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Master's thesis

**Enhancing Reading Development and
Comprehension for Secondary Students with
Dyslexia and/or RD: Investigating teacher
practices and differentiation strategies**

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2LUOPP3

2024

Acknowledgments

In 2021, I moved in with my friend and fellow student Ida, who just happened to be an English language and literature student with crippling dyslexia (her words, not mine). Ida Graduated last year with flying colors after five years of hard work. Around the same time that I moved in with Ida, I met my boyfriend Harald, who also happened to have dyslexia. Harald was writing his master's thesis at the time, and I had the privilege of wading through and spell-checking 40 pages of his thesis. That process brought me to the realization that, firstly, I have had it incredibly easy when it comes to reading and writing, and lastly, I knew very little about the diagnosis and all of the things it entails. Both Ida and Harald are now excellent and inspiring teachers from whom I have learned and keep on learning a lot.

Furthermore, I would like to thank my very patient supervisors, Rebecca Anne Charboneau Stuvland and Barry Patrick Kavanagh. Rebecca gave me a lot of excellent and constructive feedback. Barry became my supervisor after easter but managed to catch up and has since then gotten ahead of me.

Thank you to my fellow peers, especially this bunch who sat with me at the library and worked in companionable silence (sometimes): Helena B. B. Gabrielsen, Dagny Mogen, Marthe Sveen, and Hannah Antvort.

Thank you to the participants who volunteered for this thesis. I greatly appreciated your help, and I learned a lot.

I would also like to thank my family because... that is what they do at the Oscars.

Abstract

This thesis is a study of teachers' reading practices and strategies when differentiating between 8th to 11th-grade students with dyslexia and/or reading disabilities. The reading practices and strategies in question are meant to target the reading comprehension and reading development of students with Dyslexia and/or RD. Theory and previous research on this matter are limited, and there seems to be a gap in research regarding teacher practices and strategies when it comes to differentiating for dyslexic students and/or students with RD. These are the research questions that this thesis answers and helps shed light on:

- *Which reading practices and strategies can/do teachers use to differentiate for 8th-11th grade students with dyslexia and/or RD in the English subject?*
- *Where have they acquired the practices and strategies that they apply?*

The thesis data is semi-structured interviews with five teachers (three from schools accredited as dyslexia-friendly). The collected data is discussed in light of two theories on reading development, the Zone of Proximal Development, and a collection of different kinds of previous studies. This paper concluded, amongst other things, that there is a lack of knowledge and resources for teachers of older students with dyslexia and/or RD. When the teachers were asked what kind of practices they had or what kind of strategies they applied, their efforts proved to be lacking. This thesis also concludes that teacher education in Norway does not thoroughly cover the topic of Dyslexia and other reading disabilities, which is one of the places where most of the teachers stated that they have learned their practices, along with resources and courses from Dysleksi Norge. There are differences in knowledge and practices in the teachers who work in the dyslexia friendly schools, as they differentiate more for these students and seem to be more aware of the particulars of the dyslexia disability (however, none of the teachers seemed aware of any other reading disability than dyslexia). Most of the teachers expressed concern about being unable to do enough, or not having done enough, for students with dyslexia.

Sammendrag

Denne masteroppgaven er en studie av læreres lesepraksiser og strategier når det kommer til tilpasset opplæring for elever på 8. til 11. trinn med dysleksi og/eller lesevansker.

Lesepraksisene og strategiene er ment å rette seg mot leseforståelsen og leseutviklingen til elever med dysleksi og/eller lesevansker. Teori og tidligere forskning på dette området er begrenset, og det finnes et hull i forskningen når det gjelder læreres praksiser og strategier når det gjelder å differensiere for eldre elever med dysleksi og/eller lesevansker. Dette er forskningsspørsmålene som denne avhandlingen svarer på og bidrar til å belyse:

- *Hvilke lesepraksiser og strategier kan lærere bruke til å differensiere for elever på 8. til 11. trinn med dysleksi og/eller lesevansker i engelskfaget?*
- *Hvor har de tilegnet seg praksisene og strategiene de bruker?*

Studiens data er halvstrukturerte intervjuer som er holdt med fem lærere (tre fra skoler akkreditert som dysleksi-vennlige). De innsamlede dataene drøftes opp mot to teorier om leseutvikling, Den Proksimale Utviklingssonen og en samling av ulike typer med tidligere forskning. Denne oppgaven konkluderer, blant annet, med at det mangler kunnskap og ressurser for lærere som underviser eldre elever med dysleksi og/eller lesevansker. Da lærerne ble spurt om hvilke praksiser de hadde eller hvilke strategier de brukte, viste det seg at deres innsats var mangelfull. Avhandlingen konkluderer også med at lærerutdanningen i Norge ikke dekker emnet dysleksi og andre lesevansker grundig, noe som er et av stedene hvor de fleste lærerne oppgir at de har lært praksisene sine, sammen med ressurser og kurs fra Dysleksi Norge. Det er forskjeller i kunnskap og praksis blant lærerne som jobber på dysleksi-vennlige skoler, da de differensierer mer for disse elevene og virker å være mer bevisste på de spesielle utfordringene til dysleksi (imidlertid virket ingen av lærerne å være klar over andre lesevansker enn dysleksi). De fleste lærerne uttrykte bekymring for å ikke kunne gjøre nok, eller ikke ha gjort nok, for elever med dysleksi.

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1.0 Introduction

Roughly 5% of the Norwegian population can say that they have dyslexia diagnosis (Dysleksi Norge, Waaler & Waaler, 2019, p. 8), and additionally, there are many more who struggle to read and do not have this specific disability. These people have reading disabilities that are not necessarily defined as dyslexia. Reading disabilities is considered the most common learning disability “...affecting more than 80% of students identified with learning disabilities” (Lerner J, 2003, as cited in Lee & Yoon, 2017, p. 1). Therefore, it is natural that each classroom would have students who struggle with reading, which is a basic skill in the Norwegian curriculum that the students are expected to master by the end of their schooling (The Ministry of Education and Research, 2019). The differentiation practices and strategies for reading development and comprehension is therefore a necessity for these students to succeed in their education, and in learning how to manage their disability later in life.

Dyslexia is defined by Dysleksi Norge as

“A specific learning disability that makes it challenging to acquire functional reading- and writing skills. Typical characteristics can be significant issues with decoding words and spelling, in addition to other challenges with language-related skills. The most common issues are difficulties with phonological processing, orthographic reading (difficulties with rapid recognition of words), and having a phonological short-term memory” (Dysleksi Norge, Waaler & Waaler, 2019, p. 8), see section 4.1.1 for further explanation.

Dyslexia is considered a reading and writing disability. Reading disabilities is an umbrella term for “...difficulties with reading fluency due to inadequate phonological skill and slowed oral language processing speed” (Lee & Yoon, 2017, p. 1), which is why this term is included in this paper. Reading disabilities can refer to the reading issues that dyslexic students struggle with. It is also possible to have a reading disability without having been diagnosed with dyslexia. However, in previous literature, there are a lot of references to the term poor readers or struggling readers, which are also terms which are included in this thesis, however, that is not included as a point of discussion but as term used to find relevant previous research. The term poor readers or struggling readers are collective terms, which means that they include all students who struggle with reading. Poor readers or struggling readers can also be a less diagnostic way of saying reading disability (RD) without including the

discourse on what it means and how it occurs. When looking a study about struggling readers by Stover et al., (Presented in 4.3) they define struggling readers as students who fall beneath the level of proficient reading, which in this case is The National Assessment of Educational Progress scores that decide the line between proficient readers and struggling readers in their study (2015, p. 60). Furthermore, Dyslexia is perhaps the most known learning disability, and including these other terms is also a way of bringing up awareness and gauging attitudes towards students with reading disabilities (RD) amongst the teachers that participated in this study. However, the focus lies on the terms dyslexia and reading disabilities (RD).

The main topic for this thesis is teacher reading practices and strategies to help differentiate for 8-11th grade students with dyslexia and/or reading disabilities who struggle to read in the English subject in Norwegian schools. According to Brevik et al., “Few reading studies have been carried out at the upper secondary school level» (2016, p. 161), which means that there is little existing information on the topic of reading proficiency in upper secondary school. This thesis will mainly look at the teacher’s perspective and their practices in teaching older students who struggle to read, in addition to how they acquired their practices and why. This path was relevant since there is so little knowledge about reading issues in older students and how to help them. Additionally, since the topic of this thesis is reading in *English* for Norwegian students with dyslexia or RD, research on the differences and similarities between L1 and L2 reading needs to briefly be addressed in order to understand the relevance of the EFL context. A study by Brevik et al. discusses the complexity of second language learning when looking at the relationship between L1 and L2 reading (2016). Brevik et al., argue that an important difference between L1 and L2 reading is the approach to reading L2 as a dual language system (2016, p. 163). This suggests that the L2 reading is affected by their L1, and the two languages are continuously adapting to each other in the reader’s mind. Brevik et al., found in their study that the variation in L2 reading skills was connected to L1 reading, gender, and what study program the upper secondary students were in (2016, p. 178). In addition, their research is based on Norwegian upper secondary students and their reading skills in their L2 (Brevik et al., 2016, p. 178) This means, amongst other things, that Norwegian upper secondary students who struggle with their L1 also struggle with their L2, and that there is a higher number of poor readers in specific study programs in upper secondary school.

Furthermore, this thesis discusses, amongst other things, the use of strategies to help students with their reading skills and their reading comprehension. However, the term strategy can be vague in its description. For this thesis, the term is used to describe specific strategies meant to foster reading skills and to help with reading comprehension. In a pedagogical and instructional setting, the term strategies are more related to specific strategies meant to enhance learning. Therefore, it is necessary to use a definition of the term *teaching strategies*. A definition that particularly fits with the preliminary of this thesis is this: “Teaching strategies refer to the methods, techniques, procedures, and processes that a teacher uses during instruction. It is generally recognized that teaching strategies are multidimensional, and their effectiveness depends on the context in which they are applied» (Hattie, 2009; Marzano et al., 2001; Wayne and Young, 2003, as cited in ECU, n.d). This definition explains all the terms that a teaching strategy would encompass, which generally is everything a teacher does in the classroom to make sure the students reach the competence aims. In a classroom setting, no strategy is assured to be effective, which means that the success of the strategy depends on who it is applied by and why and how it is applied. A reading strategy is something the students themselves use when reading, while strategies taught and applied by teachers are more than specific reading strategies. In addition, the thesis question contains the term *practices*, which is a collective term of all the strategies that are used and taught by teachers. It is also important to note that the term reading intervention strategies comes up a couple of times, especially in previous research, as it specifies teaching strategies, as specific strategies that target lower-level reading skills in a higher-level classroom.

1.2 Thesis questions and choice of method

The research question is presented as such:

- *Which reading practices and strategies can teachers use to differentiate for 8th-11th grade students with dyslexia and/or RD in the English subject?*

The question is meant to explore the possibilities of different kinds of reading practices and strategies that are meant to differentiate for and help students with dyslexia and/or RD, in addition to investigating the practice and strategies that teachers actually do in the English subject. A secondary research question is also included:

- *Where have they acquired the practices and strategies that they apply?*

This secondary question adds depth to the aim of this thesis by presenting and discussing the reason behind choosing the specific practices and strategies that the teachers use. It can also be useful when considering the importance of teachers when teaching students with reading disabilities and whether the materials and information are available or visible to them.

Furthermore, the choice of method was evident after considering the thesis aim. A qualitative interview would discern which practices some teachers use and discover their thoughts on reading development and their success in implementing reading strategies in the classroom. The basis for this thesis is the empirical data from the interviews and the framework of theories and studies that are used to discuss the data. The teacher perspective in the empirical research allows this thesis to focus on the reading practices of teachers of older students. The method was suitable for the aims of the thesis, and it was not beyond the bounds of possibility for a master's student with a limited timeframe and few resources. Moreover, the choice of method can procure the teachers' beliefs about what language learning means, which can give insight into how their beliefs influence their pedagogical decisions (Haukås, 2020, p. 364). However, the teachers' beliefs do not necessarily mean that they act on their perceptions of reality (Explained further in 4.5).

1.3 Demarcation and Structure

The thesis aim and questions give way to a demarcation of several areas of research, involving reading, disabilities, second language learning, and differentiation. The combination of these topics was a way to narrow down the fields in itself, each topic relating to each other in a specific way. The project also naturally narrows because of the teacher interviews and the narrative that they provide. This thesis is not a study of the reading ability of dyslexic students, but rather a project meant to gauge the resources and practices of their teachers. The method draws the demarcation of the topics and drives it toward differentiation in the classroom. Another demarcation line is drawn when interviewing participants who teach grades 8 to 11. With the emergence of LK20, The English subject in upper secondary school is changed, which means that English (ENG01-04) is only taught in VG1 and not in VG2 as it was in the previous curriculum (The Ministry of Education and Research, 2019). In addition, those grades are both relevant to my area of study. The students in those grades can be considered adolescent and/or older readers, which in connection to reading disabilities has not been studied properly and there is a lack of information about reading strategies that

benefit students with reading disabilities in secondary-upper secondary. The lack of studies made those grades interesting and relevant to look at concerning reading and reading disabilities. In addition, specific terms are used, such as reading comprehension, reading development, dyslexia, reading disabilities, and strategies, which also narrow down the topic of reading.

The thesis is made up of eight chapters. 1.0 introduction contains the research questions and defines the research gap. The 2.0 background chapter contains information on my choice of literature and a section on reading in the curriculum. Further on, the chapters 3.0 previous research, 4.0 theory, and 5.0 method are included before the final chapters. Chapters 3, 4, and 5 contain the information needed to analyze and discuss the research questions. The 3.0 previous research chapter includes a range of different studies on various topics that relate to the thesis questions, and the theory chapter contains three different theories that make up the framework of this thesis. The 4.0 method chapter presents the details of qualitative semi-structured interviews and how I have prepared and executed the interviews. The 6.0 analysis contains the analysis of the results from the interviews, and the 7.0 discussion chapter discusses the findings in relation to theory and previous research. This paper ends with 8.0 concluding remarks and reflections about further research. There are three appendixes included as well, which contain the interview guide, a coding form, and the letter of approval from *Sikt* regarding my security plan for potential personal information gathered from the participants.

2.0 Background

This section presents the background for the choice of literature, specifically a justification for the use of Dysleksi Norge as a viable and important source, and a discussion and presentation of ambiguous terms.

2.1 Dysleksi Norge

Dysleksi Norge is an organization that works for everyone with reading- and writing disabilities, dyscalculia, and language disabilities (Dysleksi Norge, 2023). The organization was created in 1976 and is made up of 40 local and county-based teams, resulting in a national meeting every three years where they vote people into the organization's government branch and into the secretariat (Dysleksi Norge, 2023). This organization works to spread awareness about the previously mentioned learning disabilities and do a number of things to reach their goals. In this thesis, Dysleksi Norge is used as a source in defining dyslexia and, because of their relevance and influence in Norwegian schools, as a source of information about what it means to be a dyslexia-friendly school and what a relevant reading practice is. *Dysleksi Norge* is a source of information about the different learning disabilities and also a source for teachers and schools when it comes to differentiating for and helping students with learning disabilities in their education, amongst other things. To reach their goals, they offer schools, universities, and workplaces the opportunity to get courses on the implications of different learning disabilities, various academic resources, and more user-friendly resources. In addition, the organization uses its political influence to give resources to the people who struggle with their diagnosis. Their impact has caused changes such as facilitation for students with learning disabilities during national testing, the opportunity to remove grades from foreign language courses¹, rights in higher education, accessibility for audiobooks, and more (Dysleksi Norge, 2023).

One of the organization's core values is that its knowledge is derived from academic research, which is stated on the official web page of *Dysleksi Norge*: "Since the birth of the

¹ The opportunity to remove grades from foreign language courses. This means that upper-secondary students with dyslexia can apply for the removal of their grades in foreign language courses (Statsforvalteren, n.d.), such as German, Spanish, or French. They have to sit through the course and get approved for participation, but the grade is not included on their diploma. This is an advantage, especially for the students planning for university, because it would boost their final grades. An issue with the wording from the state administrator (statsforvalteren), is that they do not specify what they mean when they say foreign language. I don't believe the English language is a part of their definition of a foreign language, which means that dyslexic students would still get a grade in English courses.

organization, it has been characterized by seeking cooperation in academic environments” (translated by myself). According to Dysleksi Norge, this core value was made especially apparent in 2005 with the initiation of the dyslexia-friendly school project, where increasing the competence in dyslexia-friendly practices in Norwegian schools was the end goal. Today there are well over 100 dyslexia-friendly schools in Norway (Dysleksi Norge, 2023) A part of increasing competence and knowledge is also about changing possible convictions and prejudice in the population, perhaps especially in schools (Dysleksi Norge, 2023). The dyslexia-friendly-schools project is part of why this thesis focuses on teacher practices in connection to students with dyslexia and/or RD, and why the participants in my interview mainly teach at schools that are considered dyslexia friendly by *Dysleksi Norge*. To elaborate, The dyslexia-friendly schools project caught my attention, as I wondered what it would mean for the teachers, and though them the students, in these schools. Furthermore, the academic investment is how the organization works to improve the terms of people with learning disabilities (Dysleksi Norge, 2023). The *Dysleksi Norge* webpage also offers a collection of studies written by professional members of the organization, in addition to guidance sessions from their pedagogy advisors (Dysleksi Norge, 2023). The organization has gained a reputation for being trustworthy, which can be argued by its presence in Norwegian politics and in a wide range of schools.

2.2 Reading in the curriculum

In order to discuss what kind of help students with reading disabilities need in order to succeed in their education, we need to know what reading means in the curriculum, and what the students are expected to master at the end of their education. For this section, the English version of the curriculum is being referred to and may cause some slight differences in meaning because of the wording.

2.2.1 Reading as a basic skill

Four Basic skills is listed in the curriculum and explain what oral skills, writing, reading, and digital skills mean in the English subject. Under basic skills in the curriculum, reading is described as:

Reading in English means understanding and reflecting on the content of various types of texts on paper and on screen and contributing to reading pleasure and language acquisition. It means reading and finding information in

multimedia texts with competing messages and using reading strategies to understand explicit and implicit information. The development of reading skills in English progresses from experimenting with phonemes and speech sounds, spelling patterns, and syllables to reading varied and complex texts with fluency and comprehension and being increasingly able to critically reflect on and assess different types of texts. (Ministry of education and research, 2019, p. 4)

The purpose of reading in the English subject is split into several goals; for language acquisition, to motivate students to read for pleasure, and to find information in texts for various purposes. The purpose of reading in a school setting is based on the learning perspective, as the goals are to learn and use the English language. The next part of the quote lists reading skills necessary for development in reading comprehension, fluency, and reflection. Reading development is described in the quote above as moving forward from the experimentation with phonemes and speech sounds, toward what can be referred to as a higher level of reading. According to Nassaji, lower-level reading involves "...decoding print and encoding visual configurations", while higher levels of reading start from "skills of syntax, semantics and discourse" to "knowledge of text representation and the integration of ideas with the reader's global knowledge" (2003, p. 261). However, it is difficult to pinpoint exactly what reading is because it varies with competencies, personal background, media, and what type of text is being read (Aamotsbakken & Knudsen, 2011, p. 17). Older students with reading disabilities might struggle with lower-level reading skills, and at the same time possess higher-level reading skills, or be expected to master higher-level reading skills. Being able to reflect and assess texts is stated as a significant factor at the end of reading as a basic skill by The Ministry of Education and Research, which puts focus on the higher levels of reading instruction by the end of upper secondary English subject education.

The LK20 description of reading as a basic skill, the quote above, includes reading on screen which is not a part of the old curriculum (Ministry of Education and Research, 2013), differentiating what it means to read on paper and what it means to read on screen and in other types of digital media. This is an important addition to reading for learning purposes, as updated information and availability come with reading on digital media. In addition, social media and various digital platforms have become a big part of our daily lives, which makes it important to learn how to think critically about texts from unknown sources and how to

assess text form, formality of language, and appropriate language in different digital settings, among other things.

2.2.2 The core elements

The formality and appropriateness of language are mentioned as a key factor in communication in the core elements of the curriculum (The Ministry of Education and Research, 2019).

Under the core elements of the curriculum in the English subject, three aspects are mentioned: communication, language learning, and working with texts in English (The Ministry of Education and Research, 2019). In the section that reads *Working with texts in English*, “language learning takes place in the encounter with texts in English” (The Ministry of Education and Research, 2019), and states that students will gain knowledge of language, culture, and society by reflecting on and assessing texts in English. Reading texts is an important part of developing higher levels of reading, where aspects such as intercultural competence is a part of. The core element of working with texts in English signifies the importance of cultural learning and diversity, and how texts in English are important for students to understand others and themselves. Intercultural competence is acquired by reading different texts in English, (The Ministry of Education and Research, 2019) according to the curriculum, which signifies that the development of reading skills in schools focuses on reading as a tool for understanding cultural diversity and identity. This section about the core elements is included to give an overview of the variety of areas that involve reading in the curriculum. For the higher levels of reading, which would be in secondary and upper secondary school, the core element of working with texts in English for both language acquisition and cultural learning is an important part of what the teachers are supposed to teach.

