clause types. The first subordinate clause is the adverbial clause of reason *because the boss of the hotell tauld him*. Then follows the nominal *that*-clause, *that is was hunters*, and lastly the non-finite relative clause *out looking for the tiger*, post-modifying the noun phrase *hunters*. In total, the text C30 contains 7 adverbial clauses (4 clauses of reason, 1 clause of purpose, 1 clause of condition, and 1 clause of time), 2 relative clauses and 7 nominal clauses (6 *that* clauses and 1 nominal relative clause).

5.3.2 Subordinate clause type distribution

Table 9 shows the subordinate clause type distribution (adverbial, relative and nominal subordinate clauses) in the two corpora. The percentages of the total subordinate clause distribution are presented in brackets.

Table 9: Distribution of subordinate clauses in the corpora

Subordinate clauses per text	Control group (n=43)	Experimental group (n=43)	Difference
Total	5,5	7,9	+43,6%
Adverbial	2,6 (47,7%)	4,0 (50,6%)	+53,8%
Relative	1,5 (27,4%)	1,9 (24,0%)	+26,6%
Nominal	1,4 (24,9%)	2,0 (25,3%)	+42,8%

The experimental group produced 43,6 % more subordinate clauses than the control group, showing a greater level of syntactical complexity in this respect. The percentile subordinate clause distribution regarding clause type, however, is fairly similar for each corpus. The adverbial clause was the most common subordinate clause type in both corpora, with an average number of 2,6 adverbial clauses per text in the control group and 4 adverbial clauses in the experimental group, which was a considerable difference. A total of 12 texts contained no adverbial clauses (9 in the control group and 3 in the experimental group), while two texts in the experimental group had 10 adverbial clauses each. The text with the maximum number of adverbial clauses in the control group was 8.

The following are examples of adverbial subordinate clauses in the corpus.

[17] *When he had walked for an hauer* he wanted to stop and make a camp (C9).

[18] And he sat under a tree *to get some food and some rest* (E19).

Example [17] contains the adverbial clause of time *when he had walked for an hauer*, while example [18] contains the adverbial clause of purpose *to get some food and some rest*.

The second most frequent subordinate clause type for the control group was relative clauses, averaging 1,5 relative clauses per text. The corresponding relative clause number for the experimental group was 1,9, meaning that the experimental corpus contained 26,6% more relative clauses than the control corpus.

An example of a relative clause is the following:

[19] The people *who own the tiger* was very happy for this (C22).

Example [19] contains the relative clause *who own the tiger*. It post-modifies the complex noun phrase *the people*. With regard to relative clauses in the sample texts, these have been registered both as a relative clauses and as a post-modifiers of noun phrases.

Nominal clauses were the second most frequent type of subordinate clause in the experimental group. For the control group, nominal clauses had the lowest occurrence in the corpus. Still, the percentile distribution was almost identical, with around one in four subordinate clauses being nominal clauses for both sets of texts. As with the other subordinate clause types, the total number of nominal clauses was greater in the experimental group than in the control group. The average number of nominal clauses per control group text was 1,4 compared to 2,0 nominal clauses per text for the experimental group, meaning that the latter produced 42,8 % more nominal clauses.

A typical nominal clause is shown in [20].

[20] And then dey askt Phill to join them (C20).

Example [20] contains the nominal infinitive clause *to join them*.

5.3.3 Adverbial clauses

The adverbial clause types represented in the sample texts are clauses of *time*, *reason*, *purpose*, *result*, *condition*, *manner*, *concession* and *place*. Table 10 represents adverbial clause distribution both in number and percentage in relation to each other.

Table 10: Adverbial clause types (percentages of the total number of adverbial clauses for each corpus in brackets)

Adverbial clause types	Control group (n=43)	Experimental group (n=43)	Difference
Total	113	174	+53,9%
Time	53 (46,9%)	98 (56,3%)	+84,9%
Reason	33 (29,2%)	29 (16,7%)	-13,7%
Purpose	12 (10,6%)	24 (13,8%)	+100.0%
Result	9 (7,9%)	7 (4,0%)	-28,5%
Condition	2 (1,8%)	7 (4,0%)	+5 clauses
Manner	2 (1,8%)	5 (2,9%)	+3 clauses
Concession	0	3 (1,7%)	+3 clauses

Place	2 (1,8%)	1 (0,6%)	-1 clause
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The four adverbial clauses with the highest occurrence are identical in distribution for both corpora. After clauses of *time*, the adverbial clauses with the highest occurrence in both corpora were *reason*, *purpose* and *result* respectively. The total proportion of the remaining adverbial clause types, i.e. *condition*, *manner*, *concession* and *place*, is so small that they will be addressed in section 5.4 regarding holistic impressions.

Adverbial clauses of *time* occurred most often, making up 46,9% of the control group adverbial clauses and 56,4% of the clauses in the experimental group. Hunt (1965:80) studied adverbial clause subordinating conjunctions at grade levels four, eight and twelve, and found that the most common way of beginning an adverbial clause was with the subordinating conjunctions *when* and *because*. Similar to Hunt's study, *when* was also the most common subordinating conjunction of an adverbial clause in both corpora in the present study.

The following example is an example of the most frequent subordinate clause type in each corpus, the adverbial clause of time.

[21] The sky was very dark, *when I arrived at the little village* (C29).

Example [21] contains one subordinate clause, namely the adverbial clause of time *when I arrived at the little village*. The clause is introduced by the subordinating conjunction *when*.

However, the subordinating conjunctions in the control group were by far less varied compared to the experimental group. *When* introduced 80% of the control group adverbial time clauses, but 60,8% of the experimental group's adverbial time clauses. The control group contained two other subordinating conjunctions in adverbial clauses of time, namely *before* (2 occurrences) and *while* (1 occurrence). In contrast, the experimental group produced eight additional types of adverbial time clause subordinating conjunctions other than *when*, specifically *before* (14), *after* (9), *until* (7), *while* (4), *as* (1), *last time* (1) and *at the same time* (1).

The following examples show some of these adverbial clause subordinating conjunctions in use:

[22] *While the tiger was down*, James hit him in the head with a big rock (E20).

[23] *Before he started*, he came to a small restaurant (C27).

Example [22] contains the subordinating conjunction *while*, which introduces the adverbial clause of time *While the tiger was down*. Example [23] includes the subordinating conjunction *before*, introducing the adverbial subordinate clause of time *Before he started*.

In addition, the experimental group corpus contained several time-specifying adverbial phrases modifying subordinating conjunctions of *time*, including *not long after*, *just before*, *right after/before*, *first when* and *always when*. The following example shows a typical example of this particular feature.

[24] *Not long after* he heard al those noices, he saw a sweet little ape (E6).

Example [24] includes the adverbial phrase *not long*. It modifies the subordinate conjunction *after*, which in turn introduces the adverbial clause of time *after he heard al those noices*.

Adverbial clauses of *reason* were the second most frequent adverbial clause type in both corpora, making up 29,2% of the control group adverbial clauses and 16,9% of the experimental group adverbial clauses. As the only clause type more frequently used in the control group than the experimental group, the former produced 12,1% more adverbial clauses of reason compared to the latter. One control group text contained 3 subordinate clauses, all of which were adverbial clauses of reason and which are presented in the following examples:

[25a] But he dont kath me *because I take a stone and broke his nake*.

[25b] and they clapping of hands *because he take a very dangers tiger*.

[25c] He fick 10000 money *because he take the tiger*.

(C18)

The main subordinating conjunction for adverbial clauses of reason for both corpora was *because*. This also correlates with Hunt's (1965:80) research of the most frequently used subordinating conjunctions in grade four to six, with *because* among the most common subordinators. In the present study, adverbial clauses of reason were almost exclusively introduced by the subordinating conjunction *because*. Out of a total number of 62 adverbial clauses of reason, only one subordinating conjunction per corpus introduced the clauses of reason differently. The subordinating conjunctions used were *as* and *for there*.

The following example shows the *as* subordinating conjunction from the experimental group text.

[26] There was no point in doing it *as* the tiger was unconscious (E17).

Containing the adverbial clause *as the tiger was unconscious*, [26] also includes the nominal ing-clause *in doing it*.

The other non-*because* subordinating conjunction was produced by a pupil in the control group and was as follows:

[27] Be careful *for there* is a dangery tiger in the mountain (C15).

