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Masteroppgave

Students' experiences of their English teaching across two school reforms

A study of Tripod survey data from 11 different 8th grade classrooms in Norway

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Abstract

In the fall of 2020, a new curricular reform was implemented in Norwegian primary and secondary schools. One aim of the curricular reform was to ensure students' understanding and lasting knowledge that contribute to increased learning outcomes. The current English subject curriculum (LK20) provides a framework for what, and partly how, teachers must facilitate in-depth learning through exploration. When students express that they experience curricular support, it could indicate the presence of exploratory instruction. Curricular support refers to teaching in ways that make the curriculum accessible, coherent, and engaging. As part of the Evaluation of the new curriculum reform (EDUCATE) project, this MA study investigates the overarching research question: *What characterizes students' reported experience of curricular support in English teaching in lower secondary school across two school reforms?*

To answer the research question, I used TriPod survey data, which measure students' experiences with curricular support. Through the EDUCATE project, I had access to data samples collected from 52 8th grade students during the prior curriculum (LK06), and 165 8th grade students during LK20. LK06 samples are baseline data collected in the ETOS project and are used as baseline data for comparison with EDUCATE data. To study the data, I conducted t-tests and ANOVA to determine whether there were statistically significant differences in students' perception of curricular support between the LK06 and the LK20 data.

Statistical analysis revealed that students reported frequent curricular support in English teaching, involving captivation, clarification, and consolidation in teaching, with an overall positive development over time. Students' reported captivation frequency showed the greatest increase from LK06 to LK20. Lastly, girls and boys experience similar curricular support frequency. I discuss teaching and learning theories that are associated with effective student exploration, in relation to students' reported frequency of curricular support.

An implication of this master thesis is that students might find that they experience curricular support more frequently when the teacher facilitates through exploratory instruction.

Sammendrag

Høsten 2020 ble fagfornyelsen innført på barne- og ungdomstrinnet. Et av hovedmålene for fagfornyelsen var å styrke utviklingen av elevenes forståelse og dybdelæring. Læreplanene som ble innført gjennom fagfornyelsen (LK20) sier at læreren skal tilrettelegge for dybdelæring gjennom utforsking. Hvis elever rapporterer at de får faglig støtte, kan det indikere tilstedeværelse av undersøkelsesbasert undervisning. Faglig støtte viser til undervisning som gjør læreplanmålene oppnåelige, logiske og engasjerende. Gjennom forskningsprosjektet «Evaluering av fagfornyelsen i fag» (EDUCATE), har denne oppgaven hovedproblemstillingen: *Hva karakteriserer elevers rapporterte opplevelse av faglig støtte i engelskundervisning på ungdomstrinnet, på tvers av to skolereformer?*

For å besvare problemstillingen har jeg brukt data fra elevspørreundersøkelsen TriPod, som måler elevenes opplevelse av faglig støtte. Spørreskjemadataene har jeg fått tilgang til gjennom EDUCATE-prosjektet. Datautvalget består av elevsvar fra 52 elever i 8. trinn under forrige læreplan (LK06) og 165 elever i 8. trinn under LK20. Data fra LK06 er «baseline data» som ble samlet som del av ETOS-prosjektet. Dette ble brukt for sammenligning med data fra EDUCATE. For å undersøke om det er signifikante forskjeller mellom elevenes opplevelse av faglig støtte under LK06 og LK20 har jeg brukt t-test og ANOVA.

Gjennom statistiske analyser fant jeg at elevene rapporterte at de får faglig støtte relativt ofte, og at det er en positiv utvikling over tid. Underkategorien som heter «captivate» har størst økning i rapportert hyppighet. Det betyr at elevene under LK20 rapporterte at de oftere opplever at læreren gjør det interessant og relevant for dem å lære enn under LK06. Det siste funnet er at jenter og gutter opplever hyppigheten av faglig støtte likt. I forbindelse med elevenes rapporterte hyppighet av faglig støtte diskuterer jeg teorier om undersøkelsesbasert læring og god undervisning.

Implikasjonene for denne masteroppgaven er at elever som opplever undersøkelsesbasert undervisning, også kan oppleve faglig støtte oftere.

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1.0 Introduction

My interest in students' experience and perspective of English teaching have developed over the last three years in teacher education. As a student teacher, I find that I am particularly interested in gaining knowledge about how I can motivate and engage students in the English subject classroom. During the last three years, I have taken pedagogical and didactic subjects courses called "professional identity, learning and teaching" (PROF). Through these courses I have had practicums in different schools and in different grades, in addition to working as a subject teacher in lower secondary school. These experiences have provided opportunities to talk to researchers, school leaders, teachers, and fellow student teachers about their view of English subject teaching. I have found this insight to be educational. However, I have also found that I lack insight into systematically collected data that provide information about the students' experience.

When I was given the opportunity to become a student co-researcher in the project Evaluation of the new curriculum reform (EDUCATE), I was especially interested in examining the students' perspective. EDUCATE offered data that provide valuable insight into students' reported experiences of the teaching. The EDUCATE project provided an opportunity to link data collected in EDUCATE during the curriculum reform (LK20) to baseline data from LK06. The baseline data I use in my MA study was collected in the project Evaluation of bilingual Training Opportunities in Schools (ETOS) in the school year 2019-20 (Brevik & Doetjes, 2020; Doetjes et al., 2022). The EDUCATE data were collected in the school year 2021-22. The unique opportunity to compare the data collected in the different research projects was enabled by both projects using the same survey framework. This means that the students who participated in ETOS during LK06 responded to the same survey items as the students who participated in EDUCATE during LK20. The students received an adapted version of the American survey called TriPod Student Perception Survey, which aims to gain systematic knowledge of the teaching.

The TriPod survey asks students to indicate the frequency of characteristics that are associated with effective teaching. In this MA study, I research the students' reported frequency of curricular support. The survey items in the conceptual category of curricular support, are grouped into three C-categories labeled *clarify*, *consolidate*, and *captivate*. When students express that they experience curricular support, it could indicate the presence of exploratory instruction. Exploratory instruction facilitates deep learning as students are encouraged to be

active learners through encouraging students' curiosity, critical thinking, and asking questions. LK20 has an increased focus on exploration. In this thesis I will investigate the category "curricular support" to find if there has been development in student perception of curricular support in LK20 compared to students' perception during LK06. One goal of the EDUCATE project is to link data from LK20 with data from LK06 collected in other projects. The data collected in other projects are made available as baseline data for the EDUCATE project. These data are combined with EDUCATE data from 2021-22. Having access to data collected through EDUCATE (LK20) as well as baseline data collected in ETOS (LK06) provided an opportunity to conduct research on a student perspective and also research possible developments of student perception over time and across two school reforms.

1.1 Context and relevance

Over the past three years, a new curriculum (LK20) has gradually been implemented in Norwegian schools. In 2019, the Norwegian Ministry of Education and Research explained that the goal for the new curriculum reform (LK20) was to improve students' learning and understanding (Regjeringen, 2018). In order to achieve this improvement, LK20 would provide clearer guidelines for how the school and teachers should arrange for students to acquire knowledge and understanding in the subjects, basic skills, as well as being able to apply what they learn in various contexts (Regjeringen, 2018). In comparison to the previous subject curriculum the Knowledge Promotion LK06 (2006-20), the new curriculum; the Knowledge Promotion LK20 (2021-25), emphasizes students as active learners of English to a greater degree (Norwegian Ministry of Education [NME], 2017). One of the changes made in the new English subject curriculum is the incorporation of the term "explore". Exploration was central in certain subjects, such as science, in LK06. However, exploration did not have particular focus in all subjects. In LK20, the competences students should have developed by the end of year 10 of the compulsory school contains four aims that revolve around exploration. The wording of the curriculum reads that the student is expected to be able to "explore and describe some linguistic similarities and differences between English and other languages the pupil is familiar with and use this in one's own language learning" (Norwegian Directorate for Education and Training [NDET], 2019). Further, the student is expected to "explore and reflect on the situation of indigenous peoples in the English-speaking world and in Norway", "explore and describe ways of living, ways of thinking, communication patterns and diversity in the English-speaking world" and "explore and present the content of cultural forms of expression from various media in the English-speaking world that are related to

one's own interests" (NDET, 2019). Exploration is also crucial in the overarching, core curriculum. In LK20, exploration is elaborated on in part 1.4 of the core curriculum, called "the joy of creating, engagement and the urge to explore" (Norwegian Ministry of Education [NME], 2017). In part 1.4 exploration is viewed in relation to students' curiosity and creative urge. In the core curriculum, this is expressed as follows:

> Children and young people are curious and want to discover and create. The teaching and training must give the pupils rich opportunities to become engaged and develop the urge to explore. The ability to ask questions, explore and experiment are important for in- depth learning. The school must respect and nurture different ways of exploring and creating (NME, 2017).

In the quote above, the core curriculum puts emphasis on engagement and the urge to explore, which can derive from opportunities to nurture the students' curiosity and creativity in teaching. The LK20 requires changes in teaching practices as LK20, inter alia, linking student-active and exploratory approaches to language learning. The changes in English teaching that are required by LK20 are considerable, which raises questions about whether any changes are already at hand a couple of years after the implemented reform.

EDUCATE examines instructional practices in the new curriculum using, inter alia, video-observations of classroom teaching. EDUCATE is also interested in student perception of teaching and has used the TriPod survey to access student views. According to the TriPod 7Cs creators, survey results provide insight into the students experience of the teaching, as "better survey results on the 7Cs components predict higher student achievement, engagement, and motivation, as well as success skills and mindset (TriPod Education Partners, n.d.; Fergusson, 2014). This means that when students receive adequate support from teachers, and when students are actively involved in learning activities, high scores on the curricular support survey items can be expected. Student perceptions are important for understanding and improving instructional practices and student learning, because this insight can provide valuable information about student motivation, engagement, and overall learning outcomes.