2.2.3 Competence Aims and Assessment

Competence aims in the VG1 program for general studies refer to reading in accordance with the core elements and basic skills, using terms such as fictional texts, factual texts, reflect, diversity and social conditions, form, content, language, literary devices, different media, etc (The Ministry of Education and Research, 2019). The competence aims of the curriculum for upper secondary school describe reading as a tool for learning in accordance with the entirety of the curriculum in the English subject. Reading comprehension is an important part of the

English subject, which would make reading development and differentiation for struggling readers an important aspect for them to succeed. The choice of text is also something that needs to be considered when differentiating for students with reading disabilities. A significant change that came with the LK20 curriculum is that there is no mention of reading entire novels (The Ministry of Education and Research, 2019). This part of the curriculum might give teachers more room to choose shorter texts or digital texts, which might make it easier to differentiate for students with reading disabilities.

The curriculum for English in the VG1 general studies programs also explains the role of formative assessment. “The teacher shall provide guidance on further learning and adapt the teaching to enable the students to use the guidance provided to develop their reading skills, writing skills, and oral and digital skills in the subject» (The Ministry of Education and Research, 2019). The teachers’ role in reading development is to provide guidance, adapt, and differentiate, especially for struggling readers. The curriculum mentions both the expectations of what the students should learn, but also a broad explanation of how teachers should help them reach that goal. Concludingly, the curriculum does not include practices to differentiate for dyslexic students. What is gleaned from including reading in the curriculum is what a standard or expected development of reading looks like in the curriculum.

3.0 Theoretical Framework

Perfetti and Stafura write that a single theory of reading does not exist, since reading engages several processes and components that cannot be explained or defined by one theory (2014, p. 22). For this thesis, three theories are presented: an integrative-compensatory reading model (3.2), a model depicting the reading development of dyslexic students (3.3), and a learning theory (3.4). These theories were chosen because of their relevance to the topic of this thesis and the purpose of the collected data. There are a lot of theories on reading, however, the two reading theories can be applied to a practitioner context. Furthermore, this chapter starts with definitions of the terms *dyslexia* (3.1.1) and *reading comprehension* (3.1.2). Chapter 3.0 is thus split into four sections, where 3.1 has two subsections.

3.1 Definitions

This section includes two definitions, the first being the clarification of what *dyslexia* means in this thesis and a discussion of why I have decided to go with my chosen definition. Section 3.1.1 also includes some legal issues connected to the diagnosis and what that could mean for teachers. Lastly, this section includes a definition of the term *reading comprehension* and what it means in this thesis.

3.1.1 Dyslexia

The definition of dyslexia has changed significantly over the last two decades.

“Dyslexia is a neurodevelopmental disorder that is characterized by slow and inaccurate word recognition.” according to psychology researchers Peterson & Pennington (2012). The definition puts focus on the decoding of words and little else. Educational psychologist Lawrence writes that the frequently used definition “difficulties with decoding literature” (2014, p. 472), which focuses on the same aspect of dyslexia as Peterson and Pennington, is too narrow (p. 472). Research on students with dyslexia in 2014, showed that factors such as difficulties with working memory and processing speed could be found in people with dyslexia, and were found to be more challenging than reading and decoding words (Lawrence, 2014, p.472-473). Lawrence also mentions that the people who were researched did not lack intelligence (2014, p. 472), which essentially means that people with this disability can succeed in their education if they are given tools or support to do so.

For my MA thesis, I choose to use the definition used by Dysleksi Norge, which has updated information about dyslexia and addresses the specific issues and characteristics of people

with the disability. Dyslexia is defined by Dysleksi Norge and Waaler and Waaler in *Tilpasset Opplæring i Engelsk for Elever med Dysleksi* (2019) as:

A specific learning disability that makes it challenging to acquire functional reading- and writing skills. Typical characteristics can be significant issues with decoding words and spelling, in addition to other challenges with language-related skills. The most common issues are difficulties with phonological processing, orthographic reading (difficulties with rapid recognition of words), and having a phonological short-term memory. Processing speed and automation can also be a challenge for a dyslexic. These characteristics are dependent on the cognitive abilities of the person in question.

Dyslexia is an innate and lifelong disposition.

Standard teaching methods are often ineffective, but the consequences of the disability can lessen with adapted and specific training, including the use of digital tools and supportive guidance.

The disability can be understood as a continuum at best, and there is no clear boundary between weak decoding skills and dyslexia.

(My own translation, p. 8)

The definition above is the official definition of Dysleksi Norge and is derived from a collection of definitions from different international diagnostic systems (Dysleksi Norge, Waaler and Waaler, 2019, p. 8). It contains the significant indicators of dyslexia, with the expectation that it varies between individuals. The previous issue of *Tilpasset Opplæring i Engelsk for Elever med Dysleksi* from 2016, offers two separate definitions that have been shortened, combined, and improved in the new issue from 2019. The definition from 2019 does not include the statement that disability does not affect intelligence, which is mentioned in the 2016 edition (Dysleksi Norge, Lothe and Waaler, 2016, p. 8) and by Lawrence (2014, p. 472). However, it does specify that the cognitive ability of the person in question would affect the characteristics of dyslexia. Lawrence is implicating that a person does not need to be unintelligent to have dyslexia, and the 2019 version brings this knowledge further by confirming that dyslexia is not dependent on intelligence. However, the variety of the disability, meaning the characteristics the dyslectic is struggling with, can be dependent on the cognitive abilities or skills of the person in question. The variety in people with dyslexia makes it difficult to differentiate between other reading and writing disabilities or simply

“weak decoding skills” (Dysleksi Norge, Waaler and Waaler, 2019, My own translation, p. 8).

Waaler and Waaler (2019) also explain the disability further by including several indicators, follow-up issues in relation to dyslexia, and the comorbidity with other disabilities (p. 8-9), which is stated in more or less the same way in the 2016 edition of *Tilpasset Opplæring i Engelsk for Elever med Dysleksi*. Follow-up issues are not a characteristic of dyslexia but can occur as a consequence, such as “coordination, and organization, which can lead to issues with learning the time, the perception of direction, and with learning the difference between left and right” (Waaler and Waaler, 2019, my own translation, p. 9). Organization could also be an issue when writing longer texts. In addition to these follow-up issues, Dyslexia often occurs side by side with specific language disabilities, ADHD, and dyscalculia (Waaler and Waaler, 2019, p. 9).

People with dyslexia can struggle with separate issues, some having more problems writing, and others struggling more with reading (Jessen, 2009, p. 32), however, this thesis will focus on the reading issues in students with dyslexia.

According to Roe & Blikstad-Balas, the terminology used in official definitions of dyslexia can potentially be problematic (2022, p. 27) and has been criticized by Uppstad & Tønnesen (2007). According to the latter, “the notion of phonology in the tradition of cognitive psychology” (p.154), is not precise enough to use in research about dyslexia because the use of the term can make it difficult to accurately understand and measure dyslexia (2007, p. 154). The notion that phonology is vague might seem strange in the linguistic context, however, the term lacks a clear status within the field of dyslexia research (Uppstad & Tønnesen, 2007, p.154). Uppstad & Tønnesen argues that if the term is used, it needs to be based in observable linguistic behavior (symptoms) and not causal aspects such as “phonological deficits” (2007, p. 154) Roe & Blikstad- Balas also explain the criticism as an opposition to the use of linguistic terminology when researching dyslexia (p. 27-28). Roe & Blikstad-Balas writes that the criticism underlines the notion “that it is more important to focus on how people learn than to press the terminology into the limitations of linguistic systems” (2022, my own translation, p. 28). This means that the criticism directed toward official definitions, such as the one I have chosen from *Dysleksi Norge*, can be limited in the choice of terminology. The issue of phonological terminology in connection to learning perspectives could potentially be something to keep in mind when discussing teacher

perspectives on dyslexia and how they work with their definition of it in mind when teaching. However, terms such as “phonological deficits” are difficult to avoid when researching dyslexia, as it is a big part of scientific studies on dyslexia (Uppstad & Tønnessen, 2007, p. 154)

Speech-language pathologist Asbjørnsen simply uses the term reading difficulties when addressing dyslexia (2002), in order to simplify the term. However, when defining dyslexia for school purposes, the entirety of the disability needs to be addressed, so that as many students as possible with dyslexia will be recognized and the materials² can be adapted for each person based on the characteristics of the disability they struggle with the most. Another issue with using reading difficulties instead of dyslexia in a school setting is the official requirements such as a dyslexia diagnosis, which often is a requirement to get extra support and the necessary tools, even though it is difficult to separate dyslexia from other RDs³. However, using reading difficulties might be another way of saying reading disabilities. Students with RD may have challenges with reading due to educational neglect and issues with concentration and attention, and the term can refer to students who lack ability in reading comprehension without having issues with decoding (Statped, my own translation, 2023). When using the term RD, I am referring to the umbrella term that holds dyslexia and other forms of specific reading disabilities, which is why this thesis uses the terms Dyslexia and/or reading disabilities.

There are several processes that the school is legally required to perform when it comes to students with dyslexia and students who are suspected to have dyslexia. “Parents have the right to demand that the school looks into whether their child needs special education or other forms of relevant adaption” (Opplæringsloven, My own translation, 2013, § 5-4), and they also have the right to deny it, which also applies for the parents right to deny the testing for a diagnosis (Opplæringsloven, 2013, § 5-4). The school would be the link between the pupil and the educational psychology service. The issue of refusing to test for a diagnosis or any form of special education could potentially make it problematic for teachers and students alike, as they would have to adapt for the students as well as possible within the frames of their limited resources. The dyslexia diagnosis does not necessarily call for individual

² Materials are school materials, choice of texts, or tools that can help the student succeed despite their disadvantage.

³ Abbreviation of reading disabilities or reading difficulties.

instruction by itself in Norwegian schools, which means that the dyslexic students would receive the same right of differentiation in the classroom as everybody else (Opplæringsloven, 2013, §5-3, §1-3). However, to get extra funding for additional digital tools, a diagnosis is required to apply for grants (Folketrygdloven,1997, §10-7). Essentially, this means that tools that require funding cannot be distributed unless the diagnosis is in place. An example of a necessary tool can be a PC or digital reading and writing tools. In addition, students with the diagnosis also have the right to added time on exams and tests, and/or to have the exam read from text-to-speech (The Ministry of Education and Research, 2021, p. 30-31). The legal procedures from the school’s perspective are included because they set the framework of what dyslexia means in a school setting, and why it matters.

3.1.2 Reading comprehension

“The ultimate goal of reading is comprehension” (Peterson & Pennington, 2012, p.1). The purpose of reading is in its basis about comprehension, meaning that we read in order to retrieve meaning from texts for various purposes. The purposes of reading can differ from which setting it is intended for, but comprehension is necessary for reading across all genres and areas of use. When focusing on reading for learning, understanding is important. This thesis will mainly focus on reading for learning purposes and how to help students with RD to reach the same level of reading proficiency in understanding and analyzing texts as is expected or required by the end of their English education. That will include using the term reading comprehension in order to discuss the implications of a higher level of reading instruction in secondary school for students with dyslexia. Roe and Blikstad-Balas define reading comprehension as “creating meaning out of the texts we read” (2022, my own translation, p.25), and continue to state that the meaning created from reading is the key to learning. This definition is fitting for the simple purpose of the term reading comprehension; however, it can be broadened by comparing it to the term literacy as competence is an important part of reading for learning.

When discussing reading comprehension in relation to secondary school EFL education, the term literacy is used to describe competence, or rather literacy is defined as competence in reading, interpreting, and writing texts (Aamotsbakken & Knudsen, 2011, p. 10, 19-20). In teaching higher-level reading, which would be relevant in an upper-secondary classroom, various forms of literacy can be used to explain what kind of competencies are desired when

teaching. According to Brevik, reading comprehension and reading literacy denote each other, except reading literacy could be considered a more general term compared to reading comprehension (2015, p. 10). The variation of the term literacy would be dependent on the research referred to.

OECD defines reading performance or reading literacy as “the capacity to understand, use, and reflect on written texts in order to achieve goals, develop knowledge and potential, and participate in society” (OECD, 2023). The PISA tests, an OECD program, are international tests to measure reading comprehension, amongst other things. According to Ørevik, the definition above points out the purpose of reading in a relevant way for the EFL classroom and Ørevik continues to use this definition as a way to define reading comprehension as well (2020, p. 146). When discussing reading comprehension from a learning perspective, the OECD definition is relevant for this thesis as well, by bringing in the terms: capacity, reflection, development, and potential, which are all very relevant terms when discussing why and how we read in the classroom.

Reading comprehension is relevant when discussing dyslexia and RD because, amongst other things, memory is connected to concentration and attention which are required to comprehend texts and to pay attention to the content (Roe & Blikstad-Balas, 2022, p.25). A phonological short-term memory is part of why dyslectics can struggle with reading comprehension, in addition to other potential characteristics and factors, such as speed and fluency. In addition, “Reading comprehension also involves the use of skills and strategies” (Brevik et al., 2016, p.163), which means that to be successful readers, students who struggle with reading comprehension need to develop their reading skills and use specific reading strategies adapted for their problems when reading.

3.2 Interactive-compensatory model of reading

I chose to include Stanovich’s interactive-compensatory model of reading in order to have a versatile reading theory that goes beyond any specific reading disability but contributes to explaining the reading process and the things that take place while we read. Stanovich’s interactive-compensatory model means “that a weakness in one area of knowledge or skill, say in Orthographic Knowledge, can be compensated for by strength in another area, say Syntactical Knowledge” (Urquhart & Weir, 1998, p. 45). Stanovich’s model is an interactive

reading model, which differs from other reading model approaches, such as Bottom-up models that are sequential, meaning that reading is a process where one stage is finished before the next one starts (Urquhart & Weir, 1998, p. 44-45). The interactive reading model is thus a pattern where most of the stages happen simultaneously (Urquhart & Weir, 1998, p. 44-45). The stages referred to are various cognitive reading processes. There are several approaches to models of reading, however, Stanovich's model can be studied from a learning perspective concerning reading disabilities. Since reading disabilities, such as dyslexia, are often very individual and the characteristics can vary, Stanovich's model can explain how to pose as a successful reader by compensating for weaknesses in one area by being proficient in another.

The idea of compensation is also brought up by other researchers such as Goodman and alluded to by Alderson and Urquhart (Urquhart & Weir, 1998, p. 45). According to psychology researchers Rayner and Pollatsek, the main critique of the interactive-compensatory model is that the model is bad at predicting the reading process in advance but gives a way to analyze how the reader has processed text afterward (1989, p. 471). The model is more usable in relation to analyzing the reading process after it has taken place, giving practitioners a possible way of assessing skills or development. The use of Stanovich's model for this thesis would be to look at how students with reading disabilities can seem like proficient readers while struggling with parts of the reading process.

Stanovich suggests that the interactive-compensatory model of individual differences in reading ability is a good way of explaining the reading process because it is not dependent on the reader's place in the hierarchy of reading competence (Stanovich, 1980, p. 63).

The compensatory assumption⁴ states that a deficit in any knowledge source results in a heavier reliance on other knowledge sources, regardless of their level in the processing hierarchy. Thus, according to the interactive compensatory model, the poor reader who has deficient word analysis skills might show a greater reliance on contextual factors. (Stanovich, 1980, p. 64)

⁴ The compensatory assumption is how Stanovich worded it himself, but it seems to refer to the compensatory theory as being an assumption. The word assumption seems a bit misplaced in this context.

Stanovich also concludes with the differences between the poor readers and the high-competence readers by using the interactive-compensatory model. Since readers with less reading competence use more energy on contextual factors to succeed at word decoding and recognition, they have less room to focus on overall text comprehension in longer texts (Stanovich, 1980, p. 63), where analyzing the plot and entirety of the text, are important. The contextual facilitation can then come at a cost for the poor readers in a setting where literature analysis and reading novels and longer texts are involved. Concludingly, this model is not the most central model in this thesis, but it is included because it is used in connection to reading disabilities and how they compensate for their deficits, such as relying on contextual factors. In addition, the model does not specify where in the hierarchy of processing the readers are, which means that it does not matter how old or how skilled the reader is.

3.3 Reading development in students with reading disabilities

Reading disabilities is a particularly elusive term, and the root cause for the disability is still up for debate (Erbeli et al., 2017, p. 167). Spear-Swerling and Sternberg explain that students who have been diagnosed with reading disabilities have been described as having an unsuccessful reading development in contradiction to their average or above-average intelligence (1994, p. 91). In 2007 a hybrid model was introduced by Fletcher et al. and has since been tested in several studies (Erbeli et al., 2017, p. 167). The hybrid model of reading disability implies that there is no single indicator that defines the issues of the struggling readers, but rather several components combined (Erbeli et al., 2017, p. 167). The hybrid model is presented by Erbeli et al, as containing four different components that make up reading disabilities; Impaired sight word reading, impaired phonological decoding, impaired reading comprehension compared to listening comprehension, and poor response to interventions. However, this model is used for etiological purposes in addition to being presented to gather insight into the typology. Spear-Swerling and Sternberg present a model with a didactic perspective and how RD relates to normal reading acquisition (1994, p. 91), which correlates with the approach for this thesis. The components that make up Spear-Swerling and Sternberg's integrative theoretical model of reading disability are "non-alphabetic readers, compensatory readers, nonautomatic readers, and readers delayed in the acquisition of word recognition skills.". Spear-Swerling and Sternberg comment that their model "...does not necessarily imply more than one basic deficit in individuals with reading disability", which means that the deficit of impaired phonological decoding is not a primary

focus of the model, however, Spear-Swerling, and Sternberg argue that the model still accommodates for that deficit within their presented components of the disability, and they agree with the other investigators in their field that the disability contains multiple deficits that can influence each other (1994, p. 99). They explain the components presented as consequences of the typology components. For example, young students with substantial issues with phonological processing would have difficulties with gaining alphabetical insight at first and become nonalphabetic readers (1994, p. 99-100). However, a suitable education might help young students with a substantial deficit in phonological processing to understand and use the alphabetic principle and follow along the main road toward becoming proficient readers (1994, p. 100).

The thought behind the integrative model of reading disability is to present a theory for the benefit of practitioners and how intervention or early guidance vs. not having received that guidance can result in lower-level reading skills (Spear-Swerling & Sternberg, 1994, p. 91). The issue with models investigating possible biological factors, such as the hybrid model, is the inability to change those factors. The integrative model looks at the deficits that are caused by the environment and can be helped or avoided in the early stages. Spear-Swerling & Sternberg include in their paper that “Clearly, even in cases of **RD** with a biological base, environmental factors, such as the nature of instruction, will play a critical role in long-term outcomes» (Alexander et al., 1991, in Spear-Swerling & Sternberg, 1994, p. 91). Spear-Swerling & Sternberg also comment that most cases of RD stem from being at the low end of a continuum and, in addition to poor reading instruction, have caused a reading disability in the individual (1994, p. 91). The model includes a wide range of students with RD, not just the worst-case readers, which makes this model more open to the spectrum that students exist on in the classroom, and it includes students who would perhaps not only be labeled as having severe reading difficulties (Spear-Swerling & Sternberg, 1994, p. 91). Spear-Swerling & Sternberg also comment that biological factors are more likely to be present in more severe cases of reading disability, which makes that specific group more relevant for research investigating the root cause (1994, p. 92). However, since Spear-Swerling and Sternberg’s model is meant to improve the instruction for poor readers, including the range of reading disability adds relevance.

Four patterns of reading performance in students with RD are suggested in Spear-Swerling and Sternberg’s theoretical model (see Figure 1 below), varying in where the students left the

path of normal reading development (1994, p. 92). The figure depicts one major road to highly proficient reading and how reading disabilities happen at various stages where they branch off the main path. The stages of reading disability are characterized by Spear-Swerling and Sternberg by the level of word-recognition skills and reading-comprehension skills (1994, p. 96). Spear-Swerling and Sternberg commented that for the purpose of their model, there was only one road of normal reading development, where the signposts of normal reading acquisition are essential for further development (1994, p. 93). For example, “One cannot become a highly proficient reader by eschewing phonological skills in favor of purely visual skills” (Spear-Swerling & Sternberg, 1994, p. 93). Factors such as phonetical word recognition cannot be bypassed without causing significant delays or issues in reading development. Since this thesis is focused on older students with reading disability, the reading classes are focused on comprehension. However, students with reading disability could exist anywhere on the scale, from compensatory readers to delayed readers. Especially in a foreign language.