While acknowledging that two T-units can hardly reveal general proficiency differences between two sets of texts, it can still be interesting to take a closer look at them and possibly problematize the written language analysis through them. Quantifiably, these two T-units are seemingly similar with regard to both measures of fluency and grammatical and lexical complexity. They are close to identical in length, with [26] containing 11 words and [27] containing 12 words. They both contain one subordinate clause, namely an adverbial clause of reason. Lexically, they both contain the head noun *tiger*. However, the noun phrase in the control group text is pre-modified by the misspelled adjective *dangery*, most likely supposed to be *dangerous*. The prepositional phrase *in the mountains* post-modifies the complex noun phrase *dangery tiger in the mountains*, resulting in a both pre- and post-modified noun phrase.

When reviewed holistically, there are some noticeable differences between the T-units from each text. Regarding accuracy, example [26] is error-free and the subordinate clause has been correctly used. It contains idiomatic language in the form of the expression *no point in* and the relatively low-frequency adjective *unconscious*. Only four texts in the control group contained this adjective, while the corresponding adjective *dangery* (i.e. dangerous) in [27] occurred in 19 of the 43 texts of the control group. This shows that even though both T-units contain an adjective type, the adjective in the example from the experimental group is rarer in relation to the other sample texts.

5.3.4 Nominal clauses

For the purpose of this thesis, nominal subordinate clauses have been divided into four categories (Quirk et al. 1985:1048-1068) The categories are *that* clauses, *to-infinitive* clauses, *-ing* clauses and *other* clauses. The *other* category is made up of *wh-interrogative* clauses introduced by *wh*-interrogative pronouns such as *why* and *what* and nominal *relative* clauses introduced by, for example, *where*. Table 11 shows the distribution of the different nominal clause types and their percentile ratio to each other.

Table 11: Nominal clause type distribution (percentage in brackets)

Nominal clause types	Control group (n=43)	Experimental group (n=43)	Difference
Total	55	86	+56,3%
That	26 (47,3%)	39 (45,3%)	+50,0%
Infinitive	20 (36,3%)	18 (20,9%)	-11,1%
-ing	4 (7,3%)	3 (3,5%)	-33,3%
Other	5 (9,1%)	26 (30,2%)	+21 clauses

Nominal *that*-clauses were the most frequent nominal clause type in both corpora, making up 47,2% of the control group nominal clause types and 45,3 % of the experimental group. Comparatively, the experimental group produced 56,3 % more nominal clauses than the control group (86 compared to 55 respectively).

The second most frequently produced nominal clause type for both corpora was *nominal infinitive* clauses. These clauses made up 20,9% of the experimental group nominal clauses and 36,3% of the control group nominal clauses. A typical example of a nominal infinitive clause is as follows:

[28] But James managed *to avoid it* (E20).

The third most common nominal clause was the nominal *-ing* clause, as illustrated in example [29].

[29] He *picked up* a stick and started *hitting* against the tiger with it (E38).

The most evident nominal clause distribution differences lie in the *other*-category. Almost one third of all the experimental group nominal clauses belongs in said category. The control group on the other hand produced less than one *other*-categorized nominal clause per ten nominal clauses. As a result, the *other*-category seems to particularly represent greater nominal clause sophistication in the experimental group.

In the *other*-category, the most common nominal clause type was *wh*-interrogatives for the experimental group. The experimental group produced 17 such clauses, while the control group corpus only contained two. Typical examples of such a clauses are illustrated by the following:

[30] And Jon asked *why nobody was out* (C5).

[31] Paul went inn and asked *what that sign meant* (E10).

Example [30] contains the nominal *wh*-interrogative clause *why nobody was out*, while [31] contains the nominal *wh*-interrogative clause *what the sign meant*. Both clauses function as objects of the verb *asked*.

Even rarer than the *wh*-interrogatives, one pupil in the experimental group showed further nominal clause sophistication with a *yes-no* interrogative clause (Quirk et al. 1985:1053), as shown in the following example:

[32] Pompel ran over there and asked *if he could sleep in there* (E14).

Example [32] contains the nominal *yes-no* interrogative clause *if he could sleep in there*. The subordinate clause is introduced by the subordinating conjunction *if*. Often, *if* is used to introduce adverbial clauses of condition, but as this clause resembles an indirect question it is considered a *yes-no* interrogative clause (Quirk et al. 1985:1053).

5.3.5 Relative clauses

Relative subordinate clauses were the second most frequent type of subordinate clause in the control group. The mean number of relative clauses per text was 1,5 in the control group and 1,8 in the experimental group. As a whole, the experimental group wrote 21,8% more relative clauses than the control group. This finding coincides with Tjerandsen (1995:51), who argues

that relative clauses are more frequent among mature writers compared to the less mature ones. Vigrestad (2006:51) also supports this claim, as her comparative study of Norwegian and Dutch 7th and 10th graders showed that relative clause production differentiated between proficiency levels.

The following contains an example of a non-finite post-modifying relative clause which was common in both corpora.

[33] A man *named Philip* was going to hunt a tiger (C1).

Example [33] contains the non-finite past participle relative clause *named Philip*, which post-modifies the head noun *a man*.

[34] Then he see the tiger *coming that way* (C9).

Example [34] contains the present participle relative clause *coming that way*, post-modifying the head noun *the tiger* in the complex noun phrase *the tiger coming that way*.

5.3.6 Noun phrase modification

Noun phrase modification can be a sign of grammatical complexity (Drew 2010).

Additionally, noun phrase modification also influences fluency, as it lengthens the T-units.

According to Hunt (1965), making phrases longer in one of the main ways to make T-units longer, in addition to adding more subordinate clauses. Increased subordination will therefore also influence fluency measures such as T-unit length and further complicating the distinction between fluency and complexity.

Table 12: Noun phrase (NP) modification

Measure	Control group (n=43)	Experimental group (n=43)	Difference
Complex NPs	7,1	8,6	+21,1%
Pre-modifiers	4	5,2	+30,0%
Post-modifiers	3,1	3,4	+9,6%

The experimental group produced more complex noun phrases than the control group, with an average of 8,6 complex noun phrases per text compared to the control group average score of 7,1. Therefore, the experimental group texts contained 21,1% more complex noun phrases than the control group.

This result correlates with the findings of Drew's (2010) longitudinal study of the English writing of Norwegian pupils as they advanced from grades 4 to 6. Drew's results showed that the occurrence of complex noun phrases increased with maturity. Starting with the average number of 4,6 complex noun phrases per text in the 4th grade, the progression up to 7th grade showed the pupils averaging 11,4 complex noun phrases per text.

Pre-modifiers were more frequent than post-modifiers in both corpora, with the experimental group averaging 5,2 pre-modified noun phrases per text. For the control group, the corresponding mean score was 4, meaning that the corpus produced 30% less pre-modified noun phrases.

The noun phrase pre-modifications in the present corpora consisted of common adjectives, proper adjectives, nouns as adjectives, 's genitives, and participle adjectives. The following examples illustrate the said modifications.

[35] And the he saw the *dangerous* tiger (C22).

[36] Bob woke up early a *Sunday* morning (E33).

[37] But the *village* hunters wasen't happy because they woulde't kill the tiger only take a closer look at it. (E28)

[38] Tim tried to hit the *tigers* head with his *walking* stick (E17)

Example [35] contains the common adjective *dangerous* as a pre-modifier of the head noun *tiger* in the complex noun phrase *the dangerous tiger*. In example [36], the proper noun *Sunday* pre-modifies the head noun *morning* in the complex noun phrase *a Sunday morning*. Example [37] shows the noun *village* functioning as a pre-modifier to the head noun *hunter* in the complex noun phrase *the village hunters*. Example [38] contains the genitive *tigers* (although missing the apostrophe 's) as a noun phrase pre-modifier to the head noun *hunters* in the complex noun phrase *the tigers head*, and the participle adjective *walking*, which pre-modifies the head noun *stick* in the complex noun phrase *his walking stick*. Genitives as pre-modifiers were fairly infrequent in both corpora, possibly due to that they are rare in

Norwegian compared to English. Participle adjectives as pre-modifiers were limited in both corpora to the exact combination *walking stick*, as shown in [38].

Post-modification of noun phrases was less frequent than pre-modification in both corpora. The experimental group achieved a slightly higher average score of post-modified noun phrases per text at 3,4 compared to the control group mean score of 3,1. The number of noun phrases, both pre- and post-modified, was almost identical in both corpora, with the experimental group producing 27 such modified noun phrases and the control group 26.