Adequate support and students' engagement in the learning activities are foregrounded in the curriculum as key for exploration. It is important to note that there is no direct correlation between and the effectiveness of the instruction, or the methods used in the instruction. The

survey items can, however, offer an indication of teaching aspects that are important for exploratory approaches. Due to the curriculum's aim of improving students' in-depth learning and understanding through increased focus on student engagement and curiosity, insight into students' assessment of the teaching during LK20 compared to their assessment during LK06 is relevant. Because curiosity and engagement are difficult to observe, this thesis uses survey items designed to measure students' perception regarding whether they feel that the lessons they receive make the curriculum engaging, accessible and coherent (TriPod Education Partners, n.d.). The conceptual category "curricular support" in the TriPod survey entails "teaching in ways that make the curriculum engaging, accessible, and coherent" (TriPod Education Partners, n.d.). I assume that relatively high scores in curricular support should be in place when teaching is exploratory. So, when students indicate that they experience curricular support, this, in turn, could indicate the presence of exploratory instruction. TriPod looks at various features of instruction, among them curricular support which can be indicative of exploratory instruction. However, TriPod does not provide a direct answer about the presence of exploratory instruction.

As explained in the section above, TriPod gathers information about student perceptions and is a valuable tool for gaining insight into students' instructional experiences. This aligns with the sociocultural theory of Vygotsky (e.g., 1978) which emphasizes the importance of understanding the context in which learning occurs. By gaining insight into students' perspectives of the teaching, I can acquire knowledge about factors that influence the students' experience of curricular support, such as the students being actively engaged in an activity. However, TriPod does not provide a direct answer about the presence of exploratory instruction.

1.2 The EDUCATE project

The EDUCATE project was initiated to research and evaluate the new curriculum of 2020. I was fortunate to be invited by Lisbeth M. Brevik, Professor at the Department of Teacher Education and School Research at the University of Oslo, to be included as a student co-researcher in the project for my master thesis for the academic year 2022-23. EDUCATE uses a multiple case design where both qualitative and quantitative data are collected. This is done in combination with a longitudinal case design where, inter alia, baseline data collected during LK06 and new data from the new English subject curriculum LK20 are compared. The first report of the EDUCATE project describes the aims of the project as follows:

The purpose of this report is to lay the foundation for providing answers on what life skills, exploration, and digital competence are in primary and secondary education, and how one can evaluate whether inclusion of these three themes in teaching leads to desired changes in teaching practice in subjects. […] Both in primary and secondary education, there is uncertainty about how the curriculum of the subject renewal should be interpreted, and there is variation in how it is used in the classroom (Brevik et al., 2023a, my translation).

As I wanted to research the student's perspective, I had the opportunity to use survey data from EDUCATE. Both new data collected after the implementation of the new English subject curriculum and baseline data were made available through EDUCATE. The baseline data were collected for the ETOS project. Both the ETOS and the EDUCATE projects have used the same TriPod survey to examine the experiences of students in lower secondary school (Brevik et al., 2023a; Brevik & Doetjes, 2020).

EDUCATE aims to evaluate the new curriculum reform and investigate with particular interest in researching how teachers include life skills, exploratory and digital competence in seven different school subjects. These are English, Norwegian, foreign languages, religion, social studies, mathematics, and science. The project has received approval from the Norwegian Centre for Research Data (NSD), and all participants provided voluntary, informed, and written consent (NESH, 2021). All the collected data are stored securely in an encrypted service for sensitive data (TSD). All personal information is pseudonymized and coded to secure participants' privacy.

My contribution to the EDUCATE project is an analysis of data from the student perspective. For this thesis specifically, the data provided by EDUCATE enables me to research how often students perceive curricular support in LK20, as well as compare students' experiences across two school reforms. The EDUCATE data also enables me to research if conditions that are expected in exploratory instruction are present. The comparison between school reforms is possible as baseline data were collected in 2019, during the last year of LK06, and the data obtained during LK20 was collected in 2021, meaning that the longitudinal design can provide valuable information about possible development and change found shortly before and after the implementation of LK20. The school years of data collection are crucial for the

ability to have a longitudinal perspective in the analysis (Ary et al., 2018). Development, or stability in the results across two school reforms can be investigated through the data sets collected as student surveys.

In the LK20, exploration for in-depth learning is newly implemented. Through the TriPod framework it is argued that the Cs that are included in the curricular support category need to be met to achieve optimal learning. The TriPod 7Cs survey is further elaborated on in the following section, as well as in the methods chapter, section 3.3. To make teaching "engaging, accessible, and coherent" (TriPod Education Partners, n.d.), the instruction needs to *captivate*, *clarify*, and *consolidate*. By utilizing the *curricular support* categories *clarify*, *consolidate*, and *captivate*, this study seeks to investigate the development in reported student perception with particular focus on the newly explicitly implemented focus on exploratory instruction.

1.2.1 TriPod's 7Cs survey

The students answered a translated and adapted version of the survey named "The seven Cs". This survey framework is developed by Ronald Ferguson at Harvard University (Ferguson, 2012). The seven Cs survey is developed to measure the students' experience of the teaching and the learning environment in different ways. The Norwegian adaptation of the survey consists of 38 statements. The statements describe characteristics of good teaching and a good learning environment, and are divided into 7 subgroups, hence the name 7Cs. The 7Cs are *care*, *confer*, *captivate*, *clarify*, *consolidate*, *challenge*, and *classroom management* (the *classroom management* category is in some literature referred to as *control*). These are divided into three conceptual categories namely, *curricular support*, *personal support*, and *academic press*. The Cs used for this MA study are *captivate*, *consolidate*, and *clarify*, from the conceptual category of *curricular support*. The survey items were translated to Norwegian and piloted in a Norwegian context, with a few additions in the form of three extra items that clarify what the items in the C-categories want answers to (Klette, et al., 2017). The piloting of the translated survey, in a Norwegian context, is important as it increases the validity of the survey. All the survey items in *curricular support* are accounted for in section 4.1 descriptive statistics.

1.2.2 Curricular support Cs

As explained in the section above, the curricular support category is made up by the three Cs *consolidate*, *clarify*, and *captivate*. The three Cs combined, measure how the teaching makes the curriculum and the teaching material engaging, accessible, and coherent for the students. The survey items in the *curricular support* category are presented in Table 1.1:

Table 1. 1. The survey items in the overall curricular support category

C-category:	Item:	
Consolidate	I:32	My teacher takes the time to summarize what we learn each day.
	I:33	My teacher checks to make sure we understand what s/he is teaching us.
	I:34	We get helpful comments to let us know what we did wrong on assignments.
	I:35	The comments that I get on my work in this class help me understand how to improve.
Clarify	I:11	If you don't understand something, my teacher explains it another way.
	I:12	My teacher knows when the class understands, and when we do not.
	I:13	When s/he is teaching us, my teacher thinks we understand when we don't.
	I:14	My teacher has several good ways to explain each topic that we cover in class.
	I:15	My teacher explains difficult things clearly.
	I:36	My teacher moves too fast through the material.
Captivate	I:23	This class does not keep my attention – I get bored.
	I:24	My teacher makes learning enjoyable.
	I:25	My teacher makes lessons interesting.
	I:26	I like the way we learn in this class.

Consolidate is one of the three Cs that make up the conceptual category of curricular support. 'Consolidate' refers to the following, according to TriPod: "Teachers who consolidate help students integrate and synthesize key ideas. They summarize and make connections in ways that help students see relationships within and across lessons, remember ideas, and build understanding over time" (TriPod Education Partners, n.d.). The purpose of the consolidate survey items is to measure the degree to which students believe their teachers make an effort to assist them, to help them remember what they have learned, and to summarize what they have learned each day. TriPod defined the concept of 'consolidate' as crucial for learning (TriPod Education Partners, n.d.).

The EDUCATE project focuses on examining consolidation, as is evident in the EDUCATE observation protocol and its use of TriPod. The protocol and TriPod take different perspectives on consolidation, as the EDUCATE protocol highlights students' consolidation work and TriPod highlights the students' perception of the teachers' consolidation work (Brevik et al., 2023a). In this MA study, I will examine how students perceive that teachers consolidate learning. According to Ferguson (2012) consolidation is important to students' learning because teachers who consolidate, summarize, and help their students understand and make connections that help the students see relationships across and within lessons, they remember ideas, and overtime they build understanding. To facilitate the students' learning, the teacher needs to create an environment that builds on the students existing knowledge. Sawyer (2014) puts it as "if teaching does not engage their prior knowledge, students often learn information just well enough to pass the test, and then revert back to their misconceptions outside of the classroom" (p. 2). Consolidation has been highlighted by the EDUCATE team in the protocol as a crucial component of exploration. The student engagement in consolidation is emphasized (Brevik et al., 2023a). Which means that the students' reflections and development is crucial in the consolidation process. An example of how the student engagement in consolidation is emphasized in the coding manual is formulated as follows: "one or more students draw conclusions, discuss or reflect upon the process or the results of their work" (Brevik et al., 2023a, p. 48, my translation).

The C-category *clarify* asks students to place the teacher's ability to be clear on a scale from always to never. TriPod explains the *clarify* category as follows: "Teachers who clarify help students understand content and resolve confusion. They explain ideas and concepts in a variety of ways, check frequently for understanding, address misconceptions, and provide useful feedback" (TriPod Education Partners, n.d.). Clarity in the teaching is important, as students must be able to understand the basis of a concept to further develop their comprehension (e.g., Vygotsky, 1978).

Clarity plays an important role in how effective the instruction is. Hattie (2012) expresses it as "the more transparent the teacher makes the learning goals, the more likely the student is to engage in the work needed to meet the goal (Hattie, 2012, p. 46). When goals have appropriate challenges and teachers and students are committed to these goals, a clearer understanding of the criteria for success is likely to be shared (Hattie & Timperley, 2007). Further, Hattie (2012) elaborates on the importance of being clear in the criteria of success.

Students are more likely to succeed when they are able to identify the specific actions that are required to attain these criteria (Hattie, 2012, p. 46).

The final C in curricular support is *captivate*. TriPod describes this category as follows "Teachers who captivate spark and maintain student interest in learning. They stimulate and engage students by cultivating curiosity and inquiry and by making lessons interesting, relevant, and enjoyable" (TriPod Education Partners, n.d.). The LK20 has incorporated the term exploration, as well as formulations that point towards teachers facilitating activities that arrange for students to experience genuine engagement. This will be elaborated on in the theory chapter of this thesis (p. 11).