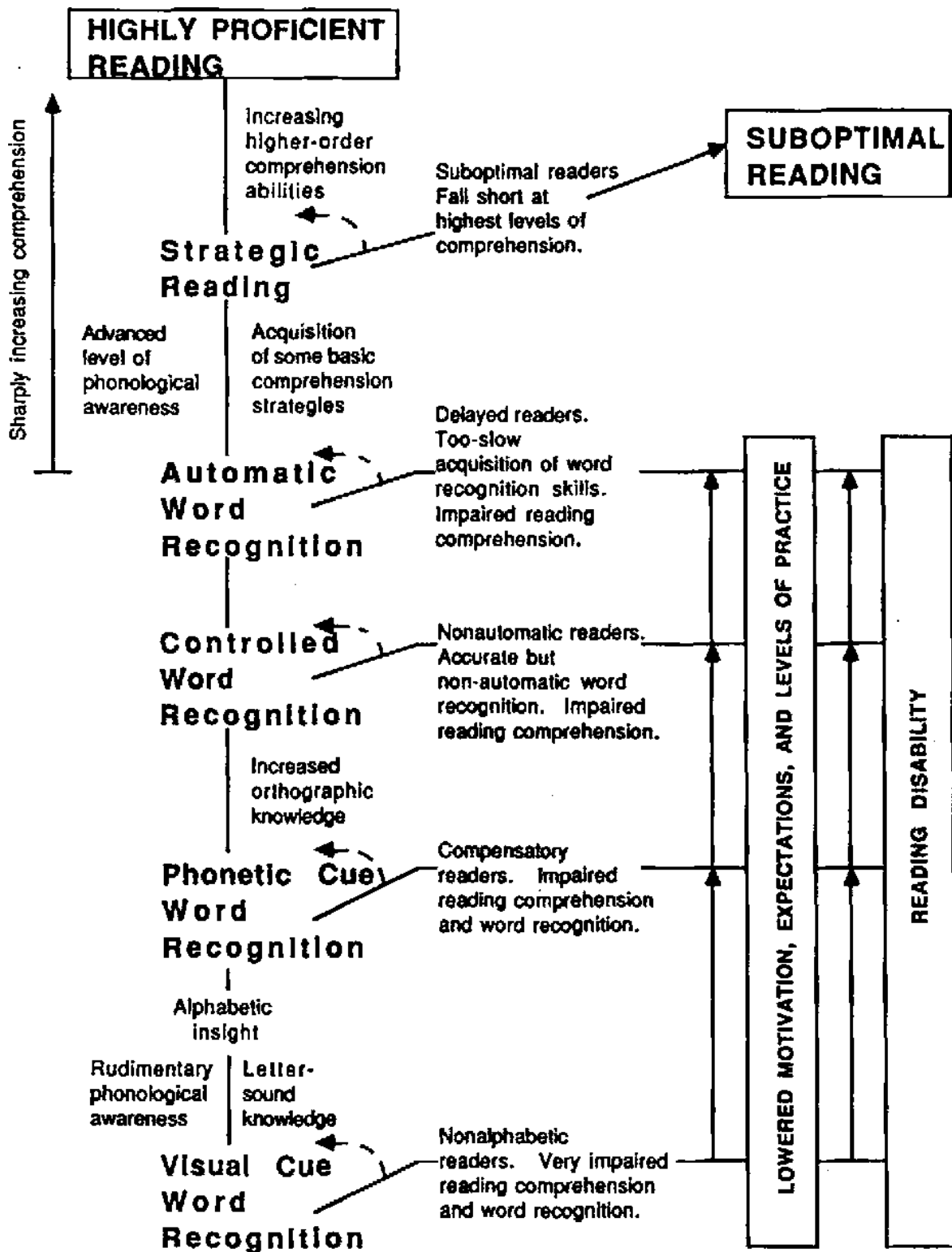


Figure 1: Diagram of Spear-Swerling & Sternberg's model of reading disability (1994, p. 92)

3.4 The zone of proximal development

This section includes an introduction to Vygotsky's model of the Zone of proximal development for the discussion of the importance of teachers and teaching tools for the development of reading comprehension skills of students with dyslexia and/or RD, which is an integral part of this thesis. The thesis question asks about the differentiation strategies that teachers use, and the ZPD (Zone of Proximal Development) can contribute to the discussion of why it is necessary. The zone of proximal development is a metaphor that comes from the subject of institutionalized schooling impacts on intelligence (Lantolf, 2000, p. 16), and means that "it is a metaphor for observing and understanding how mediational means are appropriated and internalized" (p. 17), meaning that ZPD is an insight into how humans learn by interacting with external factors. Mediational refers to the mediated mind, that we rely on tools or symbols (such as language) to act in the physical world (Lantolf, 2000, p.1) and how those activities can transform into internal functioning. The use of the zone of proximal development is, from a learning perspective, a way to look at how students learn in a school setting. For the purpose of this thesis, the learning theory, which is the zone of proximal development, is a useful perspective when discussing how to teach reading. ZPD can also be useful when discussing the teacher's role when students are learning language. Students with dyslexia or other RD's have the same fundamental abilities to learn, however, they might internalize language in other ways than other students, so they might require extra tools to act appropriately in the physical world.

"Vygotsky's definition states that the ZPD is the difference between what a person can achieve when acting alone and what the same person can achieve when acting with support from someone else and/or cultural artifacts" (Lantolf, 2000, p.17), And ZPD is interpreted the same way by Eun, stating that "Mediation is included by the support of a more capable person and the verbal interactions that occur between the participants in the zone» (2019). The teacher's role as a motivator and support is relevant to my thesis when discussing the teachers' role in helping students develop their reading skills and if that differs between the needs of students with reading disabilities compared to students who do not struggle with reading to the same degree. This thesis is written with the pedagogical belief that teachers have an important role in the pupil's development and with a questioning look at possible physical tools for reading development in students with dyslexia and/or RD.

In addition, cultural artifacts are mentioned in the quote above as equally important in the learning process. Cultural artifacts can be symbolic tools, such as language, but also physical tools that are passed down and improved over generations (Lantolf, 2000, p. 1-2). The use of physical tools in a school setting is vast, everything from paper and pencils to computer tools that can help us with research, reading, and writing. These cultural tools, including language, are adapted through need, and Lantolf, whose specialization lies in sociocultural theory and second language acquisition, discusses how ZPD can be looked at as a shared or cooperated construct of opportunity (Lantolf, 2000, p. 17), meaning that language learning in this context, or the development of information, is relevant to motivation and situation (Lier, 2000, p.252-253). This concept can perhaps be compared to the discussion of knowing a language fluently or not. We learn the language based on what we need it for. Lantolf also writes that in relation to learning through the guidance of another, the process that takes place is more like an imitation than a direct copy of what the expert is communicating (2000, p. 17). By imitating the teacher, the pupil will transform that knowledge into something new (Lantolf, 2000, p. 18). This concept of imitation vs. copying is also brought up by Newman & Holzman in their article about Vygotsky, in which an interviewed child creates new meaning by imitating portions of what the adult is saying (1993, p. 151). Furthermore, ZPD and second language learning can be explained through the interference that the teacher or other students bring to language learning, making students imitate the language but use it in their own way, not copying but learning. Lastly, it is relevant to mention the importance of metacognitive strategies in The Zone of Proximal development. The teacher's role and tasks are mainly to assess, plan activities, and set goals, which are processes that can be seen as metacognitive (Cambridge, n.d.). Metacognitive strategies are relevant to this thesis, as a big part of the teacher's role is to give students tools to learn independently and develop their skills. The importance of metacognitive strategies, teacher competence, and the use of tools is brought up and discussed later in chapter 7.0 discussion.

4.0 Previous research

This previous research chapter is not made up of studies that research the same scope as I do due to a lack of research on reading in secondary school in connection to dyslexia and/or RD. Therefore, this chapter presents a variety of studies that bring up subjects that are relevant to my thesis. First, a section on the variables and gaps in research (4.1) is presented to explain the literature search that was done for this thesis, then a couple of studies on the presentation of text (4.2), a section on strategies for reading comprehension in EFL learners who are poor readers (4.3), a section with studies on differentiated instruction for struggling readers (4.4), and lastly a couple of studies on teacher cognition (4.5). It is divided up this way to sort between the purpose and topics of the different studies. Two to three studies are presented per section, and the studies present strategies to help dyslexic readers or poor readers, and so on. All have several suggestions for appropriate strategies for students who struggle with reading and reading comprehension.

4.1 Gaps in Research and Variables

There appears to be a gap in the research surrounding reading development in dyslexic and RD adolescent students from the beginning of lower secondary and through high school/upper secondary. Very few studies discuss the reading development of upper secondary students with dyslexia in the English subject. The studies that come close to fitting the mold of this thesis are two studies about strategies for reading comprehension in EFL learners with dyslexia in a project done in Lebanon by Awada and Plana (2018) and Awada and Gutiérrez-Colón (2017). The research gaps made it necessary to broaden the literature search. Brevik et al. also comment on this in their research on the relationship between L1 and L2 reading: “Few reading studies have been carried out at the upper secondary school level” (2016, p. 161). When searching for studies on L2/EFL reading development/comprehension in students with dyslexia at the upper secondary school level, the results pool was slim to none. In addition, I needed to find some studies on this topic that would include the teachers’ perspectives or practices, which made the literature search even narrower. Therefore, this chapter includes studies on the presentation of text, studies on various strategies to help differentiate for students with learning disabilities, studies on differentiated instruction for teachers of struggling readers, and studies on teacher cognition.

Furthermore, dyslexia is a constantly developing subject, which means that the studies done on the topic need to be somewhat new to be as relevant as possible. Dyslexia research has broadened and become more accurate about what these students struggle with, and the attitude toward the potential of these students has changed and continues to change. In addition, the literature search became too restricting when using dyslexia or RD as search words. Therefore, the terms *struggling readers* and *poor readers* were used in the search to find relevant research on reading development in older children because they are general terms that do not need to be defined as disabilities (see 1.0). Since the definitions of dyslexia are so varied and difficult to defuse from other reading disabilities (see chapter 3.1.1), using terms such as *struggling readers* can be less constricting in terms of not having to define specific symptoms. However, the use of these terms can be a limitation, as not all of the studies included specifically research issues connected to dyslexia and/or RD. The gap in research made it necessary to broaden the search.

4.2 The Presentation of Text

For teachers to adapt reading for students with dyslexia, the manner in which the text is presented on a page can be a useful consideration. Certain text types can be difficult to read even for an accomplished reader. This section presents a study by a study by Rello and Baeza-Yates, a study by Ali et al., and lastly, a study by Lenhard et al. They all deal with the presentation of text.

Rello and Baeza-Yates present “a set of recommendations to customize texts on a computer screen in a more accessible way for this target group» (2015, p. 29), the target group being people with dyslexia. The article by Rello and Baeza-Yates is based on an eye-tracking study where reading performance was measured (2015, p. 29). The participants were 92 people, 46 of whom had dyslexia, and the rest served as a control group. The ages ranged from 13 to 43 (Rello and Baeza-Yates, 2015, pp. 33, 35). The specifications of digital text that were researched are color combinations, font size, column width, and spacing (Rello and Baeza-Yates, 2015, p. 29). According to the study, larger letters and character spacing made reading easier for both the group of dyslexics and the control group without dyslexia that participated in the study (2015, p. 29). However, the results of the eye tracking study and an additional questionnaire gave results that point toward a specific presentation of text that is more readable for dyslexics (2015, p. 29).

The results from Rello and Baeza-Yates's study summarize how to improve readability on screen for people with dyslexia. These points were concluded:

- Larger font sizes significantly improve readability, especially for people with dyslexia (ranging from 18 to 24 points);
- Larger character spacings⁵ (up to +7 to +14%) significantly improve readability for people with and without dyslexia;
- Regarding preferences, both groups found texts with no gray scales and with larger font sizes significantly more readable;
- Participants without dyslexia also found texts with standard character spacing and 44 characters per line column width⁶ significantly more readable.

(2015, p. 45)

These results suggest that both people with dyslexia and people without read faster when presented with a certain type of text. The recommendations could be used to help people with dyslexia and as a general way to make reading on screen easier, as the research recommends these measures for better readability for all. Furthermore, the use of dyslexia-friendly texts in the classroom would be rewarding for the students without dyslexia as well, which is also mentioned in Rello and Baeza-Yates, where they state that other groups benefit from these practices as most can struggle with certain aspects of reading, even though it is to a lesser degree than a dyslexic would (2015, p. 30). The issue that seems to affect people with dyslexia more than people without seems to be the issue of font size (Rello and Baeza-Yates, 2015, p. 45).

Self-customization is also a preferable way for people to read text, as it is possible to have personal preferences and people struggle to varying degrees (Rello and Baeza-Yates, 2015, p. 45). Their recommendations listed above can work as guidelines as to possible ways of presenting text that make it easier to read on screen, and it might apply to reading on paper as

⁵ Insertion of space between the letters of a word or the standard distance between adjacent characters (Merriam-Webster, n.d).

⁶ Line column width refers to the number of characters in a line before it shifts into a new line. It can also be referred to as line length (Scott, 2022).

well, but that is not the issue presented in their study. In a Norwegian classroom setting, the use of digital texts is abundant, making these recommendations a possible way to adapt for students with dyslexia. In addition, these recommendations would not slow learning in students without dyslexia, as the research was proven to be useful to most readers in both groups. Web accessibility has also been discussed by Ali et al., who have researched the use of font types in a classroom setting. Web accessibility means, in this context, that digital text is adapted for dyslexic readers. Ali et al. recommended using serif and sans serif font types on both prints and website text (2013, p. 33), based on their study of 48 undergraduates doing a readability test. However, they also note that there is little significant difference in the text readability between these two categories of fonts on the computer screen (2013, p. 33). Sans serif and serif are opposites, so the result of this study is curious. However, because Ali et al. concluded that there was no significant difference noted in the use of the font types tested, and there are several other recommendations, it seems more like a personal preference than something that had a lot of say in the reading of struggling students. Ali et al. is included here because Rello and Baeza-Yates did not include the use of font types in their study, settling on using Arial (which is a sans serif) in their testing, which was recommended by previous works by Evett and Brown and the British Dyslexia Association (2015, p. 36). Even though Ali et al. did not get results that relate to differences in readability between serif and sans serif, the usual recommendation for digital text is to use sans serif. Lastly, a side note in the study by Rello and Baeza-Yates mentions that in addition to the presentation of text, dyslexics struggle with language, and the content of the text, such as using low-frequency words and challenging syntax (2015, p. 45). This means that the presentation of text is only one strategy to make it easier for struggling readers and that a successful reading would depend on more than one strategy.

Furthermore, I will address a study by Lenhard et al., which is a study on the “Equivalence of Screen Versus Print Reading Comprehension Depends on Task Complexity and Proficiency” (2017). This study is included here because this thesis focuses on strategies for reading comprehension, and the other two studies that write about the format of digital texts do not discuss the comprehension benefits of reading on paper versus reading on screen. The participants in the study were collected from nine German states, where 5,073 1st to 6th-grade students from 71 different schools participated (Lenhard et al., 2017, pp. 432, 439). The data consists of samples from the ELFE reading comprehension test (p. 432). Lenhard et al. mention that the data is collected from a variety of schools and students with different

backgrounds, "...and students with special education requirements were also included in the sample" (2017, p. 434). Lenhard et al. conclude in their study that reading on screen affects the outcome of the students' reading, which means that the students had more mistakes in their comprehension tests done on screens versus the students who read on paper (2017, p. 442). However, the students who read on paper had a slower pace than the students who read on screens (Lenhard et al., 2017, p. 442). This study is relevant when discussing the benefits of reading digital texts for dyslexic and/or students with RD because it is easier to change the formatting of digital text. A possible issue is that the study is based on grades 1-6, which means that the students are at a lower level of reading compared to the teachers of grades 8-13 who are included in this thesis.

4.3 Strategies and Practices for Reading Comprehension in EFL Learners with Learning Disabilities

This section presents one study by Sencibaugh on reading comprehension intervention strategies for students with learning disabilities and lastly two studies, one by Awada and Plana (2018), and the other by Awada and Gutiérrez-Colón (2017), on strategies for reading comprehension in EFL learners with dyslexia.

Sencibaugh conducted "A Meta-analysis of Reading Comprehension Intervention for Students with Learning Disabilities: Strategies and Implications" (2007, p. 1), which analyses the results of 15 different studies that were done between 1985 and 2005 on comprehension intervention strategies for students with learning disabilities. The meta-analysis by Sencibaugh combines previous observation studies by analyzing strategies that are used to improve reading comprehension in students with learning disabilities (2007, p. 2). The fifteen studies included in Sencibaugh's meta-analysis yielded 23 different intervention strategies that were split into two categories: language/auditory dependent or visually dependent (2007, p. 7). This synthesis depicts a selection of different strategies and their impact on learning-disabled students, a term that encompasses diagnoses such as dyslexia and reading disabilities among other things. The studies included a total of 538 students, where 439 students were learning disabled, and 45 students were confirmed as poor readers (Sencibaugh, 2007, p. 7). Sencibaugh's analysis of the studies highlights the two general types of instructional strategies mentioned above, starting with visually dependent strategies that use pictures or other visuals in instructional activities to improve reading comprehension and secondly, auditory/language dependent strategies that are the use of language in both pre-and post-

reading activities to help with reading comprehension (Sencibaugh, 2007, p. 8). According to Sencibaugh visually dependent strategies can be activities such as “visual attention therapy, illustrations in text, and semantic organizers (e.g. semantic feature analysis) » and examples of auditory/language dependent strategies such as “summarization and main idea strategies, summarization training plus self-monitoring, attribution training, self-questioning, training in inference questioning, training packages (e.g. reciprocal teaching), paragraph restatements, story retelling, collaborative strategic reading, and text-structure based strategies» (2007, p. 8). Sencibaugh concludes that two important findings came out of the meta-analysis:

- (a) auditory/language dependent strategies have a greater impact on the reading comprehension skills of students with learning disabilities compared to visually dependent strategies and
- (b) questioning strategies involving self-instruction and paragraph restatements along with text-structure-based strategies yield the most significant outcomes.

(2007, p. 2)

Conclusion (a) reveals that the effect size of language/auditory dependent strategies is larger than the visually dependent strategy, and (b) can perhaps be received as a recommendation based on what kind of strategies came out on top when comparing it to other strategies. Students with learning disabilities are not as efficient in planning their tasks in an organized manner, which means that the teacher needs to train students in metacognitive strategies (Bender, 2004, cited in Sencibaugh, 2007, p. 11). According to Sencibaugh, this means the implementation of strategies that activate prior knowledge and that question the structure and purpose of texts are ways of teaching metacognitive instructional strategies (2007, p. 11-12). According to the results of the meta-analysis, the metacognitive instructional strategies had the most impact on both poor readers and students with learning disabilities.

Furthermore, “Mastropieri and Scruggs (1997)⁷ demonstrated that the intervention strategies, cognitive and direct instruction when combined, showed remarkable gains in reading comprehension” (Awada & Gutiérrez-Colón, 2017, p. 49). Mastropieri and Scruggs' findings (as cited in Awada & Gutiérrez-Colón, 2017, p. 49) are based on reading comprehension of the average mind, while a study by Awada and Plana researched the multiple strategy

⁷ This article was not available to me through the library, which is why I am citing it through Awada & Gutiérrez-Colón.

approach and its effect on dyslexic students. Awada and Plana's study was conducted on the effects of multiple strategies approach in connection to the reading comprehension of 7-9th grade Lebanese students with dyslexia in the EFL classroom and teachers' views on these methods (2018). The strategies that are researched are "...graphic organizers, visual displays, mnemonic illustrations, movie maker journaling and movie use, prediction, inference, text structure awareness, main idea identification, summarization, and questioning" (Awada & Plana, 2018, p. 463). These strategies were tested in several classrooms filled with students with and without dyslexia by 16 teachers, and the results of the study are based on the teachers' perceptions of these strategies (Awada & Plana, 2018, pp.463-466). The study does not specifically mention the number of students in these classrooms since the focus of the study is on the 16 teachers and the logs that they wrote during a 10-week period where the strategies were tested (Awada & Plana, 2018, p. 467). The previously mentioned strategies helped improve the pupil's reading comprehension of narrative texts, according to the results of the qualitative analysis of the teachers' reported perceptions that Awada and Plana did (2018, p. 463). Awada and Plana state that "the use of combined strategy instruction could help students." However, the teachers interviewed expressed that the strategies applied in the classrooms have both positive outcomes and some drawbacks (2018, p. 473). The use of any strategy would have different outcomes based on the group of students and how they apply and use the strategies individually. The teachers' perceptions combined show an ambivalent attitude to the mentioned strategies (2018, p. 463).

In another study by Awada and Gutiérrez-Colón, continuing the study on EFL learners with dyslexia in Lebanon, they researched the effect of inclusion vs. segregation using multiple strategy instruction in an environment where both dyslexics and non-dyslexics in order to improve reading comprehension of EFL learners with dyslexia (2017, p. 49). "It has been proved that combined strategy instruction enhances learning when applied to groups of students with dyslexia. Is, therefore, combined strategy instruction more effective than regular instruction in improving the reading comprehension within the frame of the inclusion theory?" (Awada & Gutiérrez-Colón, 2017, p. 53). In the prior study, by Awada and Plana (2018), the dyslexic students were placed in classrooms with students without dyslexia, which means that the study was set in an inclusive setting and the results were based of the teacher perceptions. The study by Awada and Gutiérrez-Colón "...reports the relative effectiveness of the inclusion theory when the combined strategy instruction on improving the reading comprehension of narrative and expository texts for students with dyslexia is

implemented» (2017, p. 49). However, the results of this study are based on the results of testing done on these students, and the tests were graded by the researchers, another scorer, and a teacher (Awada & Gutiérrez-Colón, 2017, p. 53). This study looks at 7th to 10th-grade students with a total sample of 298 students, whereas 17 of those students have dyslexia (Awada & Gutiérrez-Colón, 2017, p. 53). The participants were mixed and put into groups to stay within the concept of the inclusion theory and then split into control and experimental conditions where the experimental groups were to receive combined strategy instruction and the control groups received their regular instruction (Awada & Gutiérrez-Colón, 2017, p. 53). The participant all speak Arabic as their native tongue but come from different socioeconomic backgrounds. However, they all study English 6 hours per week at school (Awada & Gutiérrez-Colón, 2017, p. 53). Awada and Gutiérrez-Colón conclude their study by stating that reading comprehension improves when combined strategy instruction is implemented under the framework of inclusion theory in both dyslexic and non-dyslexic students when using narrative texts (2017, p. 53). However, they found no difference between the control group and the experimental group when using expository texts (Awada & Gutiérrez-Colón, 2017, p. 53). According to Griffin and Tulbert (1995), «expository texts are difficult for students with dyslexia due to the difficulties posed by the structures, vocabulary complex concepts, unfamiliar typographical features peculiar organizational structures, and numerous tables and figures» (p. 73), which Awada & Gutiérrez-Colón present as a possible reason for the ineffectiveness of the multiple strategy approach in an inclusive environment because the genre of the text causes more problems for the dyslexic reader (2017, p. 58). The students might need special attention in the classroom in the case of expository texts, meaning that the multiple-strategy approach was ineffective when dyslexic students are put into classes with non-dyslexic students (2017, p. 58).