A typical noun phrase with both pre- and post-modification is shown in [39].

[39] Once upon a time there was a very *danger* tiger *at the top of the mountain* (E1).

Example [39] contains the misspelled adjective *danger*, which pre-modifies the head noun *tiger* and the post-modifying prepositional phrase *at the top of the mountain*. Additionally, the intensifying adverb *very* modifies the adjective *danger*.

In some cases, pupils further increased their noun-phrase complexity by using two pre-modifiers, as in [40]:

[40] One time little Tomy decide to take trip up in the high tiger mountain. (E19).

In example [40], the head noun *mountain* is pre-modified by both the adjective *high* and the noun *tiger* in the complex noun phrase *the high tiger mountain*.

5.4 Lexical complexity

According to Wolfe-Quintero et al. (1998:101-104), measuring lexical complexity is connected to vocabulary examination, for example by counting lexical word types, such as verbs, nouns and adjectives. The general assumption is that a more varied and sophisticated vocabulary indicates superior lexical proficiency compared to a more repetitive lexis.

5.4.1 Distribution of lexical word types

Figure 1 shows the results for the average number of verb, noun and adjective types in total per text across the corpora.

Figure 1: Mean total lexical word types per text

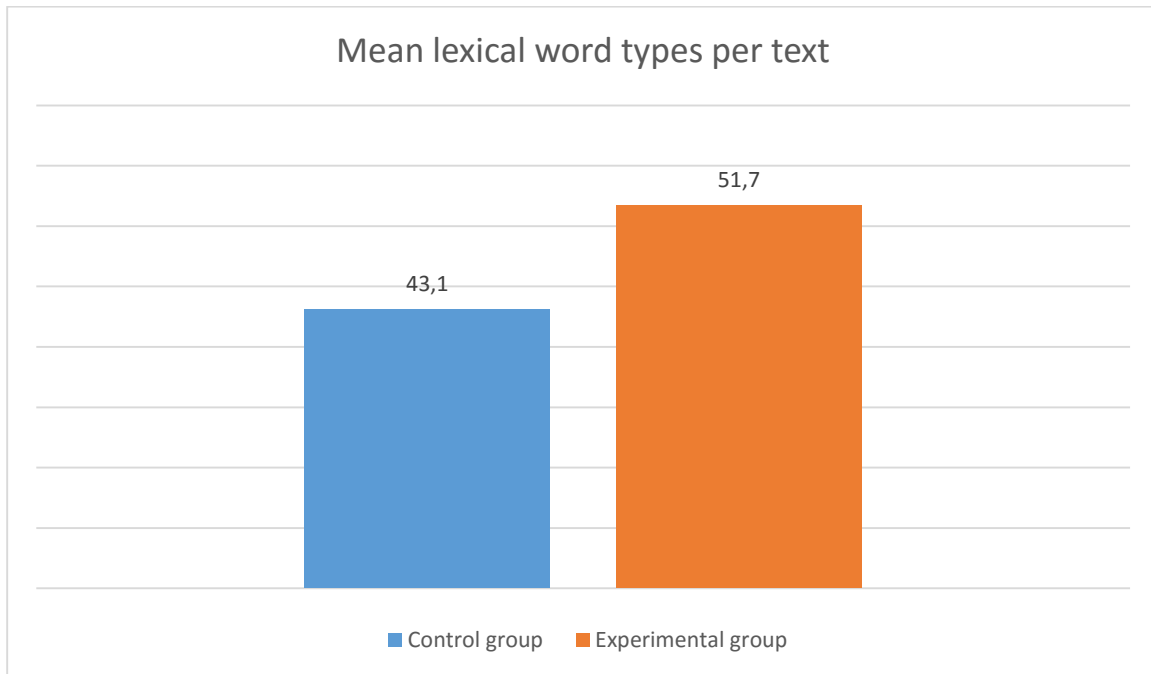
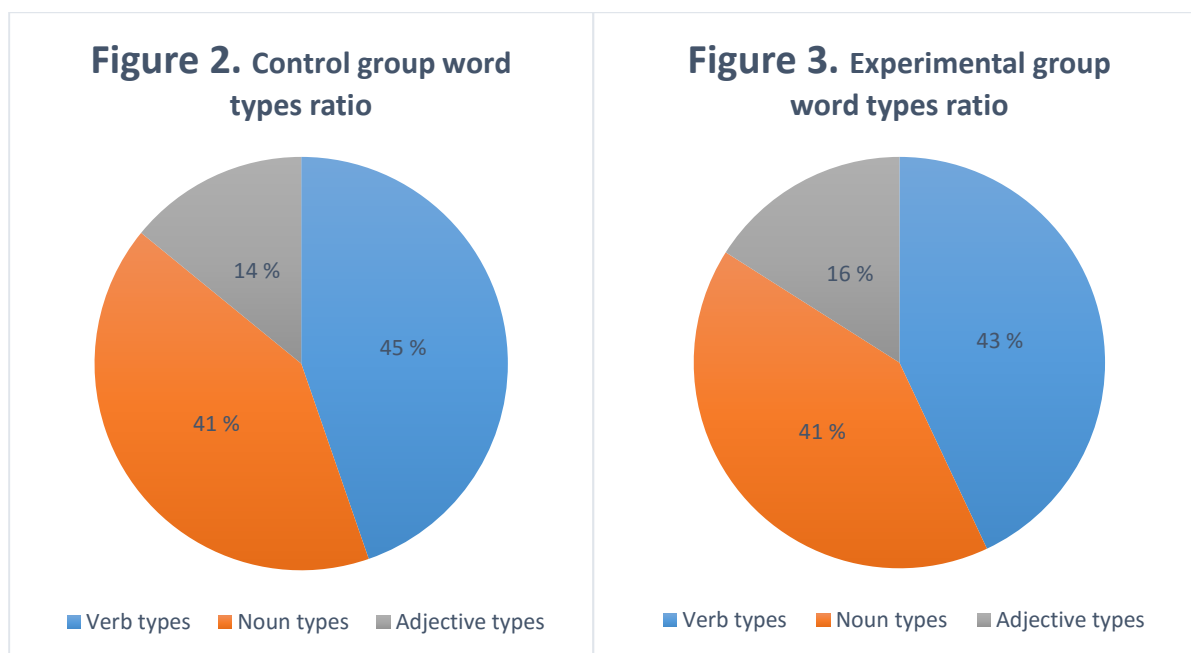


Figure 1 shows that the control group on average produced 43,1 lexical word types within the appointed lexical categories verb, noun and adjective types. The experimental group averaged at 51,7 lexical word types per text. Consequently, the experimental group wrote 8,6 more lexical words (19,9%) per text compared to the control group.

When comparing the difference in total word production to total lexical word production, the difference in fluency and lexical complexity is markedly similar between the two corpora. The experimental group wrote 21,9% more words overall, and 19,9 % more lexical words in the form of verb, noun and adjective types. This result suggests that the lexical superiority of the experimental group parallels the fluency superiority of the same corpus.

Figures 2 and 3 show the percentile lexical word distribution of the control group and the experimental group.

Figure 2 and 3: Percentile word types ratios of verbs, nouns and adjective types.



As Figures 2 and 3 illustrate, there are only minor differences in the lexical word type distribution between the two corpora. With both sets of texts, verb types make up the largest proportion of word types: 45% for the control group and 43% for the experimental group. Noun types account for 41% of the word types for both corpora, while the number of adjective types is noticeably lower compared to noun and verb types. Accounting for the smallest word type group for both corpora, adjective types make up 14% of the control group word types and 16% of the experimental group.

5.4.2 Verb types

Table 13 compares the verb types in the two corpora.

Table 13: Verb types per text

Measure	Control group (n=43)	Experimental group (n=43)	Difference
Verb types per text	19,3	22,3	+15,5%
Maximum	33	38	+5 types
Minimum	4	8	+4 types

The mean number of lexical verb types per text for the control group was 19,3 while the experimental group averaged 22,3 verb types per text, resulting in a difference of 15,5% in favour of the experimental group. The following examples illustrate the use of lexical verb types in the two corpora.

[41] He told me I could sleep here, and pointed me to a direction (E32).

[42] The man sleeps (C33).

Example [41] contains the lexical verb types *told* and *sleep*, excluding the modal auxiliary verb *could*. Example [42] contains only the verb type *sleep*.