1.3 Aims and research questions

This MA study investigates students' reported experiences of their English teaching in lower secondary school across two school reforms, with special focus on students in year 8 of Norwegian compulsory education. To research students' experience of exploratory instruction in the English subject classroom, I will research the constructs *consolidate*, *clarify*, and *captivate* as well as the conceptual category *curricular support* that holds the three items mentioned. Due to the actuality of gender differences in education in Norway, and the longitudinal perspective across two school reforms, I will also research the difference in experience between student groups. The two student groups that are investigated are students who identify as girls and boys. The overarching research question of my MA study is:

What characterizes students' reported experience of curricular support in English teaching in lower secondary school across two school reforms?

To answer the overarching research question, I have formulated two sub-questions:

RQ1: *How has students' reported experience of curricular support in English teaching in lower secondary school developed across two school reforms?*

RQ2: *What characterizes the response of different student groups to questions about curricular support across two school reforms?*

This MA study contributes with statistical data about students' experience of English teaching across two school reforms with particular focus on the newly implemented focus on exploration.

1.4 Thesis outline

Following this introductory chapter, I present the theoretical framework and overview of relevant prior research, in chapter 2. Chapter 3 presents the methods used, with a detailed account for the methods used for analyzing the survey data. In chapter 4, the findings of my study are presented. Chapter 5 discusses the findings in light of theory and prior research, followed by further didactical implications of my study. The final chapter, chapter 6, contains the conclusion, and suggestions for further research.

2.0 Theory and prior research

In this chapter, I will introduce the theoretical framework for my MA study. A review of prior research will also be presented. Since this MA study is connecting exploratory instruction to the *curricular support* C-categories in TriPod (*clarify, consolidate, captivate*), I find Vygotsky's (1978) sociocultural theory to comprise an appropriate theoretical framing for this study. Vygotsky's theories are key in research on student-centered approaches, as exploratory instruction also aims to do.

First, I will present Vygotsky's sociocultural theory (2.1) and his theory on the Zone of Proximal Development (2.1.1) because this theoretical framework describes elements that need to be in place to facilitate student-active processes in the classroom. In the same section, I also introduce theories that are closely related to the Zone of Proximal Development. Because Vygotsky's theories are relevant for approaches to exploratory instruction, I then present theories underpinning exploratory approaches (2.2). As these theories specify elements that must be present for students' development, they are relevant in light of the TriPod survey constructs that address students' perceptions of how often their teacher offers curricular support. For example, *clarify* items address students' perceptions about how often their teacher offers support for understanding subject content, if the teacher is perceptive and recognizes when the class understands subject content, or not, and if the teacher tries to explain the content in diverse ways to cater to the needs of the students. These points align with key aspects of Vygotsky's ZPD. Finally, I provide theory on gender differences in school (2.3).

2.1 Sociocultural theory

Lev Vygotsky's sociocultural theory (SCT) provides a theoretical framework that contributes to the understanding of human development. Although Vygotsky's theory concerns student learning and development, and not the student perspective which is the focus of this thesis, his theories are relevant for the thesis. His theoretical framework is important for understanding what instruction needs to cater for students' development. The TriPod student survey, which provides data for this MA study, measures students' experience of the presence of key elements in instruction that support student development, such as teacher feedback and teacher recognition of student needs when it comes to understanding subject content.

Therefore, students' perception of the teaching can be viewed in light of Vygotsky's theoretical framework.

The work of Vygotsky (e.g., Vygotsky, 1934, 1978) views human development as a socially mediated process where learners develop through social interaction and experiences. Lantolf et al. (2015) describe the main characteristics of Vygotsky's SCT as a process of development that takes place through "participation in cultural, linguistic, and historically formed settings such as family life, peer group interaction, and in institutional contexts like schooling, organized social activities, and work places (to name only a few)" (Lantolf et al., 2015, p. 1). SCT emphasizes the importance of social interaction and collaboration.

In Vygotsky's SCT, language is both a personal and a social human process involving interaction with others (e.g., Vygotsky, 1978). Lantolf (2012) elucidates that Vygotsky's SCT has been used in explaining second language acquisition for a long time. In SCT, a central idea is that humans use their existing social and cultural artifacts as basis as they create new ones, as well as allowing new ones to coordinate their behavioral activity (Lantolf et al., 2015). In SCT, development is believed to progress through participation in social situations. These situations can be instructional or in out-of-school settings. The theory of development through active participation and collaboration aligns with the principles of exploratory instruction, discussed in more detail below. In exploratory instruction, it is believed that the teacher should facilitate learning through activities such as subject relevant discussions, group activities, reflection, and dialogue (Saunders-Stewart et al., 2015).

Brevik (2015), who builds on Vygotsky's work, suggests that learners who are actively participating in the learning environment, will mediate the knowledge they encounter and thereby reshape their understanding and reposition themselves within the practices they meet. These are learners that are not passive receivers of information, but rather active participants that engage with a task. They are engaged as they attempt to make sense through personal experience and cultural experience. By doing this, the learner is able to make a personal connection between in-school tasks and settings out-of-school. The theory of students being actively engaged in the learning process is consistent with the concept of exploration in the LK20. This form of exploration can be viewed in relation to Vygotsky's active learner. The Vygotskyan language learner is neither passive nor receptive. The learner is engaged in the

task. In turn, the engagement allows the learners to "relate the public meaning-making to their personal experiences and interests" (Brevik, 2015, p. 210).

2.1.1 The Zone of Proximal Development

In his focus on development and learning, Vygotsky formulated a key construct on how information can become refined and coherent knowledge. For Vygotsky, this could occur with the assistance of others. To fully understand the mediation process, one needs to understand Vygotsky's Zone of Proximal Development (ZPD). The ZPD represents the distance between what a learner can understand independently, and what the learner is able to understand with assistance:

> It is the distance between the actual developmental levels as determined by independent problem solving and the level of potential development as determined through problem solving under adult guidance or in collaboration with more capable peers (Vygotsky, 1978, p. 86).

Lantolf et al. (2015) suggests that there are several reasons for the lasting captivation the theory of ZPD has on educators and psychologists. The notion of assisted performance is the first reason mentioned. Further, they argue that ZPD comes across as compelling, because of the implied indication of looking forward. Which means that what a learner is able to do with mediation today, the learner can be able to do independently in the future (Lantolf, 2012). Vygotsky (1978) states that for mediation to result in development, it needs to be sensitive to the individual's own ZPD. The ZPD is presented in Figure 1.
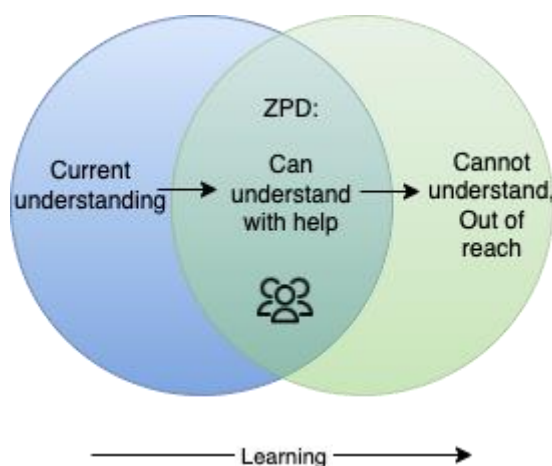
Figure 1. A model of the Zone of Proximal Development. Based on Vygotsky (1978, p. 86).

The ZPD can be reached with the help of others, such as peers or the teacher, but the help can also be provided by material artifacts such as tools and computers (Lantolf et al. 2015). ZPD is interconnected with Vygotsky's theory of scaffolding. Scaffolding is a teaching approach where the assistance of, for instance the teacher, is crucial for the learners to reach a higher level of understanding. Wood et al. (1976) define scaffolding as a "process that enables a child or novice to solve a problem, carry out a task or achieve a goal which would be beyond his unassisted efforts" (p. 90). Vygotsky defined scaffolding as "the role of teachers and others in supporting the learner's development and providing support structures to get to that next stage or level" (Raymond, 2000, p. 176). Hattie (2012) explains that the purpose of scaffolding is to "provide support, knowledge, strategies, modelling, questioning, instructing, restructuring, and other forms of feedback, with the intention that the student comes to ´own´ the knowledge, understanding, and concepts" (p. 129). The intention of scaffolding is to help learners comprehend content within their own ZPD. While scaffolding provides targeted support and guidance, consolidation solidifies and strengthens the students' acquired knowledge. Scaffolding and consolidation both work as support for the student while the construction of development and learning takes place. In the TriPod C-category of *consolidate* students' report the frequency of perceived consolidation in the English classroom. The student's requirement of assistance in developing their knowledge, is consistent with the role of the teacher in exploratory approaches (Dobber et al. 2017, p. 197).

Furthermore, the concept of the ZPD provides a framework for differentiating instruction, as it helps teachers identify and scaffold learning experiences that are tailored to the individual students' needs and abilities. Tailoring lessons and providing support for the students' unique needs, coincided with what Skaalvik and Skaalvik (2018) describe as differentiation. They explain that when the choice of tasks, content, and the degree of difficulty in the teaching is determined by the student ZPD, it is also a form of differentiation. They further describe how the differentiation then "becomes teaching that is concentrated on the individual pupil's zone of proximal development, and which therefore contributes to the pupils constantly stretching and developing. This will place great demands on the differentiation in the teaching" (Skaalvik & Skaalvik, 2018, p. 73, my translation). Similarly, Tomlinson (2014) argues that as the teacher learns to know their students, they also gain a better understanding of how they can actively attend to students' differences. By differentiating, the teacher can facilitate activities that can lead to stimulation of the brain's reward-processing regions, causing the

release of dopamine and an improvement in attention, memory, and motivation (Sousa & Tomlinson, 2011). The concept of ZPD, with its emphasis on differentiated instruction and scaffolding are highly relevant to the student perspective, as cognitive development occurs within the mind of the student.