4.4 Studies on Differentiated Instruction for Teachers of Struggling Readers

In an article by Vlach and Burcie, the narrative of the older (adolescent/teenager) struggling reader is discussed, including a perspective of the teacher's role in such a setting (2010, p. 522). According to Vlach and Burcie, struggling adolescent readers are often mistaken as having behavior problems or act invisible because they are frustrated and expect rejection (2010, p. 522).“Like many children in our classrooms, the school narratives for these children

have already been written” (Vlach & Burcie, 2010, p. 522), meaning that older children that struggle with reading have already been given a narrative that considers them unable to learn or not as smart as the other students. When people expect to fail it can be difficult to put effort into learning. “When children decide they have no agency with respect to their learning, their learning is limited in terms of both personal experience and potential trajectory” (Johnston, 2004, p. 41), which is also mentioned in psychologist Stanovich’s research on The Matthew’s effects in reading (Stanovich, 1986, p. 381). The article by Vlach and Burcie is relevant to the thesis because it suggests teacher practices can help these older students succeed in their development of reading skills and their comprehension as a byproduct. When students feel that they have agency in their learning, their narrative can change (Vlach & Burcie, 2010, p. 522). To meet the needs of the struggling reader, Vlach & Burcie suggest that a teacher “...has a unique opportunity to intervene in the narrative of the struggling reader” (2010, p. 522). This means that the teachers’ practice can change the students’ way of looking at their own abilities. According to Vlach & Burcie, the teacher can teach the students how to learn independently by receiving different instructions than that of their higher-level peers (2010, pp. 522-523). In their study, Vlach & Burcie found four instructional strategies that promote agency, such as interest surveys, anchor charts, quality small-group instruction, and turn and talk, the latter being a conversation with fellow students to promote partner reading, projects, or literature circles (2010, p. 524). This study is included in this section because the study suggests that differentiated instruction and specific strategies to promote reading can help students who struggle with reading.

In a study by Stover et al., the transferability from one-on-one instruction to differentiated instruction in the classroom is discussed in light of two teachers who, initially, had little knowledge of how to help struggling adolescent readers (2015, p. 60). Differentiated instruction is only possible when the teacher knows how to adapt to the reading level of both struggling students and higher-level students. “Like many secondary teachers, reading came naturally to them, and their secondary training prepared them to teach content rather than how to read» (Stover et al., 2015, p. 65). This quote explains the lack of knowledge about reading instruction in secondary school teachers. In order to have a successful differentiated instruction, the teacher would need to know the basics of teaching reading in addition to teaching content. According to Stover et al., “...it is common to find struggling readers

engaged in isolated skill and drill instruction and activities that perpetuate low literacy achievement” (2015, p. 61). This means that the differentiated instruction that can be found in some classrooms does more harm than good when trying to help students develop their reading skills and comprehension. According to Stover et al., for the two teachers that are discussed, individualized instruction of the struggling reader improved their process of differentiated instruction in the classroom afterward (2015, p. 60). The transferability of the strategies used in one-on-one tutoring seems to be based on the time allotted to get to know what the pupil is struggling with and continue to make an appropriate instructional plan (Stover et al., 2015, p. 63). One of the students that were acting out in the classroom lacked the word decoding skills necessary to be able to extract both meaning and vocabulary, so the teacher in charge of his instruction helped him learn reading strategies that would enable him to read longer words by splitting them up into several parts (Stover et al., 2015, p. 63). This word split strategy is one amongst several that the pupil learned in the individualized instruction and could now implement independently in class (Stover et al., 2015, p. 63), making it easier for the teacher to adapt her instruction in the classroom. Students are not identical in their struggles and strengths; therefore, teachers can use the information from individualized instruction and implement them in the classroom in differentiated instruction (Stover et al., 2015, p. 65). However, this article is written with individualized instruction to be an important part of meeting the needs of these struggling readers, and that might not always be possible for many teachers and students because of the administrative and economic aspects of getting resources (see 3.1.1) to do individualized instruction.

4.5 Teacher Cognition and Beliefs

This section will address two studies on teacher cognition, which is relevant to this thesis because of the teachers’ perspectives and beliefs on their own practice. These studies explain, amongst other things, the gap between teacher beliefs and what they actually do in the classroom. This topic is important to this thesis in order to discuss why the teachers in this study choose the practice and strategies that they apply, or do not apply, and also to discuss where they learned them. The first study that I present here is conducted by Borg, which is a review of:

...a selection of research from the field of foreign and second language teaching into what is referred to here as teacher cognition – what teachers think, know, and believe and the relationships of these mental constructs to what teachers do in the language teaching classroom. (2003, p. 81).

The article includes 64 different studies that were published between 1976 and 2002 (2003, p. 82). Borg discusses three main topics that correlate with each other: “(1) cognition and prior language learning experience, (2) cognition and teacher education, and (3) cognition and classroom practice” (2003, p. 81). A figure is included that represents four factors of teacher cognition, which sum up the topics well:

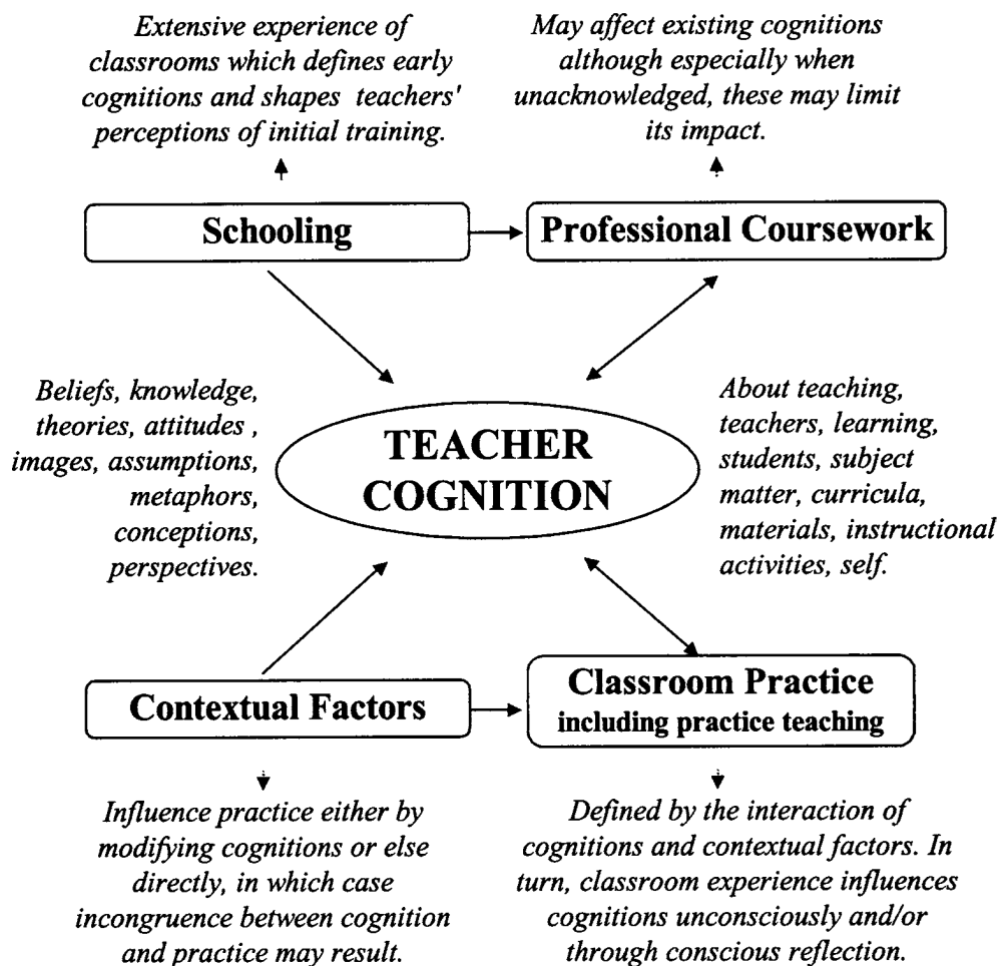


Figure 2: Teacher cognition, schooling, professional education, and classroom practice (Borg, 1997, as cited in Borg, 2003)

Borg (2003) is included in this chapter because it explains the mental processes behind teacher classroom practices and their development. The secondary research question asks where teachers learn their practices for differentiating for students with dyslexia and/or RD.

Borg's study can help explain this by looking at figure 2 where the interaction of cognitions and contextual factors influence classroom practices.

Another study that researches parts of what Borg refers to as teacher cognition is also added here to shed light on why teachers do not adhere to some of their beliefs when teaching. Haukås' study includes data from an electronic survey she conducted that was answered by 145 teachers (2012, p. 120). According to Haukås' survey (2012), she found that most of the teachers agreed about the importance of student involvement in language learning, which is a type of strategy presented in the survey for teachers to express their opinions. (Haukås, 2012; Haukås, 2020, p. 369). However, when they were asked if they implemented these strategies on student involvement in the classroom, most answered that they did not (Haukås, 2012; Haukås, 2020, p. 369). There are several different reasons why there was a gap between their beliefs and their classroom strategies, such as time pressure, lack of knowledge about strategies, examination evaluations, and expectations from the students and the school (Haukås, 2020, pp. 369-370). Haukås also states that if teachers are to develop and be receptive to new knowledge, they need to examine and become more aware of their own beliefs (2020, p. 371). Teacher development and their acquisition of new knowledge is relevant to this thesis as their professional development is connected to the quality of their teaching in relation to the differentiation practices and strategies for students with dyslexia and/or RD.

5.0 Methodology

This chapter will shed light on the planning process and reasoning behind the choice of method and research design, the selection and recruitment of interview subjects, the structure of the interview guide and the data collection process, the transcription-, translation-, and data analysis process. This chapter will also address various limitations and ethical considerations and conclude with a section on the validity and reliability of the research.

5.1 Research design

According to Adams, semi-structured interviews is a blend of close-ended surveys and open discussions that allows for both structure and the opportunity to adapt to the participant (2015, p. 492-493). The semi-structured interview is conducted with one person at a time, instead of the open brainstorming of focus groups (2015, p. 492-493). Before starting this project, I already had semi-structured interviews in mind, partly because it can allow me to learn from a teacher's professional practice from their point of view, but also because it offers the opportunity to adapt to the situation and interview subject (Kvale & Brinkmann, 2015, p. 35). I followed a prepared set of questions that were supposed to hold the same form throughout the interviews, however, the semi-structured interview allowed me to adapt to the interview subjects, by being able to rephrase or explain if the subject was unsure about what I was asking them. In addition, it gave me room to ask follow-up questions. According to Adams, the SSI (semi-structured interviews) "...employs a blend of closed- and open-ended questions, often accompanied by follow-up *why* or *how* questions" (2015, p. 493), which gave me the opportunity to explore the topic at hand in depth rather than immediately move on to the next question. Furthermore, the interviews were not done in a group setting, rather interviewing each individual, since the research is supposed to focus on the individual teacher's practice and not a collective practice. Interviewing one person at a time makes it possible to hold interviews when and where each participant wishes to meet. Furthermore, seeing as the interview is qualitative, with few participants, and with a focus on depth rather than generalizing teacher practices, it is impossible to generalize the data (Kvale & Brinkmann, p. 289). This excludes this thesis from being able to call the results a general or broad practice. However, it does allow finding the nuances of reading practices that are not generalized in the Norwegian school system itself.

The purpose of this thesis is to investigate how teacher practices can contribute to the development of reading comprehension in upper-secondary Norwegian students with dyslexia or RD in the English subject. A qualitative research design was chosen because, according to Kvale and Brinkmann, the purpose of the qualitative interview is to gather information about the interview subject's day-to-day life and their perspective on their experiences (2015, p. 44). There are no clear-cut rules for teachers in how they are supposed to make their practice within their curricular frames and each teacher comes with their own pot of ingredients, meaning that they have different educational backgrounds, abilities, and interests, which is why the interviews might give some insight into how the process of adapting for reading disabilities can look like. According to Hannabuss, a qualitative research method could also give me insight into why and how the teachers chose their practices/interventions (1996, p. 2), which I would not gain in the same manner from a quantitative approach. However, the use of qualitative interviews also means that the findings cannot be generalized because the results come from a personal point of view (Kvale & Brinkmann, 2015, p. 289). The topic of teacher practices for reading comprehension development in upper secondary/high school is not a primary focus in Norwegian teacher education. It means that it would be up to the teachers themselves or the schools to educate themselves on strategies suitable for students with reading disabilities. The qualitative interview might give insight into what kind of practices and strategies they utilize and how they learned them. The interview is also based on teachers with experience in grades 8th through 11th because of the focus on adolescents and older students. The English curriculum is also a part of why these grades were specifically included, as the curriculum for the English subject (ENG01-04), does not include program subjects of English in 12th to 13th grade, and teachers of younger students were not as relevant to this thesis because of the focus on older students. ENG01-04 is a mandatory subject, while program subjects are subjects from which the general study students in 12th and 13th grade can choose. The English program subjects, called English 1 and English 2, have other goals and competencies that would require additional considerations. The participants who worked in upper secondary schools might teach English program subjects as well, but it was not a topic or a question in the interview guide.

5.2 Selection and Recruitment of Participants

The research in this thesis is based on semi-structured interviews with five teachers from different Norwegian secondary schools. According to Adams, the semi-structured interview is appropriate if the interview subjects are well-spoken and educated on the issues at hand (2015, p. 494). The participants for this thesis were selected based on their experience as teachers in grades 8th to 13, and the majority of the selection was chosen based on their employment in dyslexia-friendly schools. For these interviews to yield as much useful information as possible, the participants needed to have some experience with issues connected to reading disabilities and adapted practices. The dyslexia-friendly schools have become increasingly common in Norway, and the schools that can claim this label have a set of 10 specific criteria that need to be adhered to by the schools (Dysleksi Norge, n.d.). Dyslexia-friendly schools require, amongst other things, that the teachers and the school discuss dyslexia-friendly practices and implement them (Dysleksi Norge, n.d.). Criteria nr. 7 specifically mentions that “The school must have a well-structured reading program based on research and recognized reading instruction strategies. This should be common practice in the classroom” (Dysleksi Norge, n.d., translated by myself). Therefore, the teachers working at these schools are highly relevant participants for the interviews. Out of the five participants who agreed to take part in the interview, four teachers come from dyslexia-friendly schools, and the last two teachers work at a school that is currently trying to transition into a dyslexia-friendly school.

However, finding participants and convincing them to take time out of their busy workday to participate in an interview without payment is challenging. It is important to include that most of the participants who agreed to take part in the interviews were known to me beforehand. However, none have particularly familiar relationships with me. One of the participants had a previous mentor relationship⁸ with me, which might cause a shift in the power balance and thus affect the interviews (explained further in 5.5). I met another participant through the Inland University of Applied Sciences. Two participants were found through a friend who is a teacher. The last participant was wholly unknown to me and volunteered through one of the schools that I contacted. Since I knew most of the participants beforehand, it might affect the interviews, which is important to keep in mind when considering the limitations of this thesis (5.5). Preferably, all of the participants should have

⁸ Context will remain unknown due to anonymity.

been new to me, but this was a convenience sample because they fit the criteria and volunteered. The rest of the messages sent to other potential participants, who did not know me or know of me beforehand, did not reply or declined. All of the participants who volunteered are teachers in grades 8 to 13. In addition, the participants vary in age, education, and workplace, which is something that can be beneficial to this thesis, as the answers are not limited to one school or one generation of teachers. Curiously enough, all the participants ended up being men, which seemed unlikely due to women having a larger representation as teachers in Norway (Statistics Norway, 2023) and that I did not intentionally seek out male teachers, but it might be interesting to mention. Due to anonymity, the participants have all received code names, and the age of the participants will not be revealed either, other than their years of experience as teachers.

5.3 Interview Guide and Data Collection Process

After reading up a bit on the existing research on my chosen topic, I constructed an interview guide to help me prepare for the interviews. The topic of the interview guide does not collect any sensitive personal information but is rather a teacher-practice-related interview about a topic of common relevance. The interview guide is split into five sub-sections and the topics are all relevant to the overall topic of this thesis. The interview guide was made with the thematic terms that are used in the rest of the thesis, focusing on reading comprehension, differentiation, reading practices, and strategies. Before conducting the official interviews, I tested the questions on a teacher that I know well who is not included in the findings, to find potential issues that can confuse the participants and/or lose potential data. It became clear that some of the terms that were used might have been a bit too broad, and the definition of them was unclear to the test subject. The test interview prompted changes to the interview guide, such as adding definitions of terms and concepts in case they are needed and adding, changing some follow-up questions that did not fulfill their purpose, or changing the sound of some of the main questions. The figure below (figure 3) is an illustration of the structure of the interview guide.

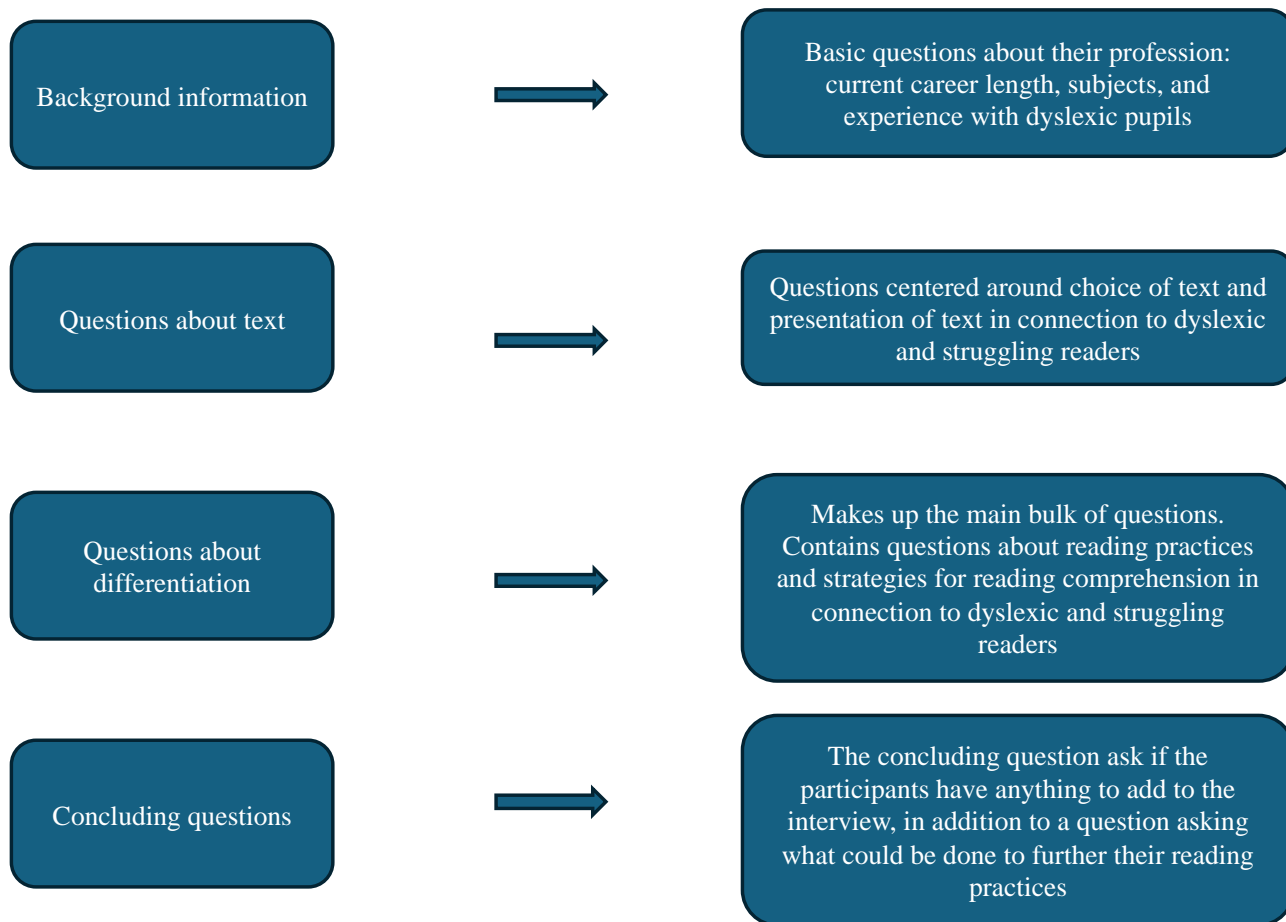


Figure 3 - Structure of interview guide

The data collection process – finding, contacting, and interviewing the participants, spanned from November 2023 to February 2024. The interviews started in January right after I received approval from Sikt – *Kunnskapsektorens Tjenesteleverandør*. The consent form was signed in person before the interviews to avoid the unnecessary work of making copies and scanning the document on the participant’s part, except for the digital interviews done over video call where the documents needed to be signed digitally or scanned by the participants. The data was gathered through sound recordings face-to-face, or over a video call with the recorder placed before the speakers of the computer. The data was collected through a recorder app on my phone and directly stored in *Nettskjema*, to be stored safely online. The interviews were held at their place of work within the time frame where they would already be there, to make it convenient. The participants were informed beforehand that the interviews would last for approximately 60 minutes, depending on how much they wanted to share. The interviews lasted on average 22 minutes. The time frame that was given initially was purposefully made

so that the participants or interviewer would not feel pressured to hurry the interview along, and perhaps miss some information in the process. In addition, the participants had the opportunity to choose between English or Norwegian when participating in the interview. The participants are all L1 Norwegian speakers, which means that interviewing in Norwegian was relevant in favor of making the participants as comfortable as possible and able to share as much as possible using the language and terminology that they use daily.