5.4.3 Noun types per text

Table 14 compares the noun types in the two corpora.

Table 14: Noun types per text

Measure	Control group (n=43)	Experimental group (n=43)	Difference
Noun types per text	17,7	21,1	+19,2%
Maximum	44	35	-9 types
Minimum	3	7	+4 types

The experimental group produced an average of 19,2% more noun types per text compared to the control group. The average control group text contained 17,7 noun types, while the experimental group averaged 21,1 noun types per text. Regarding maximum scores, a pupil in the control group achieved the highest number of noun types at 44. Seeing as the minimum number within that corpus was 3 noun types, the difference between the top and bottom scores is considerable. As a result, the control group maximum score is 14 times higher than the minimum.

The following examples are taken from a control group text which scored close to the mean noun type score of 17,7 (17):

[43] And at the *evening* he took a *brake* under a *tree* (C36).

[44] The *tiger* was over him (C36).

As the pupil's writing task was inspired by pictures telling a story about a tiger hunt, many nouns described what was seen on the pictures. Typical high-frequency nouns were for example *tiger*, *mountain*, *rock*, *tree* and *man*.

Some pupils were rather sophisticated in their choice of nouns, and produced relatively low-frequency nouns.

[45] And *promises* is promises (E2).

[46] And the man get a *reward* for killing the big tiger (C1)

[47] And he left his *luggage* at the room and went down to the *reception* and asked for a *map* (C3)

Examples [45], [46] and [47] contain the nouns *promises*, *reward*, *luggage*, *reception* and *map*, which do not occur, or hardly occur, in other sample texts.

5.4.4 Adjective types per text

Table 15 compares the adjective types in the two corpora.

Table 15: Adjective types per text

Measure	Control group (n=43)	Experimental group (n=43)	Difference
Adjective types per text	6,1	8,3	+ 36%
Maximum	13	21	+8 types
Minimum	0	0	No difference

Adjective types occurred the least in both corpora. As shown in Table 15, the experimental group produced an average number of 8,3 adjective types per text. Comparatively, the control group produced 36% fewer adjective types at 6,1 per text.

A typical adjective type is illustrated in the following example.

[48] He was afraid of any tiger (C31).

Moreover, several of the texts contained multiple adjectives as noun phrase pre-modifiers, as shown in the following examples:

[49] One day a *nice young* man came to a saloon in Mississippi (C8).

[50] I hear a *loud* and *weird* noise (E13).

Furthermore, there were considerable differences between the maximum and the minimum adjective types scores. Three control group texts and one experimental text contained no adjectives at all. The control group text with the most adjective types contained 13 types, while the experimental group text with the most adjective types contained 21. To give further examples of the adjectives produced, the adjective types from the texts with the highest adjective type frequency is presented in the following paragraph (spelling errors were corrected by the author).

The control group text with the most adjective types contained these adjectives: *darkest, dangerous, long, best, beautiful, excited, tired, good, strong, afraid, great, angry, and asleep* (N32). The following adjectives were included in the experimental text with the highest adjective type frequency: *young, difficult, hot, beautiful, old, little, careful, lovely, big, strong, happy, kind, tired, yellow, hungry, scared, angry, smart, left, heavy, and proud* (C9). As seen from the two lists, the adjectives produced were both descriptive in terms of abstract concepts relating to personal feelings, e.g. tired, angry and happy, and adjectives describing concrete, physical appearance, e.g. big, yellow and beautiful.

Overall, a lexical word type count as a potential method of differentiating between lexical complexity levels can be seen in relation to a study carried out by Drew (2010). In his longitudinal study of young Norwegian language learners' written language development, the mean number of verb, noun and adjective types was also calculated as a way of measuring lexical complexity. Drew's calculation of verb, noun and adjective types found that as the pupils progressed from 4th to 6th grade, they consistently included more lexical word types in their writing. The most frequently produced lexical word type was nouns, followed by verbs and adjectives. Even though the two corpora examined for this thesis contained more verb types than noun types, the general results of Drew's study coincide with the findings of the current study.

6.0 Discussion

6.1 Introduction

The present chapter discusses the findings of the written text analysis presented in Chapter 5. The English texts were produced by two groups of Norwegian 7th grade pupils who had participated in two different literacy approaches: the textbook approach and the Early Years Literacy Program (EYLP). The findings from the analysis are interpreted in the light of theory and previous research, and discussed according to the main research question:

- What are the similarities and differences in the two corpora in terms of fluency and grammatical and lexical complexity?

The discussion is organized thematically, i.e. the findings regarding fluency and complexity are separated. Furthermore, the findings concerning complexity are subcategorized into grammatical and lexical complexity. The quantifiable measures and subsequent analysis of fluency and complexity are sometimes difficult to separate and discuss in isolation, so there may be occurrences of overlapping during the discussion. The chapter is divided into six main sections: fluency (section 6.2), grammatical complexity (section 6.3), lexical complexity (section 6.4), comparing the two approaches with regard to methods and practices (section 6.5), the effects of reading on writing (section 6.6), and affective factors (section 6.7).

Regarding related research, Drew's (2010) longitudinal study of Norwegian 4th, 5th and 6th graders' writing is particularly relevant for the current thesis. Just like the experimental group in the current thesis, the pupils in Drew's study also participated in the EYLP program. Additionally, the fluency and complexity measures which Drew used were also applied for the purpose of the current thesis. Therefore, Drew's (2010) study is referred to several times in the discussion.

6.2 Fluency

The two corpora of texts were analysed with regard to fluency, which was measured through calculating the average number of words per text, the average number of T-units, and average

T-unit length. When comparing the results for the current thesis, the experimental group scored markedly higher in all three measures of fluency, namely 21,9% more words per text, 13,8% more T-units and 10,2% longer T-units compared with the control group. Specifically, the experimental group's texts were on average 41 words longer than the control group's texts, and their average T-unit length was 0,8 words longer than the control group's (8,6 words and 7,8 words respectively). The experimental group produced on average more T-units per text, longer T-units and the comparatively longer text length was therefore a result of both more and longer T-units. Furthermore, the measure of main clause coordination inside the T-unit by the use of the coordinating conjunction *and* is the only T-unit lengthening measure strictly related to only fluency. According to Hunt (1970:197), 8th graders are more inclined than 4th graders to coordinate main clauses within T-units, i.e. the use the coordinative conjunction *and* to consolidate two main clauses can be a sign of maturity. The average number of *and*-coordinated main clauses within a T-unit for the control group was 2,7. The corresponding number for the experimental group is 3,7, i.e. the experimental group show a greater tendency of main clause consolidation. Moreover, the other measures of written development, both fluency and complexity, can coincide with each other. The control group text with the most frequent intra-T-unit coordination contained 11 such occurrences. Coinciding with having the highest clause coordination within a T-unit of the control group, the aforementioned text also scored roughly 50% above average in all other measures, both in fluency and grammatical and lexical complexity. The overall above-average scores relate to Hunt's hypothesis that more mature writers tend to consolidate main clauses in their T-units by using the coordinating conjunction *and*.

In relation to T-unit length as possibly corresponding with proficiency levels, the findings of the current thesis coincide with Hunt's (1965) aforementioned mentioned study of comparing the writing of English native speaker pupils in grades 4, 8 and 12. The mean T-unit length for each grade was in turn 8,6 words, 11,5 words and 14,4 words (Hunt 1965:23). As the children matured, they produced comparatively longer T-units.

This language development hypothesis was also confirmed in Drew's (2010) longitudinal, comparative study of how Norwegian 4th, 5th and 6th graders developed their L2 English writing. Fluency measures identical to those in the current study were included in Drew's study, and the results showed that as the pupils became older, they wrote more in terms of words per text, T-units per text and T-unit length (Drew 2010:203-204). The T-unit length for the 4th, 5th and 6th grades was 6,6 words, 6,1 words and 7,1 words respectively.

Interestingly, the difference between the age-similar experimental group and the control group with regard to T-unit length in the present study is actually slightly greater than the T-unit length increase from grade 4 to grade 6 in Drew's study. From grade 4 to 6, T-unit length increased by 0,5 words in Drew's study. The difference in T-unit length for the two corpora in the current thesis was 0,8 words. The experimental group's higher result might suggest that the EYLP can be beneficial to language development to such a degree that it can actually supersede age-related progress.