In the differentiated classroom, students should leave the class with a steady grasp on the subject content, even if they do not leave the class with a conception that they have mastered everything that is to learn. Further, clarity about what is the most essential to understand is emphasized and might increase the likelihood of more students finding the topic appropriate, meaningful, and interesting (TriPod Education Partners, n.d.). The TriPod C-category of *clarify* is closely linked to differentiation as clarity facilitates effective differentiation. Students are better equipped to comprehend and interact with the content when the teacher provides clear instruction. With this clarity, teachers can differentiate the instruction by adjusting to the individual student's needs. Tomlinson (2014) describes it as "clarity ensures struggling learners don't drown in a pool of disjointed facts and information; it ensures advanced learners spend their time grappling with important complexities rather than repeating work or simply accruing more data" (p. 17). The teacher's ability to differentiate and provide clear instruction is important for the students' development and can therefore be viewed as characteristics of good teaching. The TriPod conceptual category of *curricular support* concerns matters such as whether the teacher recognizes when students understand subject content, whether the teacher can explain the material in different ways, and whether the teacher gives students helpful feedback. These TriPod items align with the emphasis in Vygotsky's theory on differentiated instruction and tailored and constructive feedback. Thus, the occurrence of differentiation and clarity might influence the reported student perception of curricular support.

2.2 Exploratory learning theory

Vygotsky has inspired theory on inquiry-based instruction (IBI), which is often used synonymously with exploratory instruction. Social interaction, the ZPD, and scaffolding are some features from Vygotsky's theory that are evident in approaches to IBI. Theories of IBI are important to understand because they underlie the curriculum, but also because they are relevant for TriPod. IBI underlies the curriculum, as the term "exploration" is incorporated in both the specific competence aims of the English subject curriculum, but also in the core elements of LK20. IBI is an approach that involves the teacher facilitating for the students' to

be actively engaged, encouraging curiosity, and the students' urge to explore. These are elements that are associated with good teaching. IBI is also relevant for the TriPod survey, as the survey measures the frequency of the teacher providing helpful feedback, the frequency of the teacher recognizing when the students do understand the subject matter and the frequency of the teacher explaining difficult subject content in different ways.

In the new subject curriculum (LK20) four of the 19 aims include the term "explore" when describing the expected ability level of the students after year 10. The wording of the curriculum reform coincides well with IBI, as the theory focuses on providing opportunities for the students to formulate and examine, make observations, generate questions, and discover knowledge gaps, as well as find ways to cover these knowledge gaps (Albrechtsen & Qvortrup, 2017). Student-centered learning differs from traditional learning in that the students have a central role in the process of learning when the instruction is student-centered (Estes, 2004). Traditional learning is described as the teacher function as a lecturer and "a mediator for students' knowledge" (Chu et al. 2017) whilst the students' role was often passive. Chu et al. (2017) explains that the passive student role in traditional theories is often criticized for "being a stifle to learners' development of deep thinking as well as their ability to apply knowledge and reasoning skills" (Chu et al., 2017, p. 35).

There is a close relation between Vygotsky's ZPD and IBI, as the two theories share a common starting point, which is the learners' current level of skill and knowledge (Harland, 2003, p. 266). To achieve in-depth learning, internalization, the learner must actively process an experience. To modify the experience the learner needs to understand it with the basis of previous experiences, and then the learner develops their understanding or way of thinking (Doolittle, p. 84). Alfieri et al. (2011) refer to the benefits of IBI in the classroom by explaining that "allowing students to interact with materials, models, manipulate variables, explore phenomena, and attempt to apply principles affords them with opportunities to notice patterns, discover their underlying causalities, and learn in ways that are seemingly more robust" (p. 3). Thus, IBI seems to engage students and facilitate optimal learning. This kind of approach has mostly been examined in relation to the natural sciences subjects, and not much within the humanities, such as English (Brevik et al., 2023a).

To meet the needs of the students struggling with high-level inquiry activities, Zhao et al. (2021) suggest that the teacher must be aware of the students' needs for support. Zhao et al.

(2021) acknowledge the possible challenges of learning activities with open inquiry, as these types of activities can be challenging for students with lower ability as they may find the uncertainty of high-level inquiry overwhelming (Gormally et al. 2009). Although Zhao et al. (2021) write about science education specifically, the theoretical framework of IBI can be used as general educational theory, as it is not subject specific. The teacher's awareness can aid the student to reach their learning potential in all subjects. The instructor's ability to meet the needs of the students might be possible to uncover through TriPod items in the curricular support category. Survey items such as consolidate-item number 33 "My teacher checks to make sure we understand what s/he is teaching us" or *clarify* item number 15 "My teacher explains difficult things clearly", might contribute to our understanding of the level of success in the exploratory instruction provided in the classroom.

Exploratory instruction can support in-depth learning by providing opportunities for students to engage deeply with a topic through asking questions and developing a deeper understanding of key concepts. The ability to explore and develop curiosity is one of the core aims of the curriculum reform. In LK20, the school has a responsibility to respect and facilitate the development of the students' urge to explore. Exploration and in-depth learning are also linked in part 3.2 of the core curriculum, called "Teaching and differentiated instruction". In this part of the core curriculum, time to explore is seen in relation to in-depth learning. The wording of the core curriculum is as follows:

> The pupils must be given the time to explore various subject areas in depth. Giving room for in-depth learning requires that the school takes into consideration that the pupils are different and learn at different speeds and with different progression. (NME, 2017)

In-depth learning is a central aim of exploration in the new subject curriculum. In the Cambridge handbook of the learning sciences, Sawyer (2014) outlines the importance of accomplishing a deeper conceptual understanding. According to Sawyer (2014), the use of factual knowledge is only useful when a person knows what situations the aforementioned knowledge can be applied to, as well as understanding how to modify the information for different situations. When students gain a deeper conceptual understanding, the facts and procedures they learn can be transferred to real-world settings and are much more profound and useful (Sawyer, 2014, p. 2). Further, Sawyer (2014) explains how, what he calls "learning

knowledge deeply" requires students to be active in the learning process (p. 4). This requires the learners to relate new ideas and concepts to previous experiences and knowledge. Hattie (2012) argues that a crucial part of deep learning is for the teacher to be familiar with the different students' current knowledge status. By possessing this knowledge about the student's current knowledge and understanding, the teacher is able to tailor the lesson to bridge the gap between the students current understanding and knowledge, and the target knowledge and understanding (Hattie, 2012).

The TriPod survey aims to measure student experience of engagement, or motivation, more directly, in the C-category *captivate*. These insights are relevant for understanding the students' perceptions of motivation and cognitive processes, which might lead to more effective instructional strategies that align with students' needs and promote optimal learning outcomes. Self-determination theory (SDT) is a psychological theory on motivation, which can be used to explain why students can experience both engagement and frustration with high-level inquiry learning activities. In SDT the individual humans are viewed as proactive (Ryan & Deci, 2017). There are three basic psychological needs that must be fulfilled for a learner to flourish in SDT. These needs are autonomy, competence, and relatedness (Ryan & Deci, 2000; Niemiec & Ryan, 2009; Ryan & Decy, 2017). Having a choice and a say in the learning activity is what is referred to as autonomy. Further, the need for competence refers to the ability to understand or master a skill. Relatedness means that the learner needs support and validation and connection to others (Ryan & Deci, 2017; Zhao et al., 2021). In SDT, humans are believed to have a fundamental inclination towards development and learning (Guay, 2022). The tendency towards development does, however, require a supportive environment. Guay (2022) distinguishes between types of motivation for school and learning. The motivation is either autonomous or controlled. Whether the motivation is autonomous or controlled is fundamental in SDT, as they lead to "different quality of outcomes" (Guay, 2022).

Attard (2014) also proposes that by creating opportunities for students to explore concepts that have practical applications to their lives, teachers can help students see the value and the relevance of what they are learning. This recognition can lead to greater student engagement and motivation. Student engagement and motivation can be viewed in relation to the TriPod C-category of *captivate*. In the *captivate* category, TriPod measures the frequency of students' perception of the teaching being interesting and enjoyable. To achieve student engagement,

Attard (2014) has developed the Framework for Engagement with Mathematics (FEM). The FEM is based on results from a qualitative study of what influences student engagement during middle school (Attard, 2014; Attard, 2021). The FEM was developed specifically for the field of mathematics education. Some of the principles presented in the FEM could potentially be adapted to other subjects, such as English. The aforementioned framework provides a practical way to differentiate instruction by promoting student engagement and understanding with activities that are tailored to the individual students interests and abilities. The activities are also designed for student exploration and collaboration among students (Attard, 2014). One key principle of the FEM is the importance of creating an inclusive and positive classroom environment that supports development and student engagement. This environment is fostered by the teacher acknowledging the student's ability and learning needs. It coincides with Vygotsky's ZPD, where there is an emphasis on the importance of the instructor having thorough knowledge about the individual student's current understanding (Vygotsky, 1978). Additionally, the FEM describes how an engaging (mathematics) classroom includes substantive conversations about concepts and their application to life.

Students' experience of the instruction being interesting, enjoyable, and captivating can be viewed in relation to the students being active learners. The importance of researching the students' perspective of the frequency of different curricular support elements, can be seen in relation to both Vygotsky's (1978) theory of development in social contexts where the learner is actively engaged, and further to theory of inquiry-based instruction, where the students are believed to benefit from IBI.

2.3 Gender differences in school

Gender has been frequently discussed in the context of Norwegian schools for years. Studies conducted in the Nordic context, find that it is a general pattern that boys have a lower grade point average than girls (Bakken, 2008; Sandsør & Brevik, in review). A study by Legewie and DiPrete (2012) found that the cause of the average grade difference between boys and girls depended on conditions both outside the school context, as well as conditions in the classroom and school context. According to Legewie and DiPrete (2012), this finding suggests that the conditions in the school context can, to some extent, compensate for the background variables of the different students. In the Norwegian context, similar findings have been made, where the gender differences are reduced in schools with high learning pressure, good learning processes and clear expectations (Bakken, 2009).

In 2017, an expert committee (Stoltenberutvalget) was appointed, to develop a report on gender differences in school performance (Stoltenberg, 2019). The report was submitted to the Ministry of Education and Science in 2019, entitled "Situation description of gender differences in education and in the life course" (Stoltenberg, 2019). The report stated that in primary school level, boys receive lower scores than girls on assessments such as the national tests. Thus, the report clarifies that although a large group of boys receive higher scores, the same applies for an even larger group of girls (Stoltenberg, 2019). Further, it is also reported that fewer boys attend higher education, compared to girls. The report also explained that the knowledge base on the causes of the gender differences is weak because this has not been a main research focus (Stoltenberg, 2019). Possible measures are also explained in the report, based on Aasen et al. (2015) finding that motivation, work effort and adaptation to school norms correspond with teacher evaluation. Due to these gender differences, the Stoltenberg committee suggested increased focus on differentiated teaching as a way to even out the differences between the student groups. Differentiating to meet all students at their own level coincides with Vygotsky's ZPD (Vygotsky, 1978). I use the student responses about the teaching they receive to assume that the pattern of high motivation, work effort and ability to adapt to school norms coincides with the student perception reported in the data used for this thesis research. Because of the actuality of gender differences in education in Norway, and the longitudinal perspective across two school reforms, this MA study poses a research question about the experience of different student groups. The two student groups that are investigated are students who identify as boys and girls.