5.4 Transcription, translation, and analysis of data

Nettskjema, which was the site where I stored the recordings of the interviews, has a transcription service that I tested to see if I could find a more effective and easier way of transcribing the interviews. However, digital transcriptions are never 100% accurate and need to be checked for errors. To make sure everything was correct, I listened to the interviews and read the transcription. In addition, I needed to anonymize the transcript, which was done when checking for and correcting errors. The data collected is not intended to have a focus on pronunciation but rather on meaning and content, meaning that the interviews were not transcribed in a manner that put focus on timing, dialect, or any other spoken qualities that might have been relevant for a different thesis. However, according to Kvale and Brinkmann, the transcription of interviews will always be somewhat decontextualized and not as authentic as the spoken interview (2022, p. 205). When transcribing, Kvale and Brinkmann also comment that text is easier to use and that the amount that is transcribed depends on the purpose of the interview (2022, p. 2016). This means that the analysis in this thesis is focused on meaning. When the transcriptions were done, I needed to translate them into English since all of the interviews were conducted in Norwegian. However, the translation process did not take place until after I had condensed and sufficiently coded the data to avoid unnecessary translating work. The transcription and translation process can, however, create a loss of meaning. To avoid a loss of meaning, I checked the transcriptions several times while listening to the audio files to make sure nothing important got lost in going from spoken to written format. When translating the quotations into English, I considered possible synonyms (using online dictionaries) according to meaning and tried rephrasing to look for better formulations where I thought sentences missed some of the meaning behind the original transcript.

To succeed in doing valid qualitative research, Kvale & Brinkmann suggest that the analysis starts with making the interview guide and knowing the purpose of the questions (2022, p.

220), which is also mentioned in Dalland (2017, p. 87). The purpose of this thesis is to ask which reading practices and strategies can/do teachers use to differentiate for 8th-11th grade students with dyslexia and/or RD, where they learned them and what is potentially keeping them from learning/doing more. These are all questions that are directly and indirectly asked in the interviews. However, there are certain techniques for analysis or tools, as Kvale and Brinkmann call them, that can make the process easier and more directed toward a specific form of research (2022, p. 221). According to Anker, there is no certain or preordained way of analyzing empirical qualitative data (2020, p. 19-20), which means that the author has agency when analyzing, and I needed to be aware of what I was looking for to succeed at analyzing a considerable amount of transcribed material. Anker describes the analysis process as four phases, while Kvale and Brinkmann describe six phases (2020, p. 20; 2022, p. 222). However, the content of the phases is more or less the same and remains a suggestion for the reader and researcher. Starting with having a good idea of what the purpose of the interviews is, and then moving on to the collection process, narrowing down the material, coding, and looking for patterns and commonalities. After reflecting on what I would like to know from the interviews and after conducting them, I decided to narrow down the collected data by picking out the relevant parts and putting them in categories that were based on the main topics in the interview guide. These categories became the codes from which the analysis is conducted. This method of coding can be referred to as data-driven coding (Kvale & Brinkmann, 2022, p. 227), which is a process where I started to process the data without codes, and the codes were created as a result of my interpretation of the data (Kvale & Brinkmann, 2022, p. 227). To keep track of this, I made a table with the codes, explanations of the codes, and examples of data from the transcriptions (see appendix 2). The codes in this thesis are made up of four main codes, where one of these codes, *differentiation practices and strategies*, is split into two sub-codes. The sub-codes were made because the original code held a lot of meaning which could be investigated further by splitting it into lower-level reading practices and strategies and higher-level reading practices and strategies. The different levels of reading are defined by The Ministry of Education and Research (2017, p. 14-17).

I remain a bit unsure about the most effective ways of organizing the data, but this is also a learning process for me. Kvale and Brinkmann explain this process as an analysis with a focus on meaning, splitting it into three parts of coding: coding the meaning, condensing, and interpretation (2022, p. 223). For this thesis, coding meaning and condensing were done

somewhat simultaneously. The analysis (chapter 6.0) presents both results from the coding and an analysis of meaning.

5.5 Limitations to the Methodology

Doing interviews is a skill that needs to be practiced and well thought out beforehand (Hannabuss, 1996, p. 24; Kvale og Brinkmann, 2015, p. 34), which means that my inexperience is a limitation. However, to prepare for the interviews as thoroughly as possible, I did a test run of the interview, which allowed me to improve the interview guide and avoid misunderstandings that could potentially influence the validity of this thesis. It does not remove the limitation, but it has helped improve the interview guide and made me a bit more confident in the process. The limitation that is my inexperience created obstacles for me along the way, both in making the interview guide and in conducting the interviews. I experienced that I lacked practice in anticipating where I needed to dig deeper and where I needed to move on. I was not wholly prepared for the lack of answers when I asked about differentiation strategies to help dyslexics and/or students with RD (Q:11-17, Appendix 1).

Another limitation I have been unsure about the consequences of is the recruitment of the participants that I knew beforehand, especially the participant with who I have had a brief mentor/student relationship. According to Kvale and Brinkmann, an asymmetrical power relation can affect the interview if not properly thought out and prepared for beforehand (2015, p. 175-176). According to Kvale and Brinkmann, possible reactions to a shift in the power balance can be to withhold information, start to question the researcher's choice of questions, or fail to show up (2015, p. 52). However, I approached the participant with the air of wanting to learn more about my chosen subject and perhaps being careful about my approach and tone when asking about the whys of their professional choices. The interview is not confrontational but rather meant to ask for someone else's expertise while at the same time being confident in the questions at hand. None of the participants questioned my authority as the interviewer. However, it is difficult to know whether information was held back or not. The reason the participant, who had a previous mentor relationship with me, became an affordance for this thesis is because the participant was highly relevant due to his job at a dyslexia-friendly school. Since he also knew me beforehand, he took the time to volunteer, where most of the emails I sent to unknown teachers failed.

Lastly, the use of terms regarding students with dyslexia and/or RD was broadened in the literature search for this thesis. The terms struggling readers, poor readers, and learning disabilities are included in this thesis when presenting or discussing theory or previous research. Most of these terms are not defined by the researchers or defined as being below a certain level of reading (see 1.0). The term learning disability is a broader definition of what is referred to as a reading disability. The use of these terms can limit this thesis as they are not included in the research questions. However, the use of the studies that include this term became an allowance because of the considerable gap in research. All of the studies included serve a purpose in discussing dyslexia and/or reading disability in older students.

5.6 Validity and Reliability

There are multiple paths to discussing validity and reliability in research. One of these paths is the use of a specific terminology meant to be the criteria of what research one could trust as being of good character. These are the criteria initialized by Guba and Lincoln (1985) and added to in 1994: Credibility, dependability, confirmability, transferability, and authenticity (Cope, 2014, p. 89).

Credibility refers to the truth of the data or the participant views and the interpretation and representation of them by the researcher...Dependability refers to the constancy of the data over similar conditions...Confirmability refers to the researcher's ability to demonstrate that the data represent the participants' responses and not the researcher's biases or viewpoints...Transferability refers to findings that can be applied to other settings or groups...Authenticity refers to the ability and extent to which the researcher expresses the feelings and emotions of the participant's experiences in a faithful manner. (Polit & Beck, 2012, as cited in Cope, 2014, p. 89).

These criteria have been followed in this thesis by taking certain precautions such as sending the transcripts back to the participants to double check for any potential disagreements on meaning and/or tone, including a substantial number of direct quotes in the analysis and discussion in addition to coding the data several times, testing the interview, reflecting on limitations, and generally trying to be as transparent as possible. However, the term transferability is difficult to discuss with this thesis in mind, as it is a qualitative master's

thesis with a small pool of participants. By transferability, I refer to the possible rerun of my research and how qualitative data does not have the same transferability as the quantitative research method would have. Furthermore, for this thesis to be as authentic as possible without having the issue of not adhering to the issue of transferability, the number of direct quotes from the transcriptions paired with a discussion of the research question arguably make this thesis reliable and valid.

Furthermore, reliability is defined by Angrosino as “A measure of the degree to which any given observation is consistent with a general pattern and not the result of random chance” (2007, p. 99). Which is dependent on the thorough coding of the interviews and the consistent use of quotes from the transcripts. In order to make sure the coding was reliable, I repeated the process several times to make sure I came up with the same results and did not miss any important aspects of the interviews. The issue of validity in qualitative research raises questions about the objectivity and character of the research (Kvale & Brinkmann, 2015, p. 272). It can be referred to as the critical discussion of the end goal of the collected data and whether it answers the questions that were posed in a relevant manner (Anker, 2020, p. 109) or as “A measure of the degree to which a research finding actually demonstrates what it appears to demonstrate” (Angrosino, 2007, p. 99). A way of testing the validity of this research was to do a test run of the interview to check for possible misunderstandings and if the questions reached their purpose. The test run made sure that the data gathered in hindsight would be valid and reliable in terms of analyzing and using it for this thesis. Furthermore, the interview participants were a blend of different people in terms of age, place of employment, and experience. This can potentially make the data more unique and not reliant on one group of teachers and the bias that might conjure.

According to Kvale and Brinkmann, “Objectivity in qualitative research means that you strive for objectivity about subjectivity” (2015, p. 273), which means that subjectivity in research is unavoidable, however, the validity and reliability is still there, as long as the researcher reflects upon their prejudices and how that might have influenced the research. This reflection is also one of the aspects of which one can learn from qualitative research (Kvale & Brinkmann, 2015, p. 273). To avoid inherently subjective perceptions of the participants in the analysis, I reflected on terms that might have negative connotations attached to them and removed or changed them to more neutral terms. This gave me some insight into my own perceptions of the participants.

5.7 Ethical considerations

Rachlew et al. argue that the purpose of the interview must be clear and with the integrity of the participants in mind (2020, p. 42). This means that one of the ethical considerations that is important to think about while doing interviews is that the integrity of the participants is kept intact, amongst other things. The interviews and the interpretation of the interviews are methods of forwarding information, and it is important to be aware that the thoughts and experiences that are shared and used in research belong to someone else (Rachlew et al., 2020, p. 42). When analyzing and using the interviews, having the integrity of the participants in mind became an important focus, which means that even though the results are based on my interpretations, they needed to be done with the message and intent of the participants in the center.

Furthermore, according to Kvale and Brinkmann, four guidelines have traditionally been a part of ethical discussions for researchers: informed consent, confidentiality, consequences, and the researcher's role (2015, p. 102). Informed consent and confidentiality were prepared for and approved beforehand. The interviews were approved by *Sikt – Kunnskapssektorens Tjenesteleverandør*. The interviews were anonymized while transcribing the interviews, and no sensitive personal information was shared through the transcribed interviews. The intention of the interview was to gather information about their practices and not anything that could compromise or raise ethical issues connected to identifying the participants. Before conducting the interviews, a consent form with information and personal rights was presented and signed by the participants. The issue of consequences and the researcher's role was reflected upon during the entire process. It remained important to stay open to potential dilemmas. Considering the interviews were not asking for sensitive personal information, the potential ethical consequences were not monumental but still necessary to keep in mind. Throughout the interviews, I was careful to inform the participants not to share any sensitive information about themselves or their students. The role of the researcher is connected to the quality and reliability of the research. To keep this focus while interviewing and later presenting the data, transparency and a clear connection between the questions and the goal of the analysis were important. Personal conduct and professionalism are part of this ethical consideration and have been an important thought while conducting my research, in trying to be as considerate and professional as I could be.

6.0 Data Analysis

This chapter presents the results from the coding of the collected data in combination with the analysis, which is an analysis strategy that is colored by the choice of method: the semi-structured interview. In other words, the processed data from the collected interviews is presented in this chapter. As mentioned in the methodology chapter (5.4), this analysis is conducted with a focus on meaning: coding the meaning, condensing, and interpretation (2015, p. 223). All of the quotes that are extracted from the interviews are originally in Norwegian and then translated into English by me, which means that some language aspects will disappear in the translation, such as Norwegian idioms, but not any aspects that will harm the overall meaning. The analysis is structured and sorted by theme/code, starting with the teachers' perceptions of students with dyslexia (6.1). Additionally, a section about the teachers' choice of text and formatting (6.2) and a section on differentiation practices and strategies (6.3) are added. Section 6.3 is split into two sub-sections: lower-level reading strategies(6.3.1) and higher-level reading strategies (6.3.2). Lastly, a section on the development of teacher practices is presented (6.4). These topics are the four main themes of the interview, and the questions are labeled as such in the interview guide. In addition, these sections and subsections are presented in the same pattern as the coding form, which means that this chapter is presented code by code, the codes being the section titles. This is done to make it easier for the readers to follow my train of thought and to keep order for myself as well.

The participants are made up of five teachers, two with a background in grades 11-13, and three with a background in grades 8 -10. Two of the teachers (8-10) do not work at dyslexia-friendly schools and the remaining three teachers all work at dyslexia-friendly schools. The participants are referred to as U1, U2, U3, V1, and V2. The U stands for grades 8-10 and the V stands for grades 11-13. U2 and U3 do not work at a dyslexia-friendly school, as defined by *Dysleksi Norge* (2023).

6.1 The participants' perceptions of students with dyslexia

At the beginning of the interview, the teachers are asked a couple of background questions where one of which is a question about their experiences with dyslexic students regarding how they perceive these students in forms of motivation and behavior. In addition, the interview itself is made up of questions about dyslexic students and students with RD, which

makes room for personal attitudes toward reading disabilities in general. All of the participants were aware of and reflected upon some of the diversity among the students who possess the dyslexia diagnosis. Below are three examples of how the teachers answered the question about their experiences with dyslexic students:

U1: In a way, you have two types of dyslexic students, in my experience. You have the high-achieving smart girls who work extremely hard, and then you have the lower-functioning boys who act out.

V1: Many see it as not much of a challenge. And then you have those who really struggle, who clearly have difficulties with dyslexia, who can't manage; they need a long time to read, simply put. And to understand what they're reading. And then there's the last group that is a bit more, perhaps using it as an excuse to avoid taking a shortcut in terms of doing everything they need or should.

U2: A student I had a couple of years ago, who was very motivated and very aware that he needed to put in more effort than others to become proficient in writing. He printed out exam answers and preferred to review them on paper. So, he accepted it as a challenge. And then there are others, someone who uses the dyslexia diagnosis to find ways to evade tasks... So, it's the whole spectrum.

These teachers, along with the other teachers seem aware of the diversity of the students, and that the way they deal with the disability is individual. They share reflections about their motivation, that some use the disability as an excuse or perhaps act out and refuse to participate because of their struggles, and that on the other end of the scale, there are students who are highly motivated to do well and work more as a result. They all express that dyslexia does not necessarily determine their pupil's motivation to do well and participate. However, participant U1 comments that the motivation is connected to gender, which the other teachers do not. This reflection could potentially be a comment on the culture he has experienced at the school he works at. U2 and V1 express frustration over the students who "self-diagnose" and put them in the category of "someone who uses the dyslexia diagnosis to find ways to evade tasks". V1 states that "dyslexia in itself is something that one would preferably see diagnosed but there are many who claim they have it, and many who may unknowingly have

it without ever having been diagnosed”. This statement gives way to a perception within these teachers, that there is a divide between dyslexic students and ordinary students and allows very little room for the grey area that is reading disability and the possible intervention strategies that need to be considered. U2 was very clear on the students’ own responsibility to pull through and motivate themselves: “We don’t need to be rocket scientists to conclude that the traditional medicine for improvement is practice”. U2 also comments that “there will always be a range in the reading abilities of the group of students”, which explains his perception that the students have their own responsibility in motivating and helping themselves if they follow the same curriculum as everyone else. This perception of struggling readers is centered around a more old-school way of thinking about the teacher’s role. V1 seems to be more inclined toward more differentiated instruction to adapt to their disability and seems to be more aware that learning disabilities are different from other struggling readers, while U2 does not perceive the dyslexic students as less capable of following the same instruction as the other students. V2 seems highly aware of the technical issues that come with the disability and briefly explain parts of the mental process of reading for a dyslexic pupil during the interview: “The issue with a lot of dyslexics is the mistakes made in coding letters along with sound”. Being informed about the disability might change perceptions of these students as well. By coding, this teacher is referring to the decoding of words and issues with phonological processing, which is in Dysleksi Norge’s official definition of dyslexia, and is most likely the definition he is working with since Dysleksi Norge is their primary source of information due to their involvement in the schools process of becoming dyslexia-friendly. V2 is very aware that the issues a “neurotypical pupil can make are fundamentally different from students with a learning disability”. The teachers from the dyslexia-friendly schools seem a bit more aware of the challenges the dyslexic students face, which the “neurotypical” students do not experience in quite the same way. However, participant V2 was perhaps the most aware and eager about presenting his reading practices.

6.2 Choice of text and formatting

The second part of the interview contains questions about text and formatting and asks about how the teachers adapt for dyslexic and RD readers. The choice of text and how the text is presented can be a way of differentiating or adapting for students with reading disabilities. Collectively, the teachers did not put a lot of effort into finding texts, most have access to digital resources and text that are picked and collected for educational purposes. The texts

they choose are mostly short informative texts or “shortcuts” from novels. The three 8-10th grade teachers all select texts from *A-univers*, which is a digital resource for teachers that contain teaching materials and texts for all subjects in the LK20 curriculum. U1 states “We use a lot of informative texts or texts from *A-univers* that are shorter fictional texts and such”. U3 states: “We might have become a bit lazy in that department, that we chose the texts that are served to us through *A-univers*, and then we have the English book *Searching* as backup. We should get better at finding our own texts.”. *Searching* is an English curriculum book meant for grades 8-10. The *Searching Learners* book is written by Fenner and Nordal-Pedersen in several different editions published by Gyldendal. U2 has been a teacher for 30 years and has a collection of short texts that are paper copies or texts from the book that they use in the English subject. U2 talks about using A-universe but never as a digital reading experience. U2 chooses “...texts that have a language in which it is easy to look at the language bit, that includes both fiction and non-fiction” and “mainly use physical teaching materials”. The 8th- 10th-grade teachers focus on reading short texts as a way of adapting for struggling readers and varying between fictional and non-fictional to differentiate the texts so that the students will get to read their preferred genre at some point.

Participants V1 and V2 mainly choose short texts as well, to adapt for the struggling readers. Both vary between fiction and non-fiction, similarly to the 8th-10th grade teachers, however, V1 and V1 have both various vocational and general studies students, where they both remark on the difference between what vocational program⁹ these students chose and the type of text they prefer to read in class. V2 says that “In some vocational classes, I find that they are much more receptive to more factual texts and the utility-oriented aspects of English, while others may be more open to the exploratory side of English and could read more literature». V1 says something similar: “If I have a group that is... interested in reading a bit more fiction, we do that. But it's very rare in vocational classes. It's mostly vocational texts and vocational topics that engage them.” V1 also notes that giving the students text that motivates them makes it easier for the reluctant readers to engage in the text and want to comprehend its content. To adapt these texts, V1 states that all of the texts he chooses are put into *One Note* or any other office-based tool that can read the texts out loud. V2 also talks about Lingdys, which can read texts out loud for struggling dyslexic readers. Lingdys is a digital reading and writing tool that can be bought and downloaded on computers and such

⁹ Vocational training programs such as building and construction or health and early development.

and is specifically made with dyslexic issues in mind. The schools usually buy's a license to provide the tool for their dyslexic students. For example, you can use the tool when writing on other tools such as Microsoft Word, or you can use it to have text read out loud.

The participants were also asked if they had their students read entire novels. U3 and U2 do not use novels in their classes, and U2 states that "We don't read books systematically, it is a while ago at least. The current curriculum does not include it as a requirement.". The participant did not state when they last read a novel, and I did not follow up on it. U2 says that the reason for not using books is because "it would create a greater distance since the best readers would like to read the book, while the poor readers would do everything, they can do to avoid reading...". U1 states that they try to read at least one novel a year, however, they don't necessarily read the entire book: "Like now, in 10th grade, we read *The Fault In Our Stars*, but only 11 out of 25 chapters before we saw the movie". U1 adapts for the struggling readers by reading out loud in class: "and they have paid attention while we read, and then we stop at difficult words and train with using a dictionary, or get the word read aloud on Google translate.". V2 also chooses chapters to read and then works on comprehension. V1 uses entire novels but also reads the text out loud to make sure everyone is following along.

Furthermore, the participants were asked if they considered the format of the texts before presenting them in class. They were also asked if they had changed digital text by changing the font, size, and spacing. V2, U1, and U3 consequently change font, size, and other aspects that would make the text more readable. U3 states that his reasons for changing text are "If I am not happy with the font size, spacing, and the length of the paragraph I will change the text. I like good spacing and structured paragraphs, as then it is cleaner, and you get a better overview.". U1 has a set standard formatting that the teachers at the school he works at and himself use: "We try to stick to Calibri or Areal, and font size 14 mostly. If it is in another font and we can change it, we do.". Calibri and Arial are both sans-serif fonts. In addition, U1 makes use of artificial intelligence to change the language, if the text he wants to apply uses advanced language, in addition to using it to change font and size: "I often use artificial intelligence to simplify the language and to get it rewritten" and "If it is a picture or a PDF file that we can't change, we just mark everything and it changes the font and size. We do this because the students expect everything to be a certain way, to standardize things". The emergence of artificial intelligence, in the case of U1 it is mostly chatgpt, has been a fear for

some teachers, however, teacher U1 remains optimistic about the positive changes it can cause for dyslexic students and their teachers alike. It could poetically provide students with explanations of difficult texts and help teachers adapt formatting and language in texts for students.