The pupils in Drew's study were also in the EYLP, as were those in the experimental group of the present study. The comparatively higher T-unit length increase from grade 6 to 7 might therefore indicate that greater reading-related language progression happens between grade 6 and 7 than in earlier grades. From grade 4 to 6, i.e. in 2 years, the average T-unit length increased by 0,5 words. Comparatively, from grade 6 to 7, i.e. in only one year, T-unit length had increased by 1 word (when comparing the EYLP 6th graders in Drew's study with the EYLP 7th graders in the present study). One possible explanation could be reading rate. It seems natural to assume that reading skills progress with age, and as a result of higher reading skills, older students might respond even more positively to reading because they simply are better at it. For example, 7th grade pupils are usually more fluent readers compared to 5th graders. This comparatively higher reading fluency means that they are able to read more in a given time, i.e. the actual language exposure through reading is greater. However, that does not mean that reading is not beneficial for younger language learners, only that the written language development at a relatively higher reading rate could be more marked.

Continuing the discussion on fluency measures, it may also be interesting to consider the text length category distribution in addition to the average words per text. Each corpus consisted of relatively few texts, and the proficiency levels were relatively varied in both corpora. As a result of the large range from the minimum to the maximum scores, combined with the limited number of texts in each corpus, texts which scored either far lower or far higher than the average score might unfairly influence the average result. A way to evade the issue of deviation was to classify the texts into length categories (see section 5.2.1, Table 2). The majority of the control group's texts fell into the 'average' length category (51,1%), while only one in four of the experimental group's texts belonged to the 'average' category. 46% of the experimental group's texts were categorized to be 'high' in text length. The corresponding number for the control group was 14%. In other words, the experimental group had a higher number of texts fitting the 'average' and 'higher' text length category. This suggests a fairly evenly distributed higher level of fluency in the experimental group in this

respect, as opposed to a few superior writers overly influencing the mean fluency score. Even though the experimental group also contained texts which were categorised to be of 'low' length (27,9%), they were slightly fewer than the corresponding category in the control group (34,8%). The comparatively more even text length distribution of the experimental group could indicate that the EYLP does not make all the participants highly fluent writers, but that it nevertheless might have benefited the fluency level of learners at all proficiency stages.

6.3 Grammatical complexity

On the whole, the control group showed less grammatical complexity in their written English output. Comparatively, the experimental group had higher scores in the grammatical complexity measures, i.e. subordination and noun phrase modification. With regard to the average number of subordinate clauses per text, the experimental group produced 46,6% more subordinate clauses compared to the control group. With the regard to the subordinate clause ratio, the control group had a ratio of .23 subordinate clauses per T-unit, while the experimental group had a subordinate clause ratio of .29 subordinate clauses per T-unit.

The tendency of increased subordination as writers mature is confirmed by several studies (e.g. Hunt 1965; Drew 2010; Vigrestad 2006). Hunt (1965:35) found that the ratio of subordinate clauses per T-unit gradually increased as the English native speaker pupils in his study became older. In grade 4, the subordinate clause ratio was 0.30. By the time the writers had reached grade 8, the subordinate ratio had increased to 0.42. Finally, in grade 12, the subordinate ratio was 0.68. Compared to the subordinate clause ratio results of the current thesis, Hunt's participants scored higher at a lower age, most likely because they wrote in English as their first language.

Furthermore, Vigrestad (2006) compared the writing of Dutch and Norwegian 7th and 10th grade pupils. As the writers became older, they also produced more subordinate clauses. Vigrestad (2006:49) found that the Norwegian pupils in her study increased their subordinate clause ratio from .33 in 7th grade (slightly higher than the 7th graders in the present study) to .48 in the 10th grade.

Finally, when comparing the subordinate clause frequency from grade 4 to 6, Drew's (2010) study found that subordination increased with age. The average 4th grade text

contained 0.2 subordinate clauses, and the number increased to 3,3 subordinate clauses per text in the 5th grade. In 6th grade, the average number of subordinate clauses per text had increased to 7 (Drew 2010:209). Drew did not measure the subordinate clause per T-unit ratio.

Concerning subordinate clause distribution, the two groups in the current study had quite similar subordinate clause type distribution, with adverbial clauses being the most frequent, followed by relative clauses, and finally nominal clauses. However, some differences in clause type distribution were revealed after subcategorizing adverbial and nominal subordinate clauses. Firstly, the greatest difference in subordinate clause type distribution between the two corpora concerned adverbial clauses. The experimental group produced 53,9% more adverbial clauses, which is higher than the percentile overall subordination difference of 46,6%. However, the most frequent adverbial clauses for both groups were *time*, *reason*, *purpose* and *result* respectively.

Hunt (1965) observed the same adverbial clause type pattern when he tabulated the subordinating conjunctions introducing adverbial subordinate clauses. Hunt (1965:80) found that the most frequent adverbial clause initiators for all grades were *when*, *if*, and *because* respectively. In the light of the current thesis' adverbial clause categories, the most overall common adverbial clauses in Hunt's study were those of time, condition and reason. However, the frequency order changed as the pupils matured (Hunt 1965:80). Adverbial clauses of time were the most common among 4th graders, but the frequency of these clauses dropped as the pupils became older. While the frequency of adverbial clauses of reason did not change much across the grades, clauses of condition became more frequent among the 12th grade pupils. Hunt (1965:82) speculates whether this change could be attributed to cognitive changes among the more mature pupils, who become more concerned with 'if-then type of thinking' as opposed to 'time orientation' (Hunt 1965:82). Although the occurrence of clauses of condition in the sample texts for the current thesis is relatively small, it can still be worth noting that the experimental group produced almost four times as many adverbial clauses of condition as the control group. However, the control group texts contained more of the third most frequent adverbial clause type, namely 'reason'.

Furthermore, an interesting difference concerning adverbial clauses in the current thesis was that the experimental group's texts contained almost twice as many adverbial clauses of time and purpose as the control group's texts. The adverbial clauses were also, to some extent, slightly more varied. In a total of 8 adverbial clause categories, the experimental group's adverbial clauses were distributed more variedly (see section 5.3.3, Table 8),

particularly in the least frequent categories. However, as previously mentioned, the most frequently produced adverbial clause types followed the same pattern for both groups. This result suggests that the experimental group might have had slightly greater subordinate clause variation than the control group, but most noticeably they seem to have had easier access to the most commonly used subordinate clause types.

Concerning the second most frequent subordinate clause category among the sample texts, namely relative clauses, these were found to be differentiating between L1 proficiency levels (Hunt 1965). According to Hunt's (1965) study of the written output of English L1 pupils in grades 4, 8 and 12, the frequency of relative clauses was an indicator of written language proficiency. When comparing adverbial, nominal and relative clause frequencies of the three grades, the relative clause frequency increased the greatest from grade 8 to grade 12.

With regard to the Norwegian 7th grade pupils' writing in English in the current study, Hunt's relative clause hypothesis is not fully applicable. The experimental group did produce more relative clauses than the control group, but the relative clause frequency was not the most marked difference in subordinate clause distribution. The experimental group texts contained 42,8% more relative clauses than the control group texts, and 53,9% more adverbial clauses. In Hunt's aforementioned 1965 study, he found that relative clauses increased with maturity (Hunt 1965:78).

English relative clauses are introduced by *which*, *who*, *that* or *zero*, while the corresponding Norwegian relative pronoun is *som*. Both Norwegian and English relative clauses post-modify noun phrases, so they are syntactically similar even if the initial pronoun in English offers more lexical variation. Relative clauses, along with adverbial clauses and nominal clauses, are available to both low- and high proficiency writers, possibly due to its structural familiarity to L1. However, but the experimental group produced markedly more of all subordinate clause types, particularly relative and adverbial clauses.

Lastly, the least frequent subordinate clause category for each corpus was nominal clauses. Nevertheless, the experimental group texts contained 26,6% more overall nominal subordinate clauses than the control group. In contrast, Drew (2010) found that nominal clause types were the most common subordinate clause type for the 4th, 5th and 6th grade Norwegian pupils' written English. The percentage of nominal clauses increased with each grade (Drew 2010:209). In contrast, Vigrestad (2006) reported that from grade 7 to grade 10, the Norwegian writers in her study actually produced slightly fewer nominal clauses. In its place, the 10th grade pupils wrote slightly more adverbial and relative clauses (Vigrestad 2006:50).