In an article titled "Gender differences in school performance – an explanation of students' attitudes towards and behavior in school, as well as personal relations" (my translation), Aasen et al. (2015) examined students' attitudes and behavior in school, as well as relational conditions, may contribute to explain gender differences in school performance. Students in 5th through 10th grades participated in the research (Aasen et al., 2015). The research revealed that motivation, work effort, and adaptation to the school's norms were most important for the students' achievements. Their analyses revealed that high motivation and work effort, in addition to the student's adaptation to the school's norms, correspond to high teacher evaluation, and the opposite, meaning that poor student adaptability to school norms, and low motivation and work effort are related to low teacher evaluation. Additionally, they discovered that among the researched factors, the student evaluation was fairly equal.

According to Aasen et al. (2015), teachers find gender discrepancies between girls and boys to be more substantial than the students find themselves. They go on to explain how this might be caused by boys rating their skills more favorably than there is basis for. But there is also a possibility that teachers overestimate the differences between girls and boys.

Finally, Sandsør and Brevik (in review) argued that there is increasing evidence that girls' educational performance in English improve more than boys' performance. The study aimed to investigate the development of gender gaps in English reading, using national test data among more than 1 million students aged 10 and 13 for a period of ten years (2007-2018). In contrast to previous findings, they found a gradual shift in favor of boys for English reading. In contrast, girls continued to outperform boys in Norwegian reading. This finding might indicate a shift where boys outperform girls when reading in English, although girls outperform boys when reading in Norwegian.

3.0 Methodology

In this chapter, I will present the methodology that I have used to answer my overarching research question: *What characterizes students' reported experience of English teaching in lower secondary school across two school reforms?* First, I will present the research design I have chosen for this MA study (3.1). Then, I will present the sample and the sampling procedures used in the selection of participants (3.2). I will give an in-depth description of the survey (3.3). Further, I will present the data analysis (3.4). Finally, I will address research credibility, reliability and validity, and ethical considerations (3.5).

3.1 The research design

This MA study is based on quantitative data from student surveys. As I want to investigate the students' experiences of English instruction, surveys are recognized as an effective method to gain this type of information. According to Frønes and Pettersen (2021), the use of surveys enables the researcher to gain insight into whether students find that teacher support is sufficient, and to what extent the students experience cognitive challenges in the instruction. Frønes and Pettersen (2021) write that sufficient support and students' experience of cognitive challenges are two aspects that many studies have found to be typical characteristics of good teaching practice. Cognitive challenges, in the students' ZPD, and teacher support, or scaffolding, are elements that are central in exploratory instruction and in Vygotsky's sociocultural theory. The TriPod student survey intends to gather data regarding the students' perception of curricular support. By eliciting feedback from the students about the teacher's clarity, consolidation, and captivation, it is possible to get an indication of the teaching quality (TriPod Education Partners, n.d.; Fergusson, 2014).

The EDUCATE project combines baseline data from projects (e.g. ETOS) that collected data during LK06 with data collected in EDUCATE during LK20. The sampling in the ETOS project was purposeful (Brevik & Doetjes, 2020), as the classes and schools were recruited based on their fulfillment of certain criteria that are expedient for the study in question, in line with Blikstad-Balas and Dalland (2021) and Ary et al., (2018). In the EDUCATE project, the sampling was done based on strategic considerations (Brevik et al., 2023a). One criterion used in EDUCATE was to invite schools that had already provided baseline data in other projects, but other schools were also invited. At the lower secondary level, EDUCATE invited schools systematically based on their results on national tests, with results both coinciding with the

national average as well as above and below the average. In addition, the schools were selected based on geographical and demographical variables to ensure variation between schools in cities and rural areas, as well as low, medium, and high socio-economic characteristics (Brevik et al., 2023a). By using this method of selection, maximum variation is ensured.

3.2 Sampling for the MA thesis

In this section, I will elaborate on the sample of my MA thesis. The baseline data from ETOS was collected for three different grades (8th, 9[th,] and 10th). The data collected in the English subject in lower secondary school in the EDUCATE project so far, was collected in 8th grade. As I was interested in a comparative investigation of the research data collected before and after the implementation of LK20, I have chosen to solely analyze data collected in 8th grade. By only analyzing data from 8th grade, I am able to conduct research on what Ary et al. (2018) describe as comparison groups. The sample for my MA study thus consists of data collected from the sampling of ETOS and EDUCATE projects. The samples were sifted to leave me with comparison groups for my research.

Table 3. 1. Overview of the sampled data material

Project (time of data collection)	Schools/classes	Number of participants
ETOS (2019/2020)	2 schools, 2 classes	52 (34 girls, 18 boys)
EDUCATE (2021/2022)	4 schools, 9 classes	165 (83 girls, 77 boys, 5 other)
Total:	6 schools, 11 classes	217 (117 girls, 95 boys, 5 other)

Table 3.1 shows that the ETOS project collected data during the school year of 2019/2020. These data were collected from two schools and two different classes. The total number of students participating was 52. Gender is a variable that will be examined in the analysis. Of the 52 participants in ETOS there were 34 girls and 18 boys. The data from EDUCATE was collected in the school year of 2021/2022. This data were collected from four schools and nine different classes. The total number of participants was 165. Of the 165 participants, there were 83 girls, 77 boys and 5 participants in the category other. In the data sets participants who have selected a combination of both a gender and "other", both "boy" and "girl" or "other" have also been placed in the category "other" (Brevik et al., 2023b). There are only five participants in this category. These participants are included in all the analyses, except

from the analysis done for gender differences. There are not enough participants to find results that can be valid to say anything tendentious about this group, and we do not know why they chose this category (Brevik et al., 2023b). All the data were collected from 8th grade.

Data completeness refers to the comprehensiveness of the data. For data to be complete, there should not be any missing information. The missing data in the two data sets seemed to be missing completely at random (MCAR) (Little & Rubin, 2020). Due to missing responses to certain survey items, and to ensure that the accuracy and reliability of the research is provided for, I decided to completely remove the answers of 8 participants in the ETOS project and 9 participants from EDUCATE. This leaves 44 participants from ETOS and 156 participants from EDUCATE.

3.3 The survey

In this section, I will describe and give the reader insight into the survey that was used in the collection of data. The survey that has been used in both ETOS (2019/2020, LK06) and EDUCATE (2021/2022, LK20), was primarily collected through the TriPod 7Cs survey. The TriPod survey was developed by Ronald Ferguson at Harvard University (TriPod Education Partners, n.d.; Ferguson, 2012). The TriPod survey items are divided into seven more detailed groups: *care*, *confer*, *captivate*, *clarify*, *consolidate*, *challenge*, and *control*. These 7Cs are further grouped into three conceptual categories: *personal support* (*care* and *confer*), *curricular support* (*captivate*, *clarify*, and *consolidate*), and *academic press* (challenge and control). The intention of the survey items is that the student answers to the TriPod 7Cs can provide insight into how students experience their teachers' teaching practices.

The survey used in both ETOS (LK06) and EDUCATE (LK20) consisted of 35 TriPod items, as well as three items that were added after the TriPod survey was piloted in Norway in 2015 through the LISA-project (Klette et al., 2017). Since 2015, several research projects in the Nordic countries have implemented the Norwegian version of the TriPod survey; including Quality in Nordic Teaching (QUINT) and the LISA Nordic project (Blikstad-Balas & Roe, 2020). The LISE project (Brevik 2019; Brevik & Rindal, 2020), the ETOS project (Brevik & Doetjes, 2020) and the EDUCATE project (Brevik et al., 2023a, 2023b). The three additional survey items were added at the suggestion of the students to further measure what the existing items were already aiming to measure. Of the three added items, one item is in the *clarify*

category, and the two other items are in the *care* category. The *clarify* item is number 36 in the survey. Due to the corresponding aim of the TriPod survey and the added survey items, I will continue to refer to the survey as TriPod. TriPod consists of survey items that describe characteristics of effective teaching. Ferguson (2012) states that in TriPod, he has found that "well-crafted student surveys can play an important role in suggesting directions for professional development and also in evaluating teacher effectiveness" (p. 25).

The survey data collected using the Norwegian adaptation of Ferguson's TriPod survey enables me to research students' experience of curricular support on a detailed level, as I can look at the conceptual category of curricular support, the 3C constructs, and specific items (Brevik et al., 2023a). In this MA thesis, I examine how the items in the 3C construct or categories in the conceptual category curricular support are perceived by students. I consider the students' responses in the context of the LK20 curricular reform that emphasizes exploration for engagement and in-depth learning. I assume that the categories within curricular support can provide an indication of whether teaching includes elements that could be expected to occur frequently in teaching in the LK20 or not.

3.3.1 The survey items

The 38 TriPod survey items are designed to be answered on a scale of 1-5. TriPod uses an ordinal scale that measures survey answers in the set order of "never" to "always". Although the ordinal scale measures the extent to which something possesses a defined characteristic, one cannot assume the distance between points to be equal (Ary et al., 2018). To enable statistical analysis, the responses are coded as follows: "never" is coded as 1, "rarely" is coded as 2, "sometimes" is coded as 3, "often" is coded as 4, "always" is coded as 5. The numerical values are used to calculate mean scores and other statistical measures such as the hypothesis tests described in section 3.4 Data analysis. The students' responses on this scale are thought to reflect the degree to which students perceive the teacher as exhibiting a particular behavior or facilitating through providing particular conditions. The "never" to "always" scale used in the TriPod 7Cs survey items, allows students to report how frequently they observe teacher behavior that is often found in effective teaching. In this MA study, the survey answers are also used to provide information about properties of teaching that are expected to be in place if exploratory instruction occurs. The survey items formulated in TriPod aligns with what Grønmo (2016) classifies as closed questions. Grønmo (2016) argues

that closed questions are easier for the respondent to answer. The given alternatives to a closed question can also aid in clarifying what the question is asking for.