V1 expressed that he does not regularly change the format of text before presenting it to the class, however, V1 is informed of the benefits of doing so, since he works at a dyslexia-friendly school and has received information on the subject. V1 states that he sometimes changes the font and size, especially when presenting reading material or assignments on One Note “I have a standard font and size that I use a lot.” “However, it is not something that I think about a lot”. Lastly, U2 states that he never changes the format of the text: “No, no, I rarely do any changes, we mainly read on paper. It’s the size that exists on that paper that goes”. U2 firmly states that there will always be students with different skill sets and some will always be better than others: “Some are steadier, some master things better, and some struggle more. Some find it more challenging to stay motivated so that just has to be accepted.”.

6.3 Differentiation practices and strategies

There are many other ways of differentiating for dyslexic and/or RD students other than the choice of text and formatting. A section of the interview which this code reflects is general questions about their practice and what kinds of strategies they apply in the classroom. Practices and strategies are connected as practices are the collection of strategies that the teacher applies in the classroom. Therefore, there is an initial question about practice and then the interview guide moves on to ask about more specific strategies. While piloting the interview, I understood that the test subject did not understand the term reading practice which is why it was necessary to explain what a reading practice is in the interview guide: Reading practices are more than just having your students sit down and read, it is everything you plan for the students to do in preparation for reading and for processing (comprehending) what they have read, in addition to how the students use what they have read. Most of the teachers remained a bit unsure about the distinction because the term can be used in so many ways, as both teacher practices and student practices. However, the initial aim was to learn about both the teachers’ practices and what kind of practices or strategies they taught for the students to use themselves. The answers blended somewhat into each other, making it a bit

more difficult to gather what they do daily compared to what they do sometimes. In addition to reading practice, these differentiation questions were asked in connection to reading disabilities, which is why this section is split into two sub-sections. The two sub-sections are made up of the strategies they use or know that can help dyslexic or RD students who struggle with lower-level reading issues in a higher-level reading class, and the second sub-section presents the strategies that help these struggling readers with higher-level comprehension.

6.3.1 Which practices and strategies target lower-level reading?

This analysis of lower-level reading strategies is based on the Norwegian Directorate for Education and Training's descriptions of the levels of reading as a basic skill (The Ministry of Education and Research, 2017, p. 14-17), and the specific mention in the English curriculum explaining what the development of reading means in the subject:

The development of reading skills in English progresses from experimenting with phonemes and speech sounds, spelling patterns and syllables to reading varied and complex texts with fluency and comprehension and being increasingly able to critically reflect on and assess different types of texts. (The Ministry of Education and Research, 2019).

Since dyslexic students might struggle with issues such as decoding words, strategies that target lower-level reading skills might be necessary to help them follow a higher-level reading class. The strategies that all of the teachers seem to do consequently is selecting short and simple texts, as mentioned above in the section about the choice of text. Other strategies that is repeated by several of the participants are using context clue strategies, activating previous knowledge, and using digital tools that have the text-to-speech function or reading out loud. Participant U1 stated that they “use a lot of listening, so that they read and listened at the same time” and continues to say that it is either by text-to-speech tools, such as Lingdys, but mostly the teacher reads out loud. Another strategy U1 uses to help students that struggle with new or difficult words is to stop on those words and have them actively use a dictionary: “A lot of training with the dictionary and having it read out loud on Google Translate”. By using a dictionary, they study the meaning of words and tools such as *Google Translate* help them learn how to pronounce the words. Participant U3 states that «Presently, Lingdys and

Lingwrite is used, but also the one with a lot of functions in Microsoft Word. The one with text to speech. It also exists in *A-universe*". Participant V1 and V2 also use text-to-speech tools in class. V1 states that "We have... all the students at our school have access to Lingdys. So everyone has access to it. I use OneNote. Then everything is integrated, and it is a tool they can all use later in life". Lingdys is a program mostly just available for dyslexic people, so by teaching the students to use OneNote, V1 makes sure that everyone who struggles will have the opportunity to have a text-to-speech tool later in life as well. Getting dyslexia-friendly tools and other resources can be difficult for some people who do not have a dyslexia diagnosis, which means that RD students who do not have dyslexia would benefit from learning how to use OneNote. V2 comments that Lingdys is available and used for dyslexic students at his school, but he also uses audio files in plenary sessions with the class: «When we read through the text, we often do it together with everyone, and secure an audio file, then I play it, and then I often pause and break up the text into natural thematic sections... so we read through a bit, take a short break and then summarize with everyone what we just read.». Breaking up text and helping students with thematic comprehension in addition to using audio files is V2's way of integrating a practice that benefits everyone who might struggle with comprehension in connection to pronunciation and decoding words. Using text-to-speech can be a way of exercising word-level comprehension while reading, to succeed in reading and comprehending longer and more complex texts on a higher level of reading. In addition, using text-to-speech tools and such might help dyslexic students in particular with reading fluency and phonological memory, which might lead to a more successful reading in a higher-level reading class.

Context clue strategies are reading strategies that focus on using pictures and headlines and such to understand the words that the pupil is unsure of. Context clue strategies are relevant comprehension strategies for English learners who read at a lower level, or it can help older students with a reading disability such as dyslexia. One of the issues dyslexics can face is reading words wrong and misinterpreting the sentence might be a consequence of that. By applying context clue strategies, it might make it easier to reflect on it and why it does not fit into the context of the text. Participant U1 presents his reading strategies, and reflects on the use of context clue strategies:

"...and then I actively engage more afterward, like using Bison. We look at pictures and go through the titles, getting an overview. Skim through before delving deeper.

Forming the overview, so you know what's coming. If we look at literary works, I'm more into reading the sentence, not the words. That is, understanding sentence by sentence, not what each individual word means. It often gets a bit odd if you go word by word through something.»

U1 mentions BISON, which is the Norwegian name of a context clue strategy which involves five different components; looking at pictures, reading the introduction or the first paragraph, reading the last paragraph, reading headlines, and looking at words marked in italics and/or bold. This is a common reading strategy that has had a lot of focus in Norwegian schools. The strategy is mentioned by participants U3 and V1. V2 never mentions BISON but explain that “We often spend some time scanning the text, just to get a feel of how long the text is, what the headlines are, what the pictures can tell us, and the picture texts.”. Getting an overview of the text before reading can be a strategy for struggling readers to be more aware of the topics of the text beforehand and might make it easier to correct coding mistakes. If you read a word as something else, the process of reflecting on context to find the right word might be less challenging, especially for the students who struggle with decoding words, which can lead to misunderstanding the meaning. U1 mentions in the indented quote above that they read through sentence by sentence in the text, because it makes it easier to work on comprehension, while reading word for word would harm the extraction of meaning. When you read the sentence, the word that the students would find unclear might become comprehensible by also knowing the context of the sentence and knowing the purpose of the text.

Moreover, U2 explicitly mentions that he does not differentiate for the struggling reader in any particular way, other than avoiding novels and long texts. Most of the participants see the values of reading novels and U3 comments that he finds it regrettable. However, motivating students to read an entire book can be difficult and reading the entire novel out loud in class eats away at an already restricted schedule. Unless they have an individualized instruction plan, U2 states that the dyslexic students follow the same class as the advanced readers do. A significant finding in the collected data for this thesis is the lack of focus, and therefore knowledge, about differentiating for poor readers in the selection of teachers who participated in the interviews. U2 specifically comments on the use of text-to-speech: “We have bought materials from *A-univers*. They have audio files for all their texts. That is very relevant to do, especially for the weakest readers. But that is a double-edged sword. You comprehend the

content of the text but is it a good way to practice reading?”. This reflection is reliant on the way the teacher uses text-to-speech tools or audio files. When using digital tools, or any kind of tool in a classroom setting, the teacher needs to be competent in how to use it to teach the students that need it. Text-to-speech tools can potentially be a good differentiation practice if it is used in combination with reading. U2’s comment is perhaps a reflection of the loss of reading exercise if the students avoid reading altogether when they get another alternative for comprehension. However, in the definition of dyslexia word coding is a specific problem that these students often have, which makes reading while listening a way of differentiating for these students, especially in higher-level reading classes, where the focus lies on comprehension and use of the text’s content. In lower-level reading classes, the content would hold less focus than any higher-level reading class. U2, who works in a secondary school (8th-10th) argues that the exam form that came with the LK20 curriculum is built in a way that listening and reading are two different things, and they are both tested separately: “On the end of term tests, there is a separate part of the test that is called *listening* and another one that is called *reading*”. Listening is fine, but should it be possible to listen to the reading parts of the test if we are meant to measure reading and listening separately?”.

U2 also states that his reading practice is centered around training and exposure to texts and compares reading to sports: “We have copied the method from sports and other areas of society, and that method is practice. Exercise. We know that it works”. In addition, U2 is very clear about the variety of skills in a class full of students, and that there will always be high-achieving students and some who struggle more. U2 states: “If we have students that don’t follow my usual class, that have their own individual education plan (IEP), they might get their own texts.”. However, most dyslexic and/or RD students would not follow an IEP. U2 does mention a couple of strategies that he uses in his classes, such as group work and popcorn reading¹⁰. Group work can be considered a lower-level reading strategy if it is done with consideration of the dyslexic or/and RD readers. Having smaller groups that are approved by the RD readers to listen while they read is better than having to read out loud in front of an entire class (Dysleksi Norge, 2019, p. 18).

¹⁰ A reading strategy where the teacher calls on individual students to read a short paragraph and then moves on to the next until the entire text is read. Popcorn reading can be somewhat inefficient if only a few students are willing to read.

Participants V1 and U3 agree that they should do more to differentiate for the struggling reader, and V1 experienced the interview as a prompt to put more focus on the topic: “No, but I should probably focus more on that. That is the nice thing about these interviews, they make you consider and think about things. I should spend more time on reading strategies for struggling readers. It is something that we have gone through together, but something that should have been repeated and practiced more with the weaker readers”. Participant U3 is in an interesting position because he has followed his students from first grade and up to 8th grade, having been a teacher for both younger and older students. U3 states that when the students were younger, they did a lot more work in preparation for reading than they do now in the 8th grade. “We were better at it before, in primary school. They would often read the text beforehand as homework, we used reading strategies more often, such as Bison. In lower secondary school we usually go directly into the text. We should probably take more time to work with it beforehand as we did in elementary school.”.

Furthermore, two additional strategies were mentioned by some of the participants, which is activating previous knowledge and close reading. Activating previous knowledge is a learning strategy that can be beneficial for both lower-level reading and higher-level reading, however, in a lower-level reading context, it might be more related to comprehension than higher-level reading, where activating previous knowledge is more focused on academic knowledge toward a more critical and analytical reading. Therefore, this learning strategy has multiple uses. This is also the case for close reading strategies. Close reading on lower-level texts would have a different use and purpose than close reading on longer or more complex texts. Struggling readers, especially dyslexic’s who often read at a slower pace and have to concentrate on reading words correctly, they might find it difficult to skim through text. Therefore, close reading as a lower-level strategy can be a necessity for older dyslexic readers as well. The strategy will be defined in this thesis by splitting it into two different levels of close reading: close reading for word coding and comprehension versus close reading to perform literary analysis on a higher level of reading. The participants name-drop close reading and activating previous knowledge as strategies they use, however, none of them are particularly clear, nor do they go into detail about how they implement those strategies, with the exception of participant V2, who talks about close reading as a higher-level strategy and as a lower-level strategy. V2’s reading practices are a combination of Bison, text-to-speech, activating previous research, and close reading which he explains as “we read through a bit, take a short break and sum up what we just read. What did this

section talk about? So that we get to process the information we have read”. Dyslexic students in particular tend to prefer close reading because they struggle with reading strategies such as skimming due to their slower reading pace (University of Oxford, n.d). Therefore, lower-level close reading is perhaps one of the more dyslexia-friendly reading strategies. Even though most of the participants do not reflect on the method, it is a common reading strategy in a school setting, which could be the reason why the teachers do not explain further.

Another strategy that is talked about in the interview is the use of film, especially in connection to reading text beforehand. V2 states that reading has gained a broader definition and says that “reading movies” can be a significant strategy if it is done with a specific purpose in mind. This form of reading is also defined as reading under basic skills in the curriculum where it says, “Reading in English means understanding and reflecting on the content of various types of texts on paper and on-screen” (Ministry of Education and Research, 2019, p. 4). V2 continues to say that “...we read films as well, as long as we benefit from the literary value of it” and he also comments that when they were working on *Frankenstein*, which contains some heavy language, “I chose parts of the book and we read it closely, then they saw a stage performance of it, and ending the topic with the film version from 1934 or 1932”. U1 did something similar with the novel *The Fault in Our Stars*. “Like, right now in 10th grade, we read *The Fault in Our Stars* and read 11 out of 25 chapters, followed by the movie”. U3 explains that “right now, we are working with a chapter about rare animals. We watched a movie with an animal theme, and then we did some tasks about the movie”. U3 had more of a thematic approach to using film, while V2 and U1 used it to improve the students understanding of literature and to try to engage them.

6.3.2 Which reading practices and strategies target higher-level comprehension?

This section analyze the strategies that the participants use which target higher level comprehension, such as helping with reflection and making them critically evaluate more advanced texts. The interview guide puts focus on differentiated instruction and struggling readers, but the participants are lower and upper-secondary teachers, which makes it necessary for the teacher to plan classes for a higher level of reading. Dyslexic readers are also required and have the ability to read on a higher level and might the lower level strategies to partake in the higher level reading classes. The higher level reading practices

mentioned by the participants are close reading, skimming, and tasks. Information seeking is also mentioned by the participants, but as the goal of any higher-level reading strategy.

Higher-level close reading is, as mentioned in the previous section, aimed toward a higher level of comprehension where the readers would focus on extracting meaning and reflecting on complex texts. Participant V1 said that he prefers using tactile methods when reading:

“I am very fond of tactile methods, which might be something that stuck to me while studying literature in university, where students were commanded, almost, to use a pencil and write notes and such on the text. I have tried to take that with me into the classroom, especially with texts such as poems, where things need to be studied closely”.

When V2 chooses historical English texts and texts with a particularly difficult vocabulary, he comments that strategies such as note-taking, is part of that process. Participant U1 also states that he uses a lot of pen and paper when doing close reading and reads paragraph by paragraph. Participant V1 talk about content related analysis such as theme and setting:

«We do a lot of exposure as a method and then move toward using the content. Afterward, we work with protagonists, settings, and other content factors. When using informational texts, we look at more specific information; what do the students remember and how they can use it in different settings.”.

Literary analysis and using informative texts is a way of close reading that is expected from a higher level of reading. In a higher-level close reading context, it would be necessary to combine strategies to be able to adapt for the struggling readers. A combined strategy approach to higher-level reading seems to be the solution most of the participants were working with. Using digital tools and film to support the higher-level close reading for example. Participant V1 also mentions exposure as a method, which refers to exposing the students to as many texts as possible in order to get an understanding of texts and structure, among other things.

Furthermore, another higher-level reading strategy is skimming, which most of the participants mentioned to be part of their reading practice. U1 states that “we usually start with skimming and close read after”, and V1 states that “at the start of the year we teach strategies such as skimming...”. V2 also mentions that skimming is a part of the reading strategies that he teaches the students to be aware of. For readers without a reading disability, skimming is a useful reading strategy, especially when searching for texts. In lower

secondary and upper secondary, finding sources and reading independently is a part of the curriculum. However, skimming is not a dyslexia-friendly strategy (University of Oxford, n.d). None of the teachers seem to be aware of this or reflected on the issue.

Another strategy for higher-level reading that comes up in the interviews is the use of tasks as a way of checking the students' comprehension. Tasks can also be modeled to fit any level of readers and can be written in a dyslexia-friendly way, which the teachers all did to some extent as mentioned in section 6.2 about choice of text and formatting. Giving tasks that challenge their understanding and critical thinking can be a way of adapting for higher-level reading. Using tasks is also a versatile strategy, which the teacher could use as a differentiation strategy, depending on the level of the pupil at hand. Participants U3 and V1 specifically mention that they use tasks. However, none of them reflects upon the strategy to any extent. Using tasks is a standard strategy in most subjects and for most teachers, but it can be challenging to reflect on what the purpose of reading tasks is, and how they can differentiate. The higher-level strategies are few and far between in the interviews and mostly center around exposure to texts and close reading strategies. However, many of the strategies mentioned are versatile strategies that can be used in both higher-level and lower-level reading sessions/classes. The teachers seem somewhat unaware of their reading practice, but they seem to reflect more on how and why they have not focused on the topic, on both lower-level strategies and higher-level strategies.

6.4 Development of Teacher Practice

Towards the end of the interview guide, the teachers were asked why they chose the practice that they use, and what they thought was needed to develop their practice. Since one of the findings from the data was their lack of focus on differentiation for struggling readers, these questions became important to understand their frame of mind and why they refrain from making it a priority. Two of the main topics that were discussed were where they learned their practice, resources, teacher training, and the measurability of reading development.

The interview guide presented a direct question, asking the participants where they learned their practices. Even though their ages and academic backgrounds varied, they all seemed somewhat unsure about why they applied their strategies. Participants V1 and V2 mentioned that the traditional reading strategies, such as skimming and close reading are a part of the

course book. V1: “Some of it is in the book, such as basic strategies.” and V2: “I have scraped it together from various course books, where some of them have focused on strategies more than others.”. Participant U1 answered “Somebody told me! Hehe” when I asked him where he learned his strategies. He continued in a more serious tone and stated “It is a school standard, plus some things I learned through my education.”. Participant U3 said something along the same lines as U1. “Some of it is part of my education. It is also something you get tipped about or get information through the school. And then you also learn from experience.”. U2 avoided the question and answered: “The traditional medicine for development is practice.”. However, Participants U1, V1, and V2 have had schooling in a dyslexia-friendly practice by *Dysleksi Norge*, which is a part of being a dyslexia-friendly school. It was not expressed when I asked them directly where they learned their practice, but for some of the participants, it came up during the interview. V2 mentioned that *Dysleksi Norge* has taught them how and why to use Lingdys as a digital aid for dyslexic readers. The *Lingdys* tool is specially advertised by *Dysleksi Norge*, and the dyslexia-friendly school receives courses on how to use it and how it can be applied by dyslexic students.

The biggest difference between the teachers from the dyslexia-friendly school vs. the school that does not have that accreditation is the courses and the help they have had to understand the disability, to learn about the resources available, and to learn how to use it themselves. V1, V2, and U1 are all familiar with the digital programs that are available. Participant V2 explained in detail why Lingdys is an important tool. He also commented that schooling/courses on how to use these tools are as important as having access to them because it is up to the teachers to educate their students on how to best use them and why: “For a teacher to differentiate and adapt, especially for the dyslexic students, it is important that the teachers get the opportunity to learn and use the tools that the students have access to. It happens a lot that the students get access to tools, but they are unsure of how to best take advantage of them.”. Participants U3 and V1 both comment upon the variation in the usefulness of tools such as Lingdys, because they have experienced that some students find it more confusing than helpful. U3: “It differs with how many actively use the tool. For some students it just becomes confusing.”. Even though V1 has had more training in using Lingdys than U3, neither of them reflects on their own role in teaching the students how to use the tool. However, V1 comments that getting to participate in courses concerning digital tools is a vital part of developing his practices: “I think it is something about the fast pace of digital development. To keep up, it is necessary to get the resources to teach the teachers

about the new tools and the possibilities they present”. U1 agrees, at says that resources and courses is the way to reach the students. U3 stated that to develop his practice, he would need two things: “I think that it is time and resources that are needed for us to reach all of our students. That is what we miss the most”. U2 states that “It is the framework that needs to be present, the resources.”. V2 reflected upon the importance of the teacher’s role in teaching digital tools and knowing how to operate them. Most of the teachers agreed that resources such as courses in digital tools and potential strategies are necessary for the development of their practices.

Lastly, A subject that came up with some of the participants was the measurability of reading development. Participant V1 talked the most about this subject because he found it difficult to answer whether the strategies he applied had any effect on the students who needed it the most.

“It’s about the measurability aspect in connection to reading. That’s what poses a challenge with reading. It’s measurable in the sense that one would discover if students understand more from the beginning to the end of the year. If you observe that students grasp more concepts and perhaps develop their reading speed. However, it is not something that we are accustomed to measuring.”

V1 continues to talk about how they somewhat measure reading by designing mock exams at the beginning of the year, and then see the progression and the end of the year through the exam, which they do not see much of other than grades. V1: “I find that to be one of the most challenging aspects in relation to reading”. The issue of measurability is somewhat reflected in most of the interviews, as most did not reflect much on the effectiveness of the development of the strategies they applied. On the other hand, Participant U1 comments that the students have progress every day without having to measure the effectiveness “It happens almost every day that it has an effect, but in baby steps.”. He also reflects on reading development due to applied strategies, as being effective when the students are motivated to make it effective “If you consequently implement or use the strategies, I think it brings development. However, if they only do it because I make them do it without engaging with it properly, then it has minimal effect”. It is important to note that measurability in comprehension is perhaps easier than measurability in speed and other factors of reading, which is reflected in participant U2 when he answers the question about measurability: “Well, it is when they do well”. “it” refers to when he perceives the students to develop their reading skills and understanding. Participant V2 states that he has no specific way of

measuring reading unless it is connected to writing: “It is not easy to measure. It would depend on if we are including writing strategies into that mix.” V2 effectively comments that to measure their understanding of a text, he looks at written tasks to gauge their development because it is difficult to measure something that is not as visible.