When categorizing the nominal subordinate clauses of the current thesis into subcategories, there were some noticeable differences between the corpora. As with adverbial clauses, the same pattern of greater clause variation among the experimental group also occurred with nominal clauses. While the experimental group produced more nominal clauses than the control group, the nominal clause type distribution was quite dissimilar, i.e. markedly more varied than that of the control group. The most evident nominal clause distribution differences lay in the *other*-category (see section 5.3.4, table 9). Almost one third of all the experimental group nominal clauses were placed in this category, which consists of *wh*-interrogative clauses and nominal relative clauses. The corresponding distribution number for the control group was less than one in ten nominal clauses. Since the experimental group produced 26,6% more nominal clauses than the control group as a whole, the total result suggests a higher level of grammatical complexity in this respect among the experimental group pupils. With that in mind, the *other*-category seems to particularly represent greater nominal clause sophistication in the experimental group. The most frequent nominal clause type in the *other*-category was *wh*-interrogatives. The experimental group produced 17 such clauses, while the control group corpus only contained 2. This result suggests that *wh*-interrogatives could signify written maturity.

After reviewing the writing of 6th grade pupils in his study, Drew (2010:214) remarks about the grade 6 writers that their '[d]evelopment was also evident through better mastery of interrogatives', which could suggest a parallel to the nominal interrogative clause frequency of the experimental group. The common denominator for the pupils both in the current study and the pupils in Drew's study is the EYLP approach. Since one of the main characteristics of the EYLP approach is more reading, including self-chosen material which interests the reader, this structural knowledge might be directly related to input reading. It seems unlikely that the pupils were taught e.g. interrogatives via direct instruction as part of the EYLP approach. According to Krashen's *acquisition-learning* hypothesis (see section 3.2.4), the more likely reason might be that linguistic access to relatively infrequent grammatical structures has been developed through reading-induced subconscious acquisition. Krashen (1984: 20) claims that readers 'are unaware they are acquiring writing competence while they are reading and are unaware of this accomplishment after acquisition has taken place'. However, Krashen's hypothesis do not claim that the positive correlation between pleasure reading and writing is unlimited. Rather, Krashen (1984:21) claims that, in general, skilled writers have often read extensively for pleasure.

In addition to subordinate clauses, noun phrase modification was also included when measuring grammatical complexity. The experimental group produced on average 1,5 more complex noun phrases per text, i.e. noun phrases that had been post- and/or pre-modified, compared to the control group. The difference between the two corpora was most marked with regard to pre-modification, as the experimental group produced 30% more pre-modified noun phrases. Concerning post-modifiers, the difference was less. The experimental group included on average 9,6% more post-modifiers than the control group.

Drew (2003; 2010) also found that noun phrase modification increased with maturity. Drew (2003) found that noun phrase modification among the 7th Norwegian native language writers in his study was more frequent in their L1 than English L2, suggesting that modifying noun phrases can signify language proficiency. Moreover, when comparing the mean frequency of simple and complex noun phrases in the texts written by the 4th, 5th and 6th graders in Drew (2010), the results showed that noun phrase complexity, along with overall noun phrase production, increased with each grade. In grade 4, the average number of complex noun phrases per text was 3,4. In grade 5, the mean score was 4,6. Finally, the grade 6 complex noun phrase frequency was 11,4 per text (Drew 2010:205).

The reason why the experimental group to a greater degree pre-modified noun phrases than the control group in the present study can be related to vocabulary. The most common way to pre-modify a noun phrase in both corpora was by adding a common adjective in front of the head noun. This requires vocabulary in the form of adjective types. Since the experimental group demonstrated a wider vocabulary than the control group, it would be natural to assume that the comparatively higher number of adjective types in the experimental group were used to pre-modify noun phrases to a greater extent. However, the control group also pre- and/or post-modified noun phrases in the same ways as the experimental group, only not as often. The grammatical structure of noun phrase pre-modification by using a common adjective is itself similar in Norwegian and English, so the structure itself is not foreign to Norwegian native speakers. The same goes for post-modifiers in the form of relative clauses, which was a common post-modifier in both corpora. Relative clauses involve the same structure in Norwegian and English and occurred in the majority of texts across both corpora.

6.4 Lexical complexity

As presented in Chapter 5, the experimental group wrote lexically more varied texts compared to the control group, with higher scores in all three lexical word type categories (nouns, verbs and adjectives). The overall difference in lexical word frequency was 19,9% more lexical words types in the experimental group than in the control group. The difference for verb types was the lowest at 15,5%. Next, the experimental group produced 19,2% more noun types than the control group. Finally, the most considerable difference was with regard to adjective types, where the experimental group pupils included 36% more adjective types in their texts than the control group.

With regard to lexical word type frequency, Drew's (2010) aforementioned study showed that as the pupils progressed from grade 4 to 5, and subsequently to grade 6, the frequency of each of the same three lexical word types increased with each school year. The average number of noun types in the 4th grade texts was 9,7. By 5th grade, the average noun type score had increased to 11,4, and in 6th grade it was 22,7. Concerning verb types, the average number for grade 4 was 2,7 verb types per text, 6,7 in grade 5, and 9,7 in grade 6. Finally, adjective types also increased as the pupils progressed from grade 4 to 6. The mean adjective type score per text increased from 2,6 (4th grade) to 4,4 (5th grade) and finally to 6,7 (6th grade).

This lexical development therefore suggests that a comparatively higher lexical word type frequency is connected to language maturity. Since both the experimental group in the current thesis and the participants of Drew's (2010) study were a part of the EYLP, it is likely that they were influenced by the graded reader series used in the EYLP, in addition to the self-chosen texts they read. The graded reader series, for example, contain numerous high frequency words, which could assist the vocabulary learning, as the pupils' reading material may be mirrored in their subsequent writing (Drew 2010).

However, as with the overall subordinate clause type distribution ratio, the lexical word distribution between the two corpora was almost identical. The most evident difference was the overall frequency of the word types, i.e. that the experimental group had access to a larger range of vocabulary, but were quite similar to the control group in the lexical word type ratio. For example, the experimental group's texts did not produce more adjectives compared to verbs or nouns, but the analysis showed rather that all three lexical groups developed in tandem, much like the pupils in Drew's (2010) longitudinal study of pupils in the EYLP.

Furthermore, the experimental group had read many story books as part of the EYLP program, in addition to other genres. As pupils' writing is likely to be influenced by what they read (Elley and Mangubhai 1983; Krashen 1984; Lee and Hsu 2009; Drew 2010), the difference in, for example, adjective types might be a direct result of the said reading, as story books often contain adjective-laden narratives. It could be argued that meaning can be effectively communicated by only using lexical verbs and nouns, along with appropriate function words, such as articles and prepositions. However, adjectives are often seen as linguistic adornment, i.e. they make texts more interesting and embellished. Adjectives do not have a primary communicative purpose in the same way as verbs and nouns often have. This could explain why adjective types were the least frequent lexical word type in both corpora. Adjectives were also the least common lexical word in Drew's (2010) study.

The current sections have addressed the actual similarities and differences in the written output among pupils in the two approaches, namely the experimental EYLP approach and the more traditional textbook approach. However, it seems necessary to examine the two approaches more closely in order to explain why the overall scores were higher in the experimental group.

6.5 Comparing the two approaches with regard to methods and practices

As discussed in the previous section, the written output of the experimental group showed greater fluency, greater grammatical complexity, and greater lexical complexity than the control group. In order to explain these differences, it seems useful to compare the two approaches, namely the traditional textbook approach (control group) and the experimental Early Years Literacy Program (experimental group). The methods and practices of the EYLP are not possible to present in a detailed way, as some particulars were only available to the author through secondary sources, i.e. the members of the University of Stavanger English department who collected the texts. Also, when discussing the textbook approach, the author can only make general assumptions because specific details of the approach in the control schools were not available. The following information on the textbook approach is therefore based on previous research on the said approach, which is a considerable limitation of the thesis. Still, there is no apparent reason why the control group should not, at least, represent

the general characteristics of the textbook approach, as presented by Charboneau (2012; 2013), Drew (2004), Hellekjær (2007) and Gilje (2011).

The main difference between the EYLP approach and the textbook-based approach is arguably the reading practices in each approach. According to Drew (2004:20), most Norwegian EFL teachers, whose primary material is a textbook, base their English teaching on intensive reading practices. Such practices commonly consist of reading relatively short texts with a special focus on language forms, such as structures and vocabulary. The EYLP, on the other hand, incorporates extensive reading to a great degree. The pupils regularly engage in individual self-chosen reading at the reading station in each classroom session, in addition to guided reading at the teacher station, and being read aloud to by the teacher (see section 2.4). These reading activities may be practised in the textbook-based approach as well, but most likely not as frequently, nor as systematically, as in the EYLP. Some of the non-reading EYLP practices, e.g. literacy-promoting games, may also be incorporated in the textbook approach, but most likely not in such an organized and consistent manner.