3.3.2 The 7Cs categories

The survey items in the Norwegian adaptation of the TriPod 7Cs survey are, as the original TriPod survey, gathered under seven headings. The seven Cs are *care*, *confer*, *control*, *challenge*, *clarify*, *captivate*, and *consolidate*. The seven headings are grounded in research-based knowledge about effective teaching (Ferguson, 2012). Each of the C's are measured through several survey items. Each C has between four and eight survey items. The 7Cs are grouped into three main conceptual categories. The conceptual categories are described in Table 3.2:

Table 3. 2. An overview of the categories and Cs of the TriPod 7Cs[1]

The conceptual categories	Categories (the 7Cs)	Explanations (Ferguson, 2012)
Personal support	Care	Caring about students, encouragement, and support
	Confer	Conferring with students. Students sense their ideas are respected.
Academic press	Control	Controlling behavior, press for cooperation and peer support
	Challenge	Challenging students, press for effort, perseverance, and rigor.
Curricular support	Clarify	Clarifying lessons, success seems feasible.
	Captivate	Captivating students, learning seems interesting and relevant.
	Consolidate	Consolidating knowledge. Ideas get connected and integrated.

The overview presented above is based on descriptions provided by Ferguson (Ferguson, 2011; Ferguson, 2012; TriPod Education Partners, n.d.). The academic press category named

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[1] Ferguson, 2011; Ferguson, 2012; TriPod Education Partners, n.d.

"control" has later been relabeled "classroom management" (TriPod Education Partners, n.d.). Ferguson (2012) elaborates on the 7Cs and provides a more in-depth description of what the survey is aiming to measure.

The 7Cs are divided into three conceptual categories: *Personal support* (*care* and *confer*), *academic press* (*challenge* and *classroom management*), and *curricular support* (*captivate*, *clarify*, and *consolidate*). *Personal support* concerns the relationship between the teacher and the student and whether the teacher is able to make the student feel valued and welcomed (Ferguson, 2012). The *personal support* category comprises the 2Cs *care* and *confer*. *Care* concerns teacher behavior that contributes to students feeling safe and that the teacher signals genuine engagement in the student's success and wellbeing. *Confer* concerns the teacher asking questions and seeking the student's point of view and inviting the students to express themselves (see also Brevik et al., 2023b).

Academic press concerns the teacher's ability to provide classroom conditions that require the student's attention and focus to learn and develop. The 2Cs *challenge* and *control* is found in the academic press category. *Control* pertains to classroom management. The teacher needs the ability to manage the student's attention to help maintain conditions that allow students to focus and keep the classroom a safe space for them. *Challenge* concerns the teacher's strictness and expectations of student effort. Examples are, to challenge students to develop, the teacher can push the students to do more or ask challenging questions.

The final category, *curricular support*, which is the most important one for the present MA thesis, concerns 3Cs that measure the way of teaching and whether the teacher succeeds in making the curriculum "engaging, accessible, and coherent" (TriPod Education Partners, n.d.). *Clarify* concerns interactions that aid understanding. Teacher behavior that unravels confusion and helps students persevere is essential. *Captivate* involves teacher behaviors that makes the teaching interesting for the students. Making the instruction stimulating can often be achieved by demonstrating the relevance of the material to something the students care about. *Consolidate* concerns how the teacher maps the students' level of knowledge and aids students to understand new material by talking about the relationships between material and help students see patterns (Ferguson, 2012).

The 7Cs can also be distinguished as five support Cs (*care, clarify, captivate, confer, and consolidate*), and two Cs with a higher degree of press (*control* and *challenge*). *Control* and *challenge* are categories that are related to teacher demands (Ferguson, 2012). For this MA study, the 3Cs *captivate*, *consolidate*, and *clarify* will be examined. These 3Cs are included in the conceptual category of *curricular support*. Curricular support can be linked to the concept of exploration and to the students' in-depth learning, which is especially focused on in the LK20.

3.4 Data analysis

I used a statistical software called SPSS (IBM SPSS Statistics). This is a statistical program that is widely used for statistical analysis in social sciences. To master the SPSS software well enough to carry out the necessary analyzes for this MA project, I attended two courses during the fall semester in 2022. Both courses were run by the University Center for IT at the University of Oslo.

3.4.1 T-test

For tests that only involve the mean score of two samples, I have used t-tests (Triola, 2015). The independent t-test is a statistical test that compares and determines whether there is a statistically significant difference between the means of two unrelated samples. In this study, t-tests have been conducted to examine the difference between the survey results from the ETOS project (LK06) and the EDUCATE project (LK20). Ary et al. (2018) emphasize that the size of the sample is not the only factor that decides the accuracy of the research (p. 179). To conduct an independent t-tests, the data need to consist of a sample of independent, or unrelated groups. This means when comparing the two groups, an individual in one group, cannot be a member of the comparing group as well. In the samples used for this MA study, the groups are independent since the students are from different classes, different schools, and different school years, although all are collected from grade 8 students. The randomness of the sample was accounted for in part 3.2 of this chapter.

The sample size for the t-test depends on the distribution. If the population appears to have a distribution where there are no outliers and the distribution is not far from being normal, a sample size between 15 and 30 can be adequate (Triola, 2015, p. 367). If the distribution is very far from normal, the size of the sample needs to be larger than 30 (Triola, 2015, p. 367).

In the data sets used for this MA study, there are no disruptive outliers, as the only possible answers are between 1 and 5. This is due to the small interval the respondents can choose within. To get results that are representative of reality, the preferred sample is large, and composed of randomly selected recipients. The data sets for this study are representative as it has more than 30 recipients, although ideally it would consist of a larger sample to conduct the tests and provide more reliable analysis. For the t-tests in this study the sample sizes are n=44 and n=153.

The independent t-test requires that the dependent variable is approximately normally distributed. To make sure that the dependent variable is approximately normally distributed, there are several tests that can be carried out in SPSS. A Quantile-Quantile plot (Q-Q plot) is a graphical method to check for normality. This test is presented in section 4.2.1 Assumptions for the t-test. For the t-test, it is assumed that there is a normal distribution. The Q-Q plot allows a visual confirmation of whether the assumption is plausible or not (Ford, 2015). By plotting two sets of quantiles against one another, a scatterplot (Q-Q plot) is created. If both sets of quantiles have the same distribution, the points form a straight line (Ford, 2015).

The t-test is used in testing hypotheses. A t-test is always built upon two different hypotheses. The null hypothesis of the t-test assumes that the means of the two tested groups is not significantly different (Triola, 2015, p. 396). Which means that the difference in group means is zero (=0), and that there is no significant difference between the mean score survey answers collected in ETOS and EDUCATE. The alternative hypothesis assumes that the means of the two groups are significantly different. This means that the difference in the groups is not zero, and that there is a significant difference between the mean survey score in ETOS and EDUCATE.

To measure uncertainty in a sample variable, confidence intervals are used (Triola, 2015). In statistics, a confidence interval refers to the probability that a population parameter would fall between a set of values for a given percentage of times. According to Triola (2015), the most commonly used confidence interval is 95%, because it strikes a reasonable compromise between perceptibility (as shown by the width of the confidence interval) and reliability (as shown by the confidence level). The confidence level is utilized to comprehend the examination's statistical significance. When a random sample has been taken numerous times, it refers to the percentage of certainty that the confidence interval contains the actual

population parameter (Triola, 2015). The confidence interval used in the t-test in this MA research is 95% (0.05).

The t-tests conducted for this MA study have been two-sided. The term "two-sided" refers to the fact that the data have been tested for a difference in both directions. In other words, the development between LK06 and LK20 can be significantly different due to student perception having changed either to be significantly more positive or to be significantly more negative. In summary, the two-sided t-test is used to determine if there is a significant difference between two groups, regardless of the direction of the difference. T-tests have been conducted to compare the mean scores in *captivate*, *consolidate*, and *clarify* between girls and boys. The category of "others" was too small to enable me to find patterns (see also Brevik et al., 2023b).

3.4.2 ANOVA

Analysis of variance, or ANOVA, is a statistical method that tests for difference by examining the variation within samples, with more than one independent variable. The ANOVA test for differences between two or more groups. In this thesis research, I have used the one-way ANOVA. The one-way ANOVA was given its name as there is one independent variable and one dependent variable (Ary et al., 2018). The one-way ANOVA is used to test for significant differences between groups, when there is one independent variable with three or more groups.

The null hypothesis of the ANOVA is that there is no difference in the mean of the tested groups. The null hypothesis is rejected if the p-value is low (lower than 0.05). The alternative hypothesis is that at least one group means is different from the others. The null hypothesis fails to be rejected if the P-value is large (greater than 0.05) (Triola, 2015, p. 579). The P-value is the probability that a test statistic is greater than, or equal to, the one already obtained (Triola, 2015, p. 401).

For the research in this thesis, ANOVA has been conducted within the survey data collected during LK06 (ETOS) and within the survey data collected during LK20 (EDUCATE) to observe variance in the data within each data set. I have used ANOVA to compare the distribution of student answers within the 3C-categories, by comparing the individual survey items in *clarify*, as well as in *captivate* and *consolidate*. I have also used ANOVA to compare

the distribution of student responses between the 3C-categories in ETOS (LK06) and EDUCATE (LK20). This means that I have used ANOVA to compare the student responses to *clarify*, *consolidate*, and *captivate* items in the LK06 data (ETOS), and I have done the same with the LK20 data (EDUCATE). ANOVA has also been conducted to examine variance between the answers of girls and boys in ETOS and in EDUCATE, in line with Brevik et al. (2023b). I have used ANOVA to look for significant differences between the survey answers of girls and boys in each 3C-category within the LK06 data and within the LK20 data. I have used the results from the gender ANOVA to make graphical box plots that display and compare the distribution of student answers. The box plots are displayed in section 4.3.1 Comparison based on gender LK06.