7.0 Discussion

This chapter discusses the findings of this thesis and how they relate to previous studies and theories on reading, the teacher's role, and reading disabilities. This chapter will discuss these findings to answer the research question and the aims of this paper: *Which reading practices and strategies can/do teachers use to differentiate for 8th-11th grade students with dyslexia and/or RD in the English subject?* In addition, a secondary question is included to further the initial question: *Where have they acquired the practices and strategies that they apply?* Chapter 7 is split into 4 sections based on topics, which is fashioned similarly to Chapter 6. This is done to mirror Chapter 6 to some degree. First, section 7.1 discusses the teachers' perception of Students with dyslexia and/or RD, section 7.2 discusses the changes the teachers do on the format of text that they present to their students, 7.3 discuss some of the lower-level and higher-level differentiation strategies and their implications, and lastly 7.4 discuss the development of teacher practice. The particular findings that are discussed in these sections are included because I found them to be unexpected and because the implications of these findings have consequences for the reading development of Dyslexic or/and RD students. The strategies and practices used by the participants are all presented in Chapter 6 and do not need to be repeated, so the lower-level strategy (6.3.1) and higher-level strategy (6.3.2) subsections are merged into one section in 7.3 because it does not discuss all of the strategies presented in 6.3.

7.1 Perceptions of Students with Dyslexia and/or RD

The teacher's perceptions of students with dyslexia can potentially color the differentiation strategies that teachers use in the classroom. To differentiate for students who struggle with reading, the teacher's perception of reading disability plays an important role in how and if they get the guidance they need. According to Vlach and Burice, struggling adolescent readers are often perceived as having behavior problems or act invisible because they are frustrated and expect rejection (2010, p. 522). The attitude and knowledge teachers have of these students can potentially be the difference between a successful differentiation practice and frustration for both the teacher and pupil. Some of the participants reflect on the students who act out as a consequence of the dyslexia diagnosis. Participant U1 states: "In a way, you have two types of dyslexic students in my experience. You have the high-achieving smart girls who work extremely hard, and then you have the lower-functioning boys who act out".

U1 reflects on the implication of gender¹¹ and motivation concerning the dyslexia diagnosis. However, not all of the participants had the same reflections on students acting out. All of the participants seemed aware of the diversity of students with dyslexia, that they differ in both motivation and skills, but there were varying perceptions of what the allowances for the disability are. As mentioned in my analysis, U1 and V1 express frustration over the students who “self-diagnose” and put these students in the category of “someone who uses the dyslexia diagnosis to find ways to evade tasks”. This perception of struggling readers shows that there are more allowances for the students who have the specific reading disability, dyslexia, versus the students who might struggle with reading but do not have a diagnosis. The RD (reading disabilities) students can struggle with identifying their problems when reading and have less support economically, as dyslexics have a right to certain tools (Folketrygdeloven, 1997, §10-7). The RD students also receive less support from teachers who do not have enough knowledge about reading disabilities nor the resources to adapt to everyone who struggles with reading. From the perspective of the integrative model of reading disability (Spear-Swerling & Sternberg, 1994), these students with RD who do not have dyslexia but struggle with basic reading skills can be considered as having been failed by the educational system in several places in their education (p. 91). These students would have left the road of normal reading acquisition at some place and have not received sufficient intervention in their reading development (see Figure 1 in 3.3). As they become older students, they might have developed reading disabilities that do not fall into the category of dyslexia. In addition, Vlach and Burcie state that “Like many children in our classrooms, the school narratives for these children have already been written” (2010, p. 522), meaning that older children who struggle with reading have already been given a narrative that considers them unable to learn or not as smart as the other students. This can be confirmed for the students when meeting teachers who perceive them as being lazy or unreasonably unmotivated. The perceptions that teachers have of their students have a lot of weight in how the students perceive their own ability to succeed. The teachers’ perceptions of the differences within the range of reading disabilities is necessary for the most impactful choice of teaching strategy (Troeva, 2015, p. 27). The participants seemed to be aware of the various problems that people with dyslexia have but unaware of other types of reading disabilities and the problems they can cause. The three teachers who work in dyslexia-

¹¹ Gender is not discussed again because participant U1 was the only one who commented on it. The implication of gender on motivation and reading development in dyslexic and/or students with RD would be relevant to bring up in further research.

friendly schools have received some instruction on dyslexia and on the appropriate tools and strategies that are available. However, their knowledge is limited to knowing the possible deficits of a dyslexic person and mostly in connection to the dyslexic students' issues with writing, which is perhaps easier for teachers to assess.

There is also a problem in relation to *when* a student is diagnosed. Intervention strategies for students with dyslexia or other differentiation strategies are usually implemented at an earlier stage when the diagnosis is more frequently discovered (primary school). Models such as Spear-Swerling and Sternberg's are arguably meant to help teachers of younger readers. To steer the students on the right track to proficient reading, arguing for appropriate interventions before it becomes an RD. However, in secondary/upper secondary school, the reading instruction might not include lower-level intervention strategies, but mostly classes based on the use of text. This is reflected in the interview of participant U3, who had been an elementary school teacher for many years before he recently started teaching 8th grade. U3 remarked that he spent a lot of time with strategies that target dyslexia in elementary school, while in secondary school, these strategies are not frequently used. He did not explain why that was the case, but the question made him reflect on why they did not spend more time on strategies that prepare all of the students for the texts. The expectations of secondary or upper secondary teachers, when it comes to a higher level of reading instruction, might influence their choice of method or influence them to *not* put their focus on lower-level reading strategies that can compensate for various deficits that struggling readers have.

7.2 Changing the Format of Text

Choice of text and the presentation of texts can be important differentiation practices that make it easier for dyslexic students to follow along in class. Rello and Baeza-Yates found in their study that certain measures can be taken when presenting text to ensure better readability for dyslexics (2015, p. 45). They suggest using larger fonts and larger character spacings to improve readability for dyslexics (see 4.2). It is important to note that making these changes for better readability is also relevant for readers who do not have a reading disability, as both groups experienced better readability during Rello and Baeza-Yates's study (2015, p. 45). This means that in a teaching context, changing text would be an easy differentiation practice, timewise. In addition, the readability of digital texts could help motivate struggling readers instead of discouraging them. According to the findings in this

thesis, all of the teachers in dyslexia-friendly schools change most texts before presenting them to their students. The two teachers who have not received information about dyslexia-friendly practices did not change the readability of their texts, even though one of them thought it was a good idea. Participant U1 who works as a teacher in a dyslexia-friendly school used readability practices regularly and even stated that he "...often use artificial intelligence to simplify the language and to get it rewritten" and "If it is a picture or a PDF file that we can't change, we just mark everything, and it changes the font and size. We do this because the students expect everything to be a certain way, to standardize things". U1 uses artificial intelligence to make texts more readable for struggling readers. Rello and Baeza-Yates also mention that changing low-frequency words and challenging syntax is also a way to make text more readable for dyslexic students. This is reflected in the way U1 uses artificial intelligence to simplify texts. The other participants mostly talk about choosing specific literature that is readable, which might take more time and effort in their schedule.

There was some disagreement on the use of text on screen instead of on paper. Most of the teachers use digital texts, sometimes printing them out. However, participant U2 mostly uses printed-out text without changing the font for readability. In the modern classroom, teaching with digital tools has become frequent. For the dyslexic pupil, it is arguable that using digital tools to change text for readability is a more dyslexia-friendly practice than reading on paper, or reading novels where you cannot change text. However, according to teacher U2, reading on paper is better for all of the students. U2 stated that "... it looks like our society is backtracking to reading on paper instead of on screens, which I find appropriate and reasonable". According to the study by Lenhard et al. (see 4.2), reading on-screen results in less accuracy (2017, p. 442), meaning that it can affect comprehension, causing students to read faster but not focus on meaning as much as reading on print. This study agrees with U2's skepticism about using too much digital texts, as he refers to the recent media change in attitudes toward the digitalization that has been done in schools in the last decade, and how that can affect learning. However, for the readability of the dyslexic student, having digital tools and getting texts that are changed for better readability might still be better for their comprehension of texts. A possible solution is to print copies of modified texts, meaning that they could change the text digitally and then create physical copies that can be reused.

According to Borg's model of teacher cognition, contextual factors influence teacher practices (2003, p. 82). Contextual factors can be school practices that influence their

teaching. The teachers who work in dyslexia-friendly schools mention that they have some set school practices that they have agreed upon. Participant U1 mentions that the school uses the font types Arial or Calibri and size 14. According to the study by Ali et al., they recommend using font types serif and sans serif when differentiating for dyslexics on both print and on-screen (see 7.2). Arial and Calibri are both sans serif fonts, which are traditionally used on screen. It is relevant to mention that both Ali et al., and Rello and Baeza-Yates write that the font is also a preference matter, which means that Ali et al., only present a suggestion based on their study, but it is not a sure thing that the students will benefit by a lot. In addition, Rello and Baeza Yates recommend text sizes from 18 to 24 (2015, p. 45). A standard sizing would be 12. However, it seems U1's school has settled on something closer to 12 than to 18. Having a common standard so that the students get used to one readable font might be a better argument for keeping a school standard.

Moreover, the type of text can also be a challenge for dyslexic and/or RD students. V1 mentions that the students find different kinds of text interesting and motivating to read. The choice of genre can have an effect on students who struggle to read. Expository texts can cause a challenge for dyslexic readers because these texts usually contain a more complex vocabulary, amongst other things (Griffin & Tulbert, 1995, p. 73 ; Awada & Gutiérrez-Colón, 2017, p. 58). For the students who prefer to read expository texts instead of fiction, it might not apply.

7.3 Implications of Practices, Strategies, and Tools on Students with Dyslexia and/or RD

To successfully differentiate for older students with dyslexia or/and RD, it is important to be aware of their challenges and know which strategies to apply that target lower-level reading deficits. According to a meta-analysis by Sencibaugh (see 4.3), the two most efficient types of strategies for students with learning disabilities when it comes to reading comprehension are auditory/language-dependent strategies and questioning strategies (2007, p. 2). According to Sencibaugh, students with learning disabilities struggle with planning and organizing tasks, which is also stated by *Dysleksi Norge* in their definition of dyslexia (Dyslekssi Norge, Waaler & Waaler, 2019, p. 9). This means that metacognitive strategies that question the structure and purpose of text are useful when teaching students with dyslexia and RD. The participants did not reflect on their use of questioning strategies (which are metacognitive

strategies), but some of them stated that after reading, they would ask their students about the content of the text. Not a lot of metacognitive strategies are intentionally promoted in these classrooms. However, most of the participants repeatedly mention the strategy of activating previous knowledge, which is a metacognitive strategy that allows students to build new information on the things that they already know. This strategy can potentially help students with dyslexia and/or RD think about how they learn, and give them tools for future reading. The metacognitive strategies are connected to the zone of proximal development (see 3.4), where teachers are giving the students the knowledge of how to regulate their own learning. Activating previous knowledge is one such feature. The participants seemed unsure about why they applied their strategies, including the strategy of activating previous knowledge. However, this strategy is not specifically made to differentiate for dyslexic students; it is a common learning strategy that is frequently included in both pedagogical and didactic schooling in higher education for teachers. The same goes for the context clue strategy BISON. Participant U1 commented during his interview that most of his practices come from the things he learned during his university education or what the school adheres to where he works. Based on Borg's model of teacher cognition, educational background is one of the four factors that influence a teacher's classroom practice (2003, p. 82). It is important to note as well that teacher education does not usually include the practices and intervention strategies for students with learning disabilities. Perhaps strategies for reading disabilities are mentioned by some lecturers, but the topic of reading disabilities is not part of the main curriculum because it usually falls under the area of special education teachers, who specialize in student challenges and how to adapt for those students (NTNU, n.d.). However, as most of the participants mentioned in the interview, dyslexia is not seen as a serious enough condition by itself for the schools to grant special education resources and/or individualized instruction. This means that teachers who have a limited educational background in the area of Dyslexia and/or reading disabilities are supposed to differentiate for these students. In the study done by Haukås, the teacher participants stated that they learned their language strategies and such in university and in courses that their school arranged for (2012, p. 125), which is much the same as the participants in this thesis stated. When Haukås refers to language strategies, she connects the term to metacognitive strategies that target students' development of the basic skills in the curriculum (2012, p. 115). Haukås suggests that higher education for teachers could help develop student teachers' knowledge about language strategies more than is done in Norway at this point in time (2012, p. 125). The same could be said for differentiation strategies to help students with dyslexia and/or RD

by adding the topic to pedagogic or didactic subjects in the student teachers' university programs.

Differentiation can also be achieved through the use of digital tools such as Lingdys. The use of digital tools can also be a reading strategy for differentiation in itself. The participants all mentioned having the digital tool Lingdys available for their dyslexic students. If used and applied to its full potential, this tool can be a good auditory strategy, which is recommended for students with learning disabilities (Sencibaugh, 2007, p. 2). Some of the participants seemed to be a bit wary about the use of Lingdys, U3 stating that it "...can cause more confusion" for some students. In these cases, the teachers need to be adept at the tool themselves and know how to apply it. The auditory tool (Lingdys) targets lower-level reading deficits such as sight-word-recognition skills, which means it is easier to hear the word spoken rather than read it. If we look at Stanovich's interactive-compensatory model of reading (Urqhart & Weir, 1998), the use of auditory tools in combination with reading can be considered a way of compensating for a rapid sight-word reading by relying on another process to read successfully. However, some people with RD have issues connected to auditory processing, which would make text-to-speech tools such as Lingdys not as relevant. If a student with a reading disability struggles with auditory processing, it is important that the teacher picks up on this deficit instead of providing them with a tool that can cause more problems for them. This is connected to Stover et al. and their statement about needing to know the pupil's specific issues in order to differentiate appropriately in class (2015, p. 60). However, for the students who do gain a lot by using auditory tools while reading, it could be a way of compensating for something they lack because of their disability. "Thus, according to the interactive-compensatory model, the poor reader who has deficient word analysis skills might possibly show greater reliance on contextual factors" (Stanovich, 1980, p. 63). This means that dyslexics or/and students with RD might use a contextual factor such as digital tools to compensate for their reading deficits. Another way of looking at the use of auditory tools is within Vygostky's Zone of Proximal Development, where tools that help students interact with their surroundings would eventually lead to development: "...the difference between what a person can achieve with support for someone else and/or cultural artifacts" (Lantolf, 2000, p. 17). Concerning the use of Lingdys, both the tool and the guidance are required to use it properly and know where to apply it. However, if it is used to its full potential, it is an excellent way of differentiating for students with dyslexia and/or reading disabilities.

Furthermore, according to Participant U2, listening skills are separate from reading skills. U2 discusses whether the students develop their reading skills when having tools such as Lingdys, which have a text-to-speech function. However, as mentioned in the paragraph above, dyslexic students benefit from compensating by combining reading with listening (Sencibaugh, 2007, p. 2). Listening in combination with reading would not necessarily hurt their reading development, and it only enhances reading comprehension for those who find it useful. In upper secondary school, the need to test auditory skills and reading skills separately becomes less relevant, and the comprehension and use of the content in texts become more important. For younger students with reading disabilities, separating skills would perhaps be more relevant than it is for older students.

Another finding from the interviews is that the participants teach skimming in their classrooms. In the analysis of higher-level reading practices and strategies (6.3.2), most of the teachers stated that they were teaching the students skimming as a reading strategy. This could potentially be problematic, as dyslexic students often find this strategy challenging because it requires them to have good sight-word reading/word recognition skills, which is a deficit that is mentioned in the definition of dyslexia (see 3.1.1) and in Spear-Swearling and Sternberg's model of reading disability (see 3.3), as something that dyslexics or students with other reading disabilities often struggle with (1994, p. 92). To differentiate for dyslexic and/or students with RD, it is suggested to avoid skimming in favor of close reading (University of Oxford, n.d.). None of the teachers seemed aware that close reading is a dyslexia-friendly strategy, as this is something that usually takes place in any reading session in a school context. Close reading can be both a lower-level strategy and a higher-level strategy, depending on how it is done. Most of the participants mentioned teaching skimming as a reading strategy, which suggests that even the teachers who work in dyslexia-friendly schools lack some knowledge about productive reading strategies.

Skimming can be considered a higher-level reading practice. Higher-level reading practices differ from lower-level reading practices as it can be done with differentiation and inclusion in mind, but it is not as big a leap from what you would consider differentiation for students with lower-level skills. The teachers did not share much about these practices, so I assume that it is not necessarily something that comes to mind when talking about reading strategies and intervention strategies for dyslexic and/or RD students. The teachers might

consider higher-level practices normal comprehension strategies. Higher-level comprehension strategies should already be a part of secondary education, as it is a part of reading as a basic skill in the curriculum, and what the purpose of reading is, such as searching for information (The Ministry of Education and Research, 2019). For the teachers to create a balanced approach to reading practices, both higher-level practices and lower-level practices should be included.

Of all the participants, V2 seemed to be the most informed about dyslexia-friendly practices and had the most resources due to the school's focus on dyslexia and his interest in the topic, though still excluding other RD's in the interview. Participant V2 presented a higher-level close-reading strategy with dyslexic students in mind. His practice of close reading strategies includes using film adaptations or live plays after reading the original literary works, which in addition to being a close reading strategy, also falls under the category of multiple strategy approach or combined strategy approach. Awada and Plana conclude in their research that using a combined strategy approach is a beneficial practice (2018, p. 473). V2 commented that their school had a dyslexia coordinator who helped the teachers differentiate for the dyslexic students in class, which might have influenced his teaching. However, V2 also mentioned that he teaches skimming as a reading practice, which signifies that he does not know the implications of teaching this strategy for students with dyslexia and/or RD.

Furthermore, it is apparent in most of the dyslexia-friendly-school teachers, U1, V1, and V2, that their understanding and their practices are influenced by Dysleksi Norge. Their perceptions are previously discussed in 7.1. The teachers who work at the dyslexia-friendly schools seemed the most aware and used the most effective dyslexia-friendly strategies. Participant U2 did not differentiate at all, according to his own statement in the interview, and U3 said that he should differentiate more but did not consciously do so in his classes. Participants U1, V1, and V2 seemed more aware and included more dyslexia-friendly strategies in their practice. However, it is important to mention that all of the participants seemed unaware of any other reading disability, and they were still lacking in using a variety of strategies purposefully to help their dyslexic students. Dysleksi Norge does include other learning disabilities in their cause, but it looks like their main focus lies on the specific reading and writing disability that is dyslexia, which can be gleaned from reading their official materials and from interviewing the participants from dyslexia-friendly schools. It does signal that the impact of Dysleksi Norge in Norwegian schools is significant.

7.4 Development of Teacher Practices

The interview had a question at the end (Q 18 in appendix 1) that asked what would need to be in place for the participants to develop their practice regarding the differentiation strategies aimed toward dyslexic students who struggle with reading. Every participant's answer to this question needs to be understood in the context of the entire interview, revealing a lack of differentiation practices even among the teachers working in dyslexia-friendly schools. Several of the findings discussed in this chapter are a result of the participants replying that they don't know or don't have the time to focus on dyslexia-friendly reading practices. According to the results of Haukås' study, there is a gap between the beliefs and actions of teachers (2012, pp. 121-124; Haukås, 2020, p. 369) that is apparent in some of the interviews, as the teachers talk about the opportunities that they rarely take. Most of the participants commented that in order to develop their practice, they need more time and resources, which means that they are aware of their lack of knowledge and have reflected on why they act on some of the things that they believe are useful for the students. The teachers who have had minimal influence from Dysleksi Norge on their practice were adamant about the lack of resources, such as courses and frames for their development. Frames, in this context, can mean plans and preconditions for development. According to Stover et al., having the time to get to know the dyslexic students' issues in individual instruction sessions is important (2015, p. 60). However, it would take up too much time for it to be feasible, especially if the teacher has several RD students at different levels of reading proficiency. In an ordinary classroom, there is usually only one teacher, perhaps two depending on the school, which means that the teacher would not have the time to do individual instruction or use too much time with one student. Unless the student has an individual education program (IEP) with their own teacher, there is no allotted (and paid) time for teachers to get a good picture of the dyslexic and/or RD student's deficits, in addition to planning for and testing the most efficient strategies.