Gilje (2011) carried out a qualitative study on lower primary school teachers' teaching of reading and found that the textbook was the predominant reading resource among all the teachers in the study (Gilje 2011:92). Furthermore, the majority of the teachers claimed to have a positive attitude to extensive reading in principle, e.g. reading-related activities and self-selection of reading materials. However, this did not influence the majority of the teachers in their actual classroom practices. Citing that the textbook to a large degree ensured that their reading teaching covered the learning objectives set by *LK06*, the majority of the teachers considered the textbook to be 'a vehicle for reading-promoting activities, such as pre- and post-reading activities (...)' (Gilje 2011:93).

Drew (2009) investigated the challenges, advantages and effectiveness of using the EYLP. One of the findings emerging from the study was that it could be demanding on teachers to find appropriate reading material to match the competence level of each student (Drew 2009:119). For teachers in a textbook approach, time constraints may be a factor in explaining why so many teachers preferred the textbook to non-textbook material, such as graded readers. Also, the textbook can offer a safe teaching foundation for teachers. After interviewing primary and lower secondary teachers, Mellegård and Pettersen (2012) found that teachers had 'an absolute trust in the author's and publisher's claim that their textbook puts the curriculum into practice (Mellegård and Pettersen 2012: 214). Moreover, with the implementation of the *LK06* reform, teachers seemed to rely on the textbook to a greater degree compared to in the previous *L97* reform (Mellegård and Pettersen 2012: 216). Because

LK06 is not a method-specific curriculum compared to the previous *L97* curriculum, and thus offers more teacher autonomy, it seems natural that the need for a textbook as a means of covering the curriculum guide, could be even greater than previously.

Furthermore, compared to the textbook approach, the EYLP model requires substantial commitments, both regarding finances and teacher qualifications (Drew 2009:118-119). Financially, the EYLP presupposes large quantities of graded readers, both to meet the differentiated needs of the learners, but also to provide several copies of the same books. In the EYLP, the pupils are divided into homogeneous ability groups, where all the participants need the same book for the guided reading at the teacher station. With regard to the teachers' role in the EYLP, their required ability to differentiate teaching, their organisation skills, assessment work, and ability to interact with pupils, can all be demanding (Drew 2009:119).

6.6 Effects of reading

The following subsections will present the two-dimensional effect of extensive reading and aim to further try to explain the possible reasons why the experimental group scored higher than the control group in the studied measures of writing in the categories fluency, grammatical complexity, and lexical complexity. As discussed in the previous section, the main difference between the two approaches is the comparatively more extensive reading practices of the EYLP. The pupils in the EYLP approach read more, and their reading material was often self-selected and differentiated to a greater degree compared to the textbook approach. In order to explain the effects such reading can have on writing, it seems appropriate to re-examine what kind of effects reading can have on writing.

6.6.1 Reading and its effect on writing

Concerning reading and writing as activities of reciprocity, Grabe (2009:297) asserts that 'the outcome of a reading activity can serve as input for writing and writing can lead a student to further reading resources'. There is reason to believe, therefore, that the amount of reading in the EYLP approach was a likely factor leading to the experimental group outscoring the control group in all the studied measures of fluency and grammatical and lexical complexity. Several researchers have found that extensive reading programs result in comparatively better writing, both in fluency and complexity (e.g. Elley and Mangubhai 1983; Krashen 2004;

Drew 2009). Since the findings show parallel superiority in both fluency and complexity, the results lend themselves to the conclusion that large amounts of reading can be beneficial to overall written proficiency.

The written proficiency of the experimental group was arguably therefore directly influenced by their reading material. Drew's (2010) aforementioned study of the English written development of Norwegian 4th, 5th and 6th graders in the EYLP programme found noticeable linguistic similarities in the pupils' writing and their English reading material, which would have been very similar to the reading material of the pupils in the experimental group of the current study (Drew 2010:214-216). Applying the same measures of fluency and grammatical and lexical complexity to an analysis of the texts in the Wings series of graded reader books read by the pupils in the study, and the corresponding writing they produced, Drew discovered that the gradual language development in the pupils' written output from the 4th to the 6th grade closely mirrored their reading input, both in relation to grammatical and lexical complexity.

When comparing the reading material and the written texts, grammatical complexity was considered by examining subordinate clause frequency. In the 4th grade, the pupils on average wrote 0.2 subordinate clauses per text, while the books contained on average 0.5 subordinate clauses. In grade 5, the pupils' texts contained 3,3 subordinate clauses, while the corresponding books contained on average 3,7 subordinate clauses. By 6th grade, the pupils' inclusion of subordinate clauses exceeded the books. The average grade 6 writer produced 7 subordinate clauses, while the 6th grade books on average contained 3,3.

Regarding lexical complexity, i.e. lexical word type frequency, both noun types, verb types and adjective types increased similarly in both the books the pupils read and in the texts they wrote. For example, in relation to nouns, the 4th grade texts contained 9,7 nouns while the 4th grade books typically included 7 nouns. In the 6th grade, the average text contained 22,7 noun types, while the books contained 18,3 noun types. This lexical word increase pattern for reading input and writing output also applied for verbs and adjectives.

6.6.2 Reading and the affective factor

How a learner feels about a school subject, for example with regard to teaching practices, materials and activities, can influence language learning attitudes, both positively and

negatively (Day and Bamford 1998:25). As the current thesis contains approaches in which reading is one of the main differentiating practices, it also seems relevant to discuss attitudes towards L2 reading, as well as the affective factor in overall language learning.

Affect is explained by Arnold and Brown (1999:1) as ‘aspect of emotion, feeling, mood or attitude which condition behaviour’. It is important to state that no interviews regarding the learners’ attitudes or feelings about the two literacy approaches were conducted because this opportunity was not allowed the researcher. However, it might be possible to suggest a link between approaches and the affective factor by considering research already conducted in this particular field. The interpretations in this section are therefore only tentative, not causative.

With regard to learners’ attitudes, several researchers suggest a link between positive attitudes, e.g. pleasurable experiences with language learning practices, and the positive effect it can have on language learning. Specifically, research by e.g. Krashen (1984) and Yamashita (2013) report a beneficial correlation between extensive reading and reading attitudes.

According to Day and Bamford (1998:26), an extensive reading approach can favourably influence how the learner views L2 reading. The main reason would be that the reading material is often chosen by the learner himself. By selecting their own reading material based on interest, the hypothesis is that this content-motivated autonomy in reading material can lead to positive attitudes toward L2 reading. In contrast to individual reading choices, pupils in textbook approaches often have less flexibility in choosing their own texts. The teacher typically chooses the reading material for the whole group. Less individualized reading material would not necessarily lead to negative attitudes towards L2 reading, but it might not promote positive attitudes to the same degree as free choice would. That is not to say that L2 textbooks do not offer interesting texts, only that not all the texts are likely to match the particular interests of each individual pupil in the class.

The level of reading material difficulty can also have an effect on general L2 attitudes. The graded readers which make up the reading material foundation of the EYLP offer a wide variety of competence levels compared to regular textbooks, which may offer texts at two or three different proficiency levels (Charboneau 2013). The differentiated texts may be both simplified texts or altogether different texts, e.g. poems and songs (Charboneau 2012:63). If the reading is too difficult, i.e. not at the ‘i-1’ level which Day and Bamford (1998:17) suggest for beginner L2 readers, pupils might become frustrated and demotivated. Such a high-anxiety learning situation could lead to what Krashen (1984:21-22) refers to as a high affective filter, i.e. an anxiety-induced metaphorical mental block which can negatively affect

language learning (see section 3.3.1). The availability of appropriately differentiated and interesting reading material to avoid negative L2 attitudes is probably more important to young language learners compared to older learners. Compared to young language learners, adults would most likely acknowledge the advantages which come with L2 proficiency and are therefore more likely to accept the typical frustrations which may come with learning processes, for example boredom or frustration in connection with language comprehension.