3.5 Research credibility

In this section, I will discuss the validity and reliability of my MA study, as well as ethical considerations. All research projects need to develop a plan that can ensure that the collected data leads to a valid conclusion (Christensen et al., 2015). According to Christensen et al. (2015) research reliability is achieved "when the same results would be obtained if the study were conducted again present (i.e., replicated)" (p. 179). Further, validity refers to "the correctness or truthfulness of an inference that is made from the results of the study" (Christensen et al, 2015, p. 179). Brevik (2015) argues that the difference between reliability and validity can be described as "the accuracy and transparency needed to enable replication of the research (reliability)" and "the trustworthiness of the inference drawn from the data (validity)" (p. 46). A study must have reliability to have validity, however, a study can have reliability without having validity.

3.5.1 Reliability

Reliability refers to the quality of the research process, and whether or not the research is credible or reliable (Gleiss & Sæther, 2021; Frønes & Pettersen, 2021). Another way to describe reliability is to ask whether the research results would be the same if the study had been replicated by another researcher (Bryman, 2008). As this research is based on survey data, this is what will be accounted for in this section.

About the reliability of a survey, Mellinger and Hanson (2020) states that "the reliability of a survey instrument refers to its ability to produce consistent and reproducible results"

(Mellinger & Hanson, 2020, p. 178). When conducting quantitative research there are two different types of errors. Ary et al. (2018) define these errors as either "random error of measurement" or "systematic error of measurement" (p. 102). Random error is simply arbitrary and can influence the participants score in an "unpredictable manner", while systematic error influences the participants score in a "predictable manner" (Ary et al., 2018, p.102). This MA study avoids these types or reliability errors by being based on data collected in larger studies that have conducted pilot studies and have a great number of participants. By having many participants, the potential threat of errors occurring due to the participant is lowered, as the data pool is still large even if a few participants have not answered all the survey items, their computer malfunctioned etc. The conditions surrounding the participants may vary as well and can also be a source of error. An example is if the participants are asked to answer the survey after the last class on a Friday afternoon and would prefer to finish the survey rapidly in order to start the weekend. Ary et al. (2018) also introduce the random source of error brought by the instrument itself. This would for example be the length of the test or the items of the survey. However, this is an issue that is dealt with through using the TriPod survey that is developed through validated research and has been piloted in the Norwegian context previous to the ETOS and EDUCATE projects (Brevik et al., 2023a; Brevik & Doetjes, 2020; Klette et al., 2017).

3.5.2 Validity

When reviewing survey data, the validity is not regarded as the survey itself but rather related to the interpretation of the results (Ary et al., 2018). This means that the validity of research conducted based on survey data, should review the validity of the interpretation rather than the validity of the actual survey (Frønes & Pettersen, 2021). In this study, I am using student surveys to examine the students' experience of their teaching.

When interpreting results of statistical tests, Ary et al. (2018) suggest precautions to ensure that the interpretation of the results is sound. If the result of a hypothesis test reveals the expected results, it is important that the interpretations do not go beyond the information (Ary et al., 2018). In this MA thesis, I explain the results I have obtained in the findings chapter, before I discuss the findings in the discussion chapter. In the discussion, I debate what the findings may indicate, but I do not equate my findings with the theory or pose claims about possible relations. Ary et al. (2018) further explain the importance of being mindful of the limitations of the study. Limitations for this MA study are accounted for in section 3.5.5 of

this chapter. Next, Ary et al. (2018) expound that it is important to "report internal validity problems that could account for the results" (p. 359). The examples provided are related to issues considering the sampled student groups. There are no known issues with the sample groups used in this study. The samples are accounted for in section 3.2 of this chapter. Lastly, Ary et al. (2018) elucidate the crucial of remembering that a statistically significant result is different from what is referred to as significant in the generally accepted understanding of the word.

3.5.3 Correlation and causation

Correlation and causation are concepts related to the relationship between two variables. Correlation is a statistical relationship between two variables where a change in one variable is associated with a change in the other. However, correlation does not mean that the one is caused by the other (Gleiss & Sæther, 2021, p. 166). Causation refers to a relationship where one variable is directly influenced by the other, meaning that causation implies a direct relationship between variables, while correlation suggests an association (Gleiss & Sæther, 2021, p. 166). This MA study seeks to research development over time. In this thesis, I relate the development in the reported student perceptions to LK20. However, it is important to have correlation and causation in mind, as there may be several different factors that influence the reported development.

3.5.4 Ethical considerations

When conducting research, especially research on vulnerable groups, the researchers need to be acutely aware of the privacy and well-being of the participants. For this MA study the participants' privacy had already been ensured. The survey data I had access to was already coded and anonymized with codes for both the individual participant and for the different classes and schools, in line with the procedures in the ETOS and EDUCATE projects (Brevik & Doetjes, 2020; Brevik et al., 2023a). The data are securely stored in an encrypted server that can only be accessed through personal usernames and passwords. The survey does not ask for personal information. Participants under the age of 15 cannot be expected to be able to consent to participate in research on an equal basis with adults (NESH, 2021). In the Norwegian constitution, there is a law enshrined that ensures children a separate protection to prevent them being exploited in, for example, research (NESH, 2021). If children are to participate in research, the general rule is that the child's guardian must consent until the child

is 15 years old (Datatilsynet, 2022). In both ETOS and EDUCATE this consent has been gathered as the participants are younger than 16 years old. ETOS and EDUCATE such consent has already received approval from the Norwegian Centre for Research Data (NSD/Sikt) (Brevik & Doetjes, 2020; Brevik et al., 2023a).

3.5.5 Limitations

I will also address possible limitations of the chosen methods for this MA study. Although there are some limitations to studies that measure student perceptions through surveys, these types of data can be reliable if the survey is developed through research-based knowledge about effective instruction (Ferguson, 2012). Because students experience their teachers teaching on a daily basis, they have experience in observing the teachers' practices in different situations (Worrell & Kuterbach, 2001). However, in the TriPod survey data, I do not gain insight into anything other than the student's perception through the survey. Since I am dealing with a small sample, I must state that the findings are indicative, and that the analyses are tendential. With a larger number of respondents, the results would have been more reliable. Preferably, there would also be a greater number of schools and classes included in the sample. Although a larger sample from LK06 would be preferred, the following analysis are indicative of students' general perception of the teaching and do provide information about patterns of perception in a comparison between LK06 and LK20. If my research project was larger, with more available time and opportunity to conduct a more complex research project, I could conduct a more thorough examination. By for example using mixed methods, the research could include another data set that was of qualitative character (Brevik & Mathé, 2021). Through mixed methods, the research could also have included for example, classroom observations. Due to time limitations, mixed methods have not been possible for this MA study. However, bringing video observations into the analysis that is done for this study, would introduce another perspective to take into consideration, and might facilitate other implications for further research. By only examining one type of data, I have limited opportunity to gain a complete image of the classrooms the data were collected in. I can only examine and report on what is found in the survey data.

4.0 Findings

In this chapter, I will present the main findings based on the data material from ETOS and EDUCATE. In the text, the data collected through ETOS will be referred to as data from LK06, as they represent the data collected while LK06 was valid. The same applies to data sampled in EDUCATE, which will be referred to as LK20. My first main finding concerns descriptive statistics, which is presented in section 4.1. In that section, I present the results of the t-tests I have conducted. In section 4.2, my second main finding is presented, as it was found through the t-tests within each C-category. My third, and final, main finding is presented in section 4.3, where I present the tests conducted to find information about gender, in terms of patterns between student groups who identify as girls or boys.

4.1 Descriptive statistics

The dataset from LK06 consists of 44 respondents from two different schools. Of the 44 respondents there are 30 girls and 14 boys. The dataset from LK20 consists of 153 respondents, where 76 are girls and 72 are boys. Five of the respondents from the LK20 survey reported gender as "other" or checked multiple boxes, or no box. These students are represented in all the analyses that are not regarding gender. They are removed from the tests regarding gender, as there were only five respondents in this category, which are too few to get valid results.
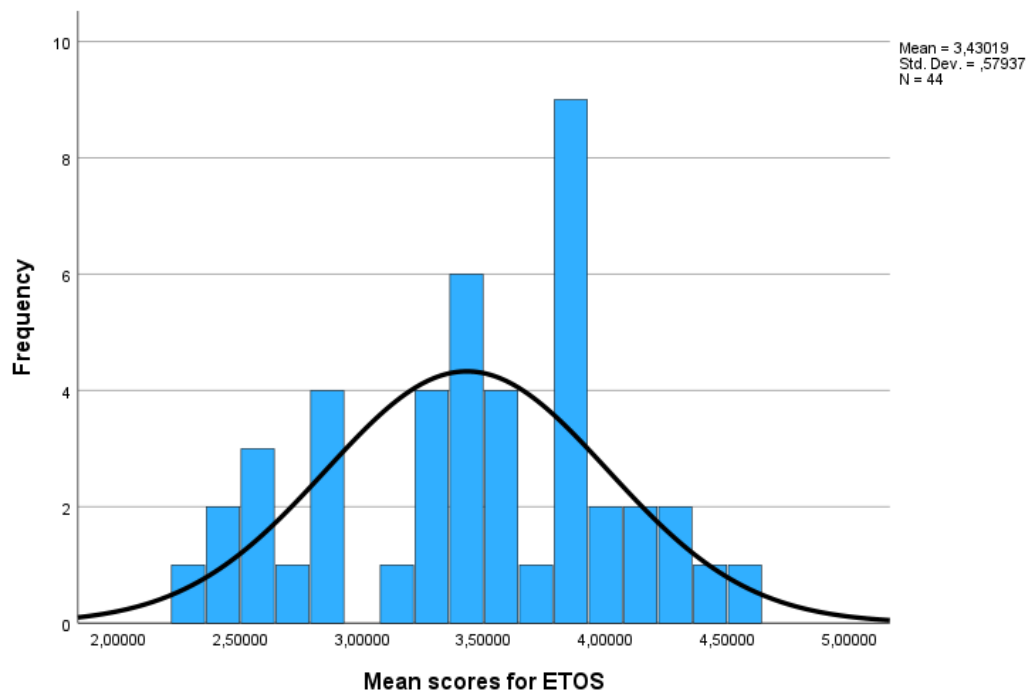
Plot 4. 1. Distribution of the curricular support mean scores collected during LK06 (ETOS)