A final finding from the interviews that is valuable to discuss here is the issue of measuring or assessing reading skills, which can be problematic when deciding on appropriate differentiation strategies for the development of reading comprehension. This topic was of particular interest to participant V1. Participant V1 mentions that in his hectic days, it is difficult to figure out what strategies work and contribute to students' reading development. You cannot see the mental processes inside the student's head while they are reading; you

can only look at the results of certain types of tasks or tests. Especially since the students do not usually have the individualized instruction which is recommended by Stover et al. for teachers to find the Dyslexic and/or RD student's particular reading deficits (2015, p. 60). If the teachers do not know how to measure their development, they also do not have a particularly good overview of where the students make progress or if they make any progress at all. V1 states that they often do not provide tests that can measure reading before the end of the year in preparation for the English exams in 11th grade (that is, first-year students in upper secondary school). Additionally, if the students are compensating for lacking some skills in their reading (see 3.2), it can also be hard to spot exactly what it is that they need help with. According to teacher V1, "...it's measurable in the sense that one would discover if students understood more from the beginning to the end of the year. If you observe that students grasp more concepts and perhaps develop their reading speed. However, it is not something that we are accustomed to measuring". This could mean that measuring reading is not only a difficult feat to do daily, but it is not something that some teachers focus on. This is somewhat confirmed by participant U1 when he says that the students make progress every day in baby steps, but it is difficult to know what they learn well from. If the dyslexic and/or student with RD is silent and pretends to be receptive when being met with reading and reading strategies, it does not necessarily mean that the strategies are well received by the student or that they understand what they read. According to Vlach and Burice, some students who struggle with reading will settle on keeping quiet and being invisible (2010, p. 522). This means that even if the student is silent when they have to read, it does not mean that they are not struggling with their disability. Quiet students are difficult to measure. Participant V2 mentions that he also finds measuring reading development difficult unless it is connected to writing: "...it would depend on if we are including writing strategies into that mix". The result of writing is visible and on paper for teachers to grade while reading development happens in the individual mental reading process, where multiple things are happening at the same time (Urquhart & Weir, 1998, pp. 44-45). The difficulty in measuring reading development can be a reason behind the lack of focus on reading strategies for students with dyslexia and/or RD.

8.0 Concluding Remarks

This thesis has investigated teacher practices and differentiation strategies when differentiating for students with dyslexia and/or RD. The data was gathered through semi-structured interviews with five teachers working in secondary schools, where three of the teachers were from dyslexia-friendly schools, and two were from ordinary schools. The initial research question is: *Which reading practices and strategies can/do teachers use to differentiate for 8th- 11th-grade students with dyslexia and/or RD in the English subject?* The secondary research question is: *Where have they acquired the practices and strategies that they apply?*

The findings from the five interviews discussed in Chapter 7 are selected from the most unexpected answers, along with answers that impact dyslexics and/or students with RD and their teachers. These findings were discussed in Ch. 7 with the intention of answering the research questions. Teacher practices can contribute to the development of reading comprehension in students with dyslexia and/or RD by educating themselves on the diversity of the disabilities and differentiating using strategies that are proven to be helpful. A couple of strategies that were discussed are close reading and metacognitive strategies. Furthermore, teachers can change the formatting of digital texts before presenting them to their students to help readers who need them. Additionally, using auditory tools can help dyslexic and/or students with RD with their comprehension, but it requires teachers to have knowledge of how to use those tools.

Through the findings of this thesis, I discussed where the teachers learn the practices they use and how they can further develop them. The last secondary question is asked in order to get a better understanding of the reasons behind the practices they use and the reason behind why they do not differentiate to any degree. Firstly, the teachers seem to have specific attitudes toward the students with an official dyslexia diagnosis and those without. They seemed unaware of any other reading disability that is not dyslexia. The two teachers who work in schools that do not have the dyslexia-friendly status seemed to either oppose differentiating to any degree or were aware but did not practice it in their classes. The dyslexia-friendly-school teachers fared a bit better, but they also lacked a focus on the possible solutions for differentiation and did not mention any other RD. However, Dysleksi Norge has significantly impacted Norwegian schools through their campaign for better solutions for dyslexics. Their

impact is visible through the knowledge the dyslexia-friendly-school teachers have of the disability and through their comments about having received some courses on how to differentiate and through their perceptions of these students and the strategies they apply.

As mentioned in the discussion, Haukås found a gap between what teachers believe and what they do (Haukås, 2012; Haukås, 2020, p. 369). Most of the teachers who participated in this thesis reflected on what they should do, but most of them did not apply everything they mentioned to a degree that would yield results. Teacher U1, who works at a dyslexia-friendly school, stated that the school collectively used font size 14, which is a far way off the recommended size in Rello and Baeza-Yates (2015, p. 45). The teachers commented that the reasons for not developing their practice are time, resources, and the difficulty of assessing reading. The difficulty of assessing reading can cause issues such as not knowing what strategies work because measuring reading development is difficult and not a usual practice for these teachers. Another issue with teacher practice development is Norwegian teachers' educational background. Learning disabilities are not a focus for upper secondary teachers, as they usually fall within the special education teachers' program. For teachers to have a good differentiation practice for these secondary students, they need to have the knowledge and resources to make it work.

There are a lot of possibilities for further research on the topic of reading development in students with dyslexia and/or RD due to the lack of research (see 4.1). To make a more generalized statement or comment on the scope of the issue presented in this thesis, further research would need to be done, including a wider selection of participants. This thesis is limited in its demarcation and selection of five participants. In addition, it would be useful to have students' perspectives on their treatment and reading development in secondary schools. Very few reading studies are done in secondary schools, meaning there is very little information about the reading development of older students in general.

Addressing the needs of students with reading disabilities and their teachers is not just a matter of fairness; it's a necessity for ensuring their academic success and how to compensate for their disability in their daily lives. The Norwegian population is made up of about 5% dyslexics, not including the people who struggle with other reading disabilities, which means that these students have a large presence in the Norwegian classroom. There are real-life consequences for students with reading disabilities when they do not receive the help they

need, and reading disabilities should be treated no differently than any other disability at school. The practical issue remains that there are probably a lot of learning-disabled students who are left to find their own way through the education system. Most of the teachers expressed concern about being unable to do enough, or not having done enough, for these students, but as every change for inclusion does, it requires time, change, and resources.

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Appendix 1: Interview Guide

Interview guide (English version)

Background information:

1. How long have you worked as a teacher?
2. What level are you teaching at?
3. What subjects do you teach?
4. What current or prior experiences have you had with dyslexic pupils? Follow-up questions: How did you find/experience these pupils (their behavior and motivation)? What have been your biggest challenges with these pupils?

Questions about text:

5. How often do you use fictional texts (such as short stories, novels, and poems) in comparison with expository texts?
6. Do you read entire books? If yes, how do you adapt for the dyslexic or/AND pupils with RD?
7. How do you proceed when choosing texts (any kind of text) for classroom use?
8. In what ways do you consider different reading levels when choosing texts?
9. When you present reading materials for your pupils, do you consider the presentation of the texts? Such as spacing and font types.
10. Have you ever modified the font and size of a digital text before presenting it to your class? If so, why and how?

Questions about differentiation:

11. Reading practices are more than just having your pupils sit down and read, it is everything you plan for the pupils to do in preparation for reading and for processing(comprehending) what they have read, in addition to how the pupils use what they have read. What reading practices do you use regularly in your teaching?
12. Why did you choose these practices? Follow-up: how did you find them/how did you learn what to do?
13. What kind of materials do you use when teaching reading comprehension to Dyslexic pupils or pupils with reading disorders?

14. What reading or learning strategies do you teach your learners? Follow up: Are there additional or different strategies you teach or work with your learners who struggle with reading?
15. In what way do these strategies help pupils with their comprehension and reading development? Follow up: Can you share an example of when a strategy successfully helped a learner with reading comprehension?
16. What digital tools to help with reading and comprehension do you recommend to your dyslexic or RD pupils? Follow-up questions: Who recommends them? Where do you find them?
17. How do you think these strategies and tools contribute to their reading comprehension?

Concluding questions:

18. What would need to be done or available for you to further your practice on differentiated instruction for pupils who struggle with reading?
19. Do you have anything else you want to share? That you were not able to communicate earlier?

Intervjuguide (Norsk versjon)

Bakgrunnsinformasjon:

1. Hvor lenge har du jobbet som lærer?
2. Hvilket nivå underviser du på?
3. Hvilke fag underviser du i?
4. Hvilke nåværende eller tidligere erfaringer har du hatt med dyslektiske elever?
Oppfølgingsspørsmål: Hvordan du har opplevd disse elevene (atferd og motivasjon)?
Hva har vært dine største utfordringer med disse elevene?

Spørsmål om tekst:

5. Hvor ofte bruker du skjønnlitterære tekster i engelsktimene (noveller, utdrag, dikt, bøker) i forhold til fagtekster/informativ-tekst?
6. Leser dere hele bøker? Oppfølging: hvis ja, hvordan tilpasser dere lesingen for elever som sliter med lesing?

7. Hvordan går du frem når du velger tekster til klassen (alle typer tekster)?
8. Hvordan tilpasser du valg av tekst når elevene i klassen har varierende leseegenskaper?
9. Når du presenterer tekster for elevene dine, vurderer du tekstformatet i forkant?
10. Har du noen gang endret skrift og størrelse på en digital tekst før du presenterte den for klassen din? Hvis ja, hvorfor og hvordan

Spørsmål om tilpasset opplæring:

11. Lese-praksiser er mer enn bare lesingen i seg selv. Lese-praksiser er hvordan du planlegger timene dine rundt lesing, og det kan være alt ifra hvordan elevene skal forberede seg på lesingen, lesingen i seg selv, og hvordan dere prosesserer og bruker teksten(e) i etterkant. Hvilke lese-praksiser (metoder) bruker du regelmessig i undervisningen?
12. Hvorfor valgte du disse praksisene? Oppfølgingsspørsmål: Hvordan fant du dem/hvordan lærte du hva du skulle gjøre?
13. Hvilke lese- eller læringsstrategier lærer du til elevene dine? Oppfølgingsspørsmål: Er der noen strategier du lærer eller jobber med for elever som sliter med lesing?
14. På hvilken måte hjelper disse strategiene elevene med forståelse og leseutvikling? Oppfølging: Kan du dele et eksempel på når en strategi har vært vellykket og hjalp en elev med leseforståelsen?
15. Hvilke fysiske materialer bruker du for å hjelpe med leseforståelsen til elevene dine? Oppfølgingsspørsmål: Hvem anbefaler dem? Hvor finner du dem?
16. Hvilke digitale verktøy anbefaler du for dine dyslektiske elever eller elever med lesevansker? Oppfølgingsspørsmål: Hvem anbefaler dem? Hvor finner du dem?
17. Hvordan tror du disse strategiene og verktøyene bidrar til leseforståelsen deres?

Avsluttende spørsmål:

18. Hva må gjøres eller være tilgjengelig for at du skal kunne videreutvikle praksisen din innenfor tilpasset opplæring for elever som sliter med lesing?
19. Har du noe annet du vil dele som du ikke fikk formidlet tidligere?

Appendix 2: Coding Form

code	Explanation of code	Example from interview data
Perceptions of pupils with dyslexia	<p>The teacher's attitudes or perspectives of Pupils with dyslexia. These perceptions can potentially color their practice, and it gives way for their knowledge about the diagnosis and the issues that comes with it.</p> <p>(This can be connected to the studies done on teachers and their differentiation)</p>	<p>U1: Du har på en måte to typer dyslektiske elever, etter min erfaring. Du har de høyt-skårende flinke pikene som jobber seg ihjel, og så har du de lavere fungerende guttene som utager</p> <p>(or you can also have cases where they talk about the pupils that diagnose themselves, and their attitudes toward that)</p>
Choice of text and formatting	<p>How they choose texts or change texts to adapt for dyslexic and RD readers. The choice of text can be a way of adapting for struggling readers.</p> <p>(studies on font etc.)</p>	<p>U1: «Vi prøver alltid å ha minst ett litterært verk løpet av et skoleår på hvert trinn. Også blir det mye fagtekster, eller tekster fra A-univers, som er kortere skjønnlitterære tekster og liknende»</p> <p>«Så kjører jeg ofte gjennom kunstig intelligens og forenkler språket, og får den til å skrive det om rett og slett»</p> <p>«Ja, vi prøver å holde oss til kalibri eller areal, og skriftstørrelse 14 for det meste. Så hvis det er i andre fonter, og det er mulighet til å endre det, så gjør vi det.»</p>
Differentiation practices and strategies. sub-coding: What targets lower-level reading?	<p>The various methods and strategies that the teachers use to differentiate for pupils who struggle to read.</p> <p>The first sub-code is centred around the strategies that target lower-level reading, such as word decoding skills.</p> <p>(theory on reading. What kind of reading process does the strategies target?)</p>	<p>U1:</p> <p>«det med engasjerende leser, lyd, ordbok, de tingene. Og Lingdys.»</p> <p>«Vi har for det meste lest høyt, vi lærerne. Også har de fulgt med underveis, så vi stopper litt på vanskelige ord, mye trening i ordbok, vanskelige ord, inne i ordbok, får de lest opp på Google Translate»</p> <p>«Det har litt med at elevene forventer at det skal være på en viss måte, å standardisere ting, så er det enklere å lese.»</p>

<p>Sub-coding: What is helping them with higher-level comprehension?</p>	<p>The second sub-code is directed toward higher-level reading comprehension and the strategies used to help pupils who struggle to read. such as making connections and reflecting on text and content.</p> <p>(Udir has a form of the levels of reading as a basic skill. Also theory on reading process)</p>	<p>«Ja, der er vi veldig på det med å kunne lese, tolke tekster utifra, og kunne forstå noen brydstykker av teksten. Og så bygge seg opp et bilde og prøve å finne ut hva de manglende bitene er.»</p> <p>«Jeg er veldig på det med skumlesing først, og så går jeg mer aktivt inn etterpå, litt som Bison. Vi ser på bilder og innreier titlene, og får et overblikk. Skumleser igjennom før du går mer til verks. Å danne overblikket, så du vet hva som kommer»</p> <p>«Det er mye lese og finne svar. Strukturering, informasjonssøking, også bruker vi mye lytting i tillegg»</p>
<p>Measurability and development of teacher practice</p>	<p>What is keeping them from developing their own practice further? if they have the time or knowledge. In addition, reading can be difficult to measure, which can effect the quality the adaptions that are done to make reading easier for RD and dyslexic pupils.</p> <p>(teacher cognition? Theories about. Research on teacher cognition – why they don't feel like)</p>	<p>«Nei, det skjer jo nesten hver dag at det har en effekt, men det er jo veldig små skritt om gangen.»</p> <p>«Det er jo en treningssak som med alt annet, og hvis du blir god på det, og gjør disse tingene ofte og gjevnt over, og gjør det til en strategi du bruker hele tiden, så tror jeg det har en stor påvirkning»</p> <p>«Det er jo kursing som regel. Så er det jo å ha hjelpemidler tilgjengelig»</p> <p>«Når du er bevisst på det, så går det veldig mye på automatikken, i forhold til å legge til rette til å tilpasse det mest mulig»</p>

Appendix 3: Consent Form

Vil du delta i forskningsprosjektet

“Teacher practice to improve reading skills and comprehension in dyslexic upper secondary Pupils or pupils with reading disabilities in the English subject.”

Dette er et spørsmål til deg om å delta i et forskningsprosjekt hvor formålet er å undersøke lærere sine tanker og erfaringer om hvordan å hjelpe elever med dysleksi og elever med lesevansker til å utvikle sine leseferdigheter i engelskfaget. I dette skrivet gir vi deg informasjon om målene for prosjektet og hva deltakelse vil innebære for deg.

Formål

Formålet med prosjektet er å få en bedre forståelse av hvordan lærere på ungdomskolen og videregående skole tilpasser leseopplæringen for elever med dysleksi eller andre leseforstyrrelser. Prosjektet vil sette søkelys på generell praksis, strategier og verktøy, og hvilke erfaringer lærere har med dette.

Den nåværende problemstillingen er: How can teacher practices contribute to the development of reading comprehension and reading skills in upper-secondary pupils with dyslexia in the English subject?

Prosjektet er en masteroppgave og resultatene som blir samlet inn i intervjuene vil brukes for å svare på problemstillingen i masteroppgaven.

Hvem er ansvarlig for forskningsprosjektet?

Høgskolen i innlandet på Hamar er ansvarlig for prosjektet.

Hvorfor får du spørsmål om å delta?

Du er en av ca. 6-8 lærere som har blitt spurt om å delta, ettersom dere er engelsk lærere på ungdom- eller videregående skole. Du er relevant for mitt prosjekt fordi du kan svare på spørsmål om egne erfaringer og reflektere over problemstillinger relatert til profesjonen.

Din kontaktinformasjon er hentet via offentlige nettsider eller via din kollega eller arbeidsgiver, og du har blitt kontaktet direkte fra meg via mail.

Hva innebærer det for deg å delta?

Hvis du velger å delta i prosjektet, innebærer det at du stiller til ett intervju. Det vil ta deg ca. 60 minutter, men lengden vil variere ut ifra hvor mye du har å dele. Under intervjuet vil du bli spurt om hvor lenge du har vært lærer og på hvilke trinn, spørsmål om dine erfaringer med elever som har dysleksi, hvilke verktøy og strategier for lesing du har tatt i bruk og spørsmål som ber deg reflektere rundt egen praksis i forhold til tilpasset leseopplæring.

Dine svar fra vil bli tatt opp som lydopptak

Det er frivillig å delta

Det er frivillig å delta i prosjektet. Hvis du velger å delta, kan du når som helst trekke samtykket tilbake uten å oppgi noen grunn. Alle dine personopplysninger vil da bli slettet. Det vil ikke ha noen negative konsekvenser for deg hvis du ikke vil delta eller senere velger å trekke deg.

Ditt personvern – hvordan vi oppbevarer og bruker dine opplysninger

Vi vil bare bruke opplysningene om deg til formålene vi har fortalt om i dette skrivet. Vi behandler opplysningene konfidensielt og i samsvar med personvernregelverket.

- Det vil bare være meg selv og min veileder ved Høgskolen i innlandet Hamar som har tilgang til din informasjon.
- For å sikre at ingen uvedkommende får tilgang til personopplysningene dine vil opptaket bli tatt på diktafon og lagret rett inn i nettskjema, slik at ingen informasjon ligger ubeskyttet eller lagret på pc eller mobil.

Deltakerne i prosjektet vil anonymiseres ved endring/fjerning av navn, arbeidsplass og eventuelt by eller fylke hvis det skulle komme opp. Informasjon om hvor lenge du har vært lærer, hvilke trinn og hvilke fag du jobber med kan komme frem i oppgaven, ettersom du vil bli spurt i intervjuet hvor lenge du har jobbet som lærer, og hvilke fag du er lærer i og hvilke trinn du har.

Hva skjer med personopplysningene dine når forskningsprosjektet avsluttes?

Prosjektet vil avsluttes når oppgaven blir godkjent og planen for avsluttet prosjekt er senest 20. August 2024. Når lydopptaket av intervjuet bearbeides, vil datamaterialet med dine personopplysninger anonymiseres. Lydopptaket vil slettes og transkripsjonen vil anonymiseres ved å fjerne navn og andre opplysninger som kan identifisere deg. I etterkant vil du bli referert til etter en kode og kodenenes referanse vil bli lagret eksternt før den blir destruert etter prosjektslutt.

Hva skjer med datamaterialet du har bidratt med når forskningsprosjektet avsluttes?

Datamaterialet vil bli anonymisert fortløpende etter gjennomført intervju og det anonymiserte datamaterialet vil lagres på ubestemt tid. Datamaterialet vil lagres videre i tilfellet for videre forskningsmål eller etterprøvbarhet. Forskningsmaterialet vil lagres på One Drive Feide hos Høgskolen i Innlandet. Det anonymiserte datamaterialet vil først og fremst kunne bli håndtert av meg selv og veileder. Andre som ønsker å etterprøve forskningen vil eventuelt kunne bruke det anonymiserte datamaterialet til etterprøvbarhet.

Hva gir oss rett til å behandle personopplysninger om deg?

Vi behandler opplysninger om deg basert på ditt samtykke.

På oppdrag fra *Høgskolen i innlandet Hamar* har Sikt – Kunnskapssektorens tjenesteleverandør vurdert at behandlingen av personopplysninger i dette prosjektet er i samsvar med personvernregelverket.

Dine rettigheter

Så lenge du kan identifiseres i datamaterialet, har du rett til:

- innsyn i hvilke opplysninger vi behandler om deg, og å få utlevert en kopi av opplysningene
- å få rettet opplysninger om deg som er feil eller misvisende
- å få slettet personopplysninger om deg
- å sende klage til Datatilsynet om behandlingen av dine personopplysninger

Hvis du har spørsmål til studien, eller ønsker å vite mer om eller benytte deg av dine rettigheter, ta kontakt med:

- *Høgskolen i innlandet Hamar* ved prosjektansvarlig *Rebecca Anne Charboneau Stuvland*. Mail: rebecca.stuvland@inn.no. Tlf nr. 62517843.
- *Eller ved master student Lisa Bettina Skogsøy*. Mail: Skogsoylisa@gmail.com. Tlf nr. 99344197.
- For å komme i kontakt med et personvernombud representativ, ta kontakt ved, Personvern@inn.no

Hvis du har spørsmål knyttet til vurderingen som er gjort av personverntjenestene fra Sikt, kan du ta kontakt via:

- Epost: personverntjenester@sikt.no eller telefon: 73 98 40 40.

Med vennlig hilsen

Lisa Bettina Skogsøy

Prosjektansvarlig Rebecca Stuvland (veileder)

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Jeg har mottatt og forstått informasjon om prosjektet «Teacher practices to improve reading skills and comprehension in dyslexic upper secondary pupils or pupils with reading disabilities in the English subject», og har fått anledning til å stille spørsmål. Jeg samtykker til:

- å delta i *et intervju som blir tatt opp med lydopptak*

- at mine anonymiserte data lagres etter prosjektlutt, til videre forskning*

Jeg samtykker til at mine opplysninger behandles som nevnt ovenfor

(Signert av prosjektdeltaker, dato)