The proficiency levels of the pupils in the current study were extremely varied, as reflected in the maximum and minimum scores, and the overall proficiency spread within the groups. Furthermore, there were several pupils in the control group who reached well above the average experimental group scores, just as there were several experimental group pupils who scored well below the majority of the control group. Mixed-abilities classes are the norm in Norway (Drew 2010:217). With that in mind, differentiated reading material seems to be of particular importance (Charboneau 2013:56). According to Drew (2010:217), this wide variation in language levels is one of the biggest challenges facing Norwegian teachers of English. When faced with the enormous task of finding appropriate literacy-promoting tasks and reading material for a mixed-ability class, graded readers can offer comparatively more differentiated reading material than the typical textbook. However, it can be time-consuming to find books with the right level of difficulty to accommodate whole classes, and time constraints were one of the reported issues with the Norwegian primary school English teachers in Gilje's (2011) study, who simply relied on the textbook.

6.7 Teaching implications

Even if the significance of promoting positive attitudes towards reading is known among teachers, they often do not implement measures to consciously and systematically foster a positive attitude in their classrooms (Day and Bamford 1998:24; Gilje 2011). Heathington (1994:199) claims that teachers often choose skills' development over positive attitude promotion, and that choice can have negative effects on the learners' attitude. '[F]orcing students to engage in activities they see as meaningless only drives them to adopt an attitude of hating those engagements and avoiding literacy activities when they leave school' (Heathington, 1994:200). However, assigning textbook tasks instead of extensive reading does not automatically mean that the activities are seen as, or are, meaningless. Moreover,

pupils often like textbooks because it gives the impression of progress as units and chapters are worked through to possible completion (Harmer 2001:304).

If the results of the comparison of the written output in the present study can be attributed to the increased amount of input in the form of more reading, it most likely does not mean that teachers should only be concerned with extensive reading. Neither would such an approach most likely end all classroom frustration and other learning challenges. However, there seems to be a missed opportunity if teachers disregard the potential of extensive reading and its subsequent effects on writing. The EYLP approach incorporates extensive reading and does not use a course textbook, but there can be other ways of incorporating extensive reading without the relatively high level of commitment coming with the EYLP approach. Authentic texts such as magazines, newspapers or digital texts can cater to a variety of interests and competence levels without the financial cost of comprehensive book sets required by the EYLP. However, deviating from the conventional textbook can be taxing on the teacher, and building up an appropriate non-textbook selection takes both time and effort, which seems already to be a prime teacher concern (Mellegård and Petterson 2012:212). Hyland (2003:95) acknowledges the position of the textbook as an item of support for novice teachers in particular, and even experienced teachers may rely on the textbook to the extent that it becomes the entire course (Hyland 2003:95; Mellegård and Petterson 2012:216). Moreover, Hyland (2003:98-99) points to the impracticality of preparing new materials, and claims that a complete textbook rejection is not the solution, even if it might not meet all the teachers' requirements. Nevertheless, teachers need to be realistic as to what a textbook can offer.

A balanced approach could therefore be beneficial, where the textbook provides some core reading texts, in addition to an overview of grammatical structures and other linguistic particularities, but the textbook could be supplemented with self-selected reading material at appropriate ability levels. In spite of the publishers' claims that a textbook might cover all the necessary competence aims, the textbook can be augmented with other resources, such as digital texts.

Conscious attention to the forms of language and vocabulary should not be disregarded altogether. In addition, forming positive attitudes in the L2 classroom is no easy task, but not to take advantage of the L2 attitude-forming possibilities which come with extensive reading might be counterproductive.

A balanced approach (the textbook and extensive reading) could offer both intensive and extensive reading practices, with individual reading combined with a degree of direct instruction to bridge the gap between acquisition and learning, as recognized by Harmer

(1987:4-6), cited in Drew (1998:73): ‘Language classrooms should involve both acquisition and learner activities (...)’ and ‘teachers should both organise activities and material to help pupils acquire language and teach pupils language so that they learn it consciously’. Language classrooms should offer both extensive and intensive reading material to be included in learning situations.

7.0 Conclusion

The aim of this thesis was to compare corpora of written English L2 texts written by two separate groups of Norwegian 7th grade pupils. One group was a part of the experimental Early Years Literacy Program (EYLP), while the other group consisted of pupils in a conventional textbook approach. The main research question was to examine the similarities and differences in the two corpora in terms of fluency, and grammatical and lexical complexity.

The basis for the written language analysis was 43 timed narrative texts written by the learners in each approach, a total of 86 texts. Several of the fluency and grammatical complexity categories relied on Hunt's (1965) seminal T-unit and his following use of the T-unit as a quantifiable measure of written development. The measures applied for evaluating fluency levels were average words per text, the number of T-units per text, and T-unit length. In order to measure grammatical complexity, the average number of subordinate clauses per text, and the average subordinate clause per T-unit ratio were applied. Furthermore, the subordinate clause types were categorised and then analysed in relation to each other. The final category in the grammatical complexity analysis was noun phrase modification frequency. Lexical complexity was based on a frequency count of lexical verbs, nouns, and adjectives types. The average lexical word type score per text for each corpus was calculated, along with the average number of each lexical word type category per text.

When comparing the two corpora, the results revealed that the experimental group showed a comparatively higher level of both fluency and grammatical and lexical complexity compared to the control group. With respect to fluency, the experimental group had markedly higher scores across all the fluency measures. The EYLP pupils wrote longer texts, produced more T-units per text, and their average T-units were longer.

Regarding grammatical complexity, the experimental group showed a higher degree of complexity, i.e. they produced more subordinate clauses per text, and had a higher subordinate clause per T-unit ratio, than the control group. Moreover, the experimental group achieved higher scores across all subordinate clause types in comparison to the control group, i.e. the experimental group wrote more adverbial clauses, nominal clauses and relative clauses. Furthermore, the experimental group showed greater subordinate clause variation in both the adverbial and nominal subcategories. Finally, with regard to noun phrase

modification, the experimental group modified their noun phrases more frequently. Both pre- and post-modification scores were higher compared to the control group.

With respect to lexical complexity, the experimental group produced more lexically dense texts, i.e. their texts overall contained more lexical word types. Specifically, they included more verb types, noun types and adjective types than their control group counterpart.

As the abovementioned main results show, the pupils in the EYLP exceeded the textbook-based control group across all the studied measures of written development. The main differences between the two approaches were reading-related. While the EYLP encouraged extensive reading through the use of a series of graded readers written for English L1 children, in addition to other self-chosen texts, the textbook approach was based primarily on the course textbook, both for reading and other reading-related and language-promoting activities. The consistently higher scores of the experimental group compared to the control group indicate that the amount of reading done by this group seemed to have had a positive effect on their English writing in terms of fluency and grammatical and lexical complexity. The current thesis has contributed to the research on quantitative measures in language learner texts. It has also contributed to the research field by attempting to link reading input to writing output. To supplement previous research related to the written English development of young Norwegian learners in the EYLP approach, the current thesis has contrasted the writing of learners in this relatively experimental approach with those in an approach centring around the textbook, representing the conventional. As far as the author is aware, there is no similar research where the written output of EYLP participants has been compared to the writing of pupils in a textbook approach.

An awareness of alternative ways of teaching English, i.e. that include more non-textbook reading based on pupils' interests and ability levels, is particularly important at the current time. As of 2017, future English teachers will be required to have specialised English education in order to teach the subject at the primary school levels in Norway.

Since the sample in the current thesis was relatively small, a more extensive study would support the findings. Furthermore, there are possibilities to make the research even more valid. Combining a similar analysis of quantitative fluency and complexity measures with teacher and pupil interviews would provide richer data. Such data, particularly regarding the control group, were missing from the current thesis due to circumstances outside the author's control. Information on the specific classroom practices would most likely have made comparing the approaches more valid. Moreover, the sample texts have not been compared in relation to accuracy. It would therefore be interesting to see if the EYLP

participants also wrote more accurately, in addition to more fluently and with greater complexity. Additionally, since previous research has suggested that pupils in extensive reading programs report positive L2 attitudes, it would be interesting to find out if this is also true with Norwegian EYLP participants, for example through questionnaires or interviews. Finally, when compared to EYLP pupils' progress from the 4th to 6th grades in Drew's (2010) study, the 7th grade EYLP pupils in the present study showed comparatively greater progress from grade 6 to grade 7. This suggests that extensive reading might have an even greater effect among older learners. It may therefore be useful to conduct a longitudinal study of extensive reading among lower secondary learners to find out if this is the case.

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