The plot above shows the distribution of mean scores for curricular support in LK06, where each column represents the frequency of mean scores. In addition to providing a visual representation of the mean scores, the plot above also provides insight into the variety of the mean scores. I provide plots showing the distribution of mean scores because it promotes transparency, enables data quality assessment, and facilitates accurate interpretation. The tallest column shows that nine students reported a mean score of slightly below 4.00. As the plot shows, the most frequent mean scores for students are just below 4.00, but since the majority of students have lower mean scores, the general mean for LK06 students ends up at 3.43. The gap in the data set, after the 3.00 point, is due to no student having a mean score of exactly or close to 3.00. Nevertheless, the data distribution and the bell curve show that the mean of students in LK06 is 3.43. This mean score suggests that on average, students report experiencing curricular support with a frequency between "sometimes" and "often". The reported frequency indicates that students experience curricular support quite frequently, but not all the time.
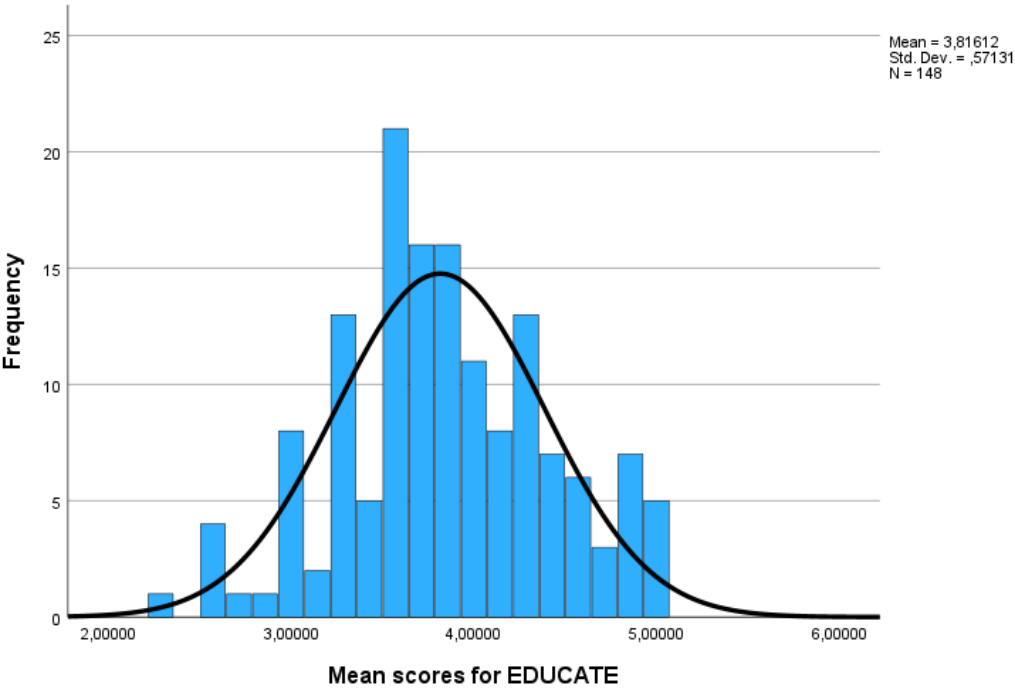
Plot 4. 2. Distribution of the curricular support mean scores collected during LK20 (EDUCATE)

The plot above shows the distribution of mean scores for curricular support in LK20. The bell curve is a bit steeper than the one for LK06, this means that the mean scores are more centered than LK06. The steeper the slope of a bell curve, the more centered are the responses around the mean. The most frequent score is still slightly under 4.00, but most students have mean scores closer to and around 4.00. The mean score for the whole dataset is 3.82. In similarity to the LK06 data, this mean score suggests that on average the students experience curricular support with a frequency between "sometimes" and "often". In the data from LK20, the average mean scores are closer to "often" than in LK06. The reported frequency indicates that students experience curricular support quite frequently, but not all the time. However, the students report more frequent curricular support in LK20 than they did in LK06. One reason why the bell curve is steeper here than for LK06 could be that there are more data from LK20, and therefore a more representative sample.

The curricular support survey items used during both LK06 and LK20 are formulated as follows (see Table 4.1):

Table 4. 1. Mean score development of curricular support between LK06 and LK20

Survey item:		LK06:	LK20:	Development:	Percentage:
Clarify:					
I:11	If you don't understand something, my teacher explains it another way.	3.864	4.137	0.273	7.1%
I:12	My teacher knows when the class understands, and when we do not.	3.614	3.961	0.347	9.6%
I:13	When s/he is teaching us, my teacher thinks we understand when we don't.	2.932	3.431	0.499	17.0%
I:14	My teacher has several good ways to explain each topic that we cover in class.	3.864	3.791	-0.073	-1.9%
I:15	My teacher explains difficult things clearly.	3.727	4.045	0.318	8.5%
I:36	My teacher moves too fast through the material.	2.909	3.477	0.568	19.5%
Captivate:					
I:23	This class does not keep my attention – I get bored.	2.795	3.608	0.813	29.1%
I:24	My teacher makes learning enjoyable.	3.205	3.804	0.599	18.7%
I:25	My teacher makes lessons interesting.	3.295	3.824	0.529	16.1%
I:26	I like the way we learn in this class.	3.568	3.908	0.34	9.5%
Consolidate:					
I:32	My teacher takes the time to summarize what we learn each day.	3.205	3.425	0.22	6.9%
I:33	My teacher checks to make sure we understand what s/he is teaching us.	3.364	3.922	0.558	16.6%
I:34	We get helpful comments to let us know what we did wrong on assignments.	3.977	4.072	0.095	2.4%
I:35	The comments that I get on my work in this class help me understand how to improve.	3.705	4.007	0.302	8.2%

As seen in Table 4.1, there has been an increase in mean scores for almost all items in the survey from LK06 to LK20. The only item where there has been a decrease is item 14, but the change is not statistically significant, and could be random. The item with the largest increase in mean score from LK06 to LK20 is item 23, which increased from 2.795 to 3.608. This is

equal to a 29.1 percent increase. Overall, these results indicate that students in Norway experience curricular support in their English teaching quite frequently. There is also a large increase for all items in the *captivate* category. There is only one item in the survey where there has been a decrease, namely item 14, in the *clarify* category. The decrease is only 1.9 percent, which is not statistically significant. These changes over time are illustrated in Plot 4.3:
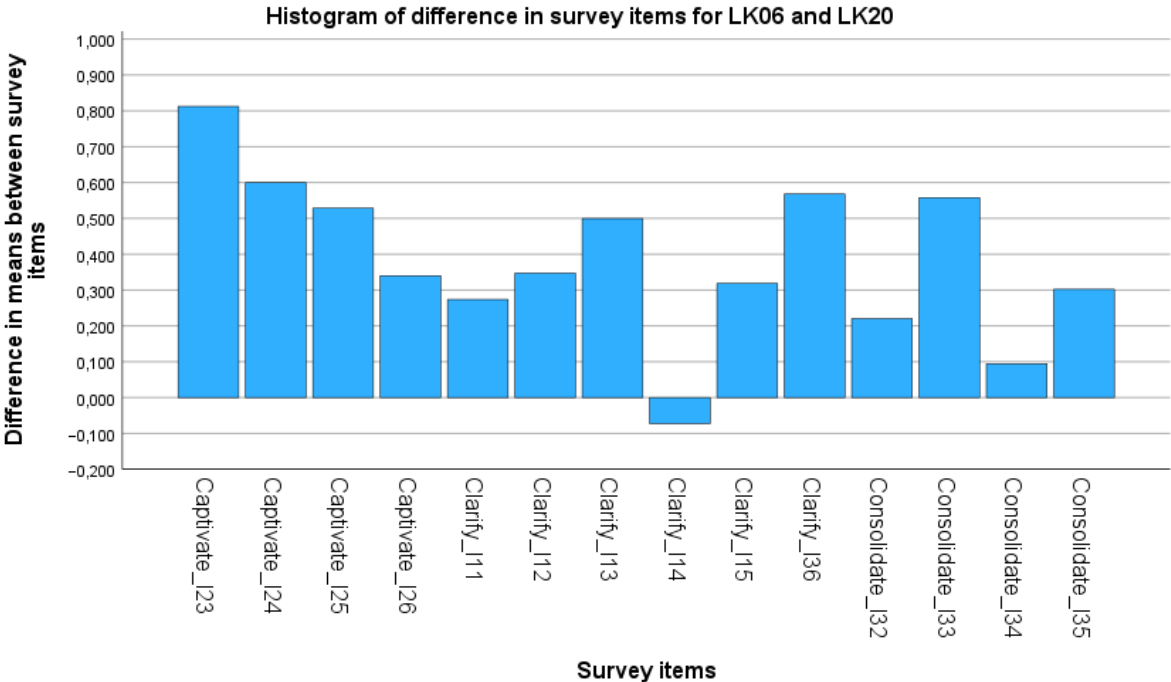
Plot 4. 3. Development in student perception of curricular support from LK06 to LK20

The illustration in plot 3 shows the development in reported student perception of curricular support over time. The plot provides a clear visual representation of the students' reported perception. Item number 14 is the only survey item with a decrease and is therefore below the point of 0 in the plot.

4.2 The results of the t-tests for the 3C-categories

I conducted independent t-tests to look for statistically significant development between survey answers collected during LK06 and LK20. The analyses that were used have a two-sided hypothesis, which enables me to look for development in any direction. These hypothesis tests will be accounted for in the following sections.

4.2.1 Assumptions for the t-tests

As mentioned in the methodology chapter, there are several assumptions about the dataset that need to be met to perform hypothesis tests; specifically, normality, homogeneity of variance and independence. In this part, I will examine our data to make sure those assumptions are met.

Normality: For normality the quantile-quantile plot, Q-Q plot for short, is used to determine if the data follow a normal distribution. If the data follow a normal distribution, most of the data will be visible in clusters towards the middle of the range, i.e. the mean of the distribution, while the rest of the data points spread evenly towards the edges of the range. If the data follow the normal distribution, there will be a bell curve as shown in plot 3. The Q-Q plot is only a visual check of the data distribution, but it enables one to see if the data follows a pattern, and if there are any data points that may cause the normality assumption to be violated. If the data follow the normal distribution, it will form a line that is close to the diagonal line that is representing normality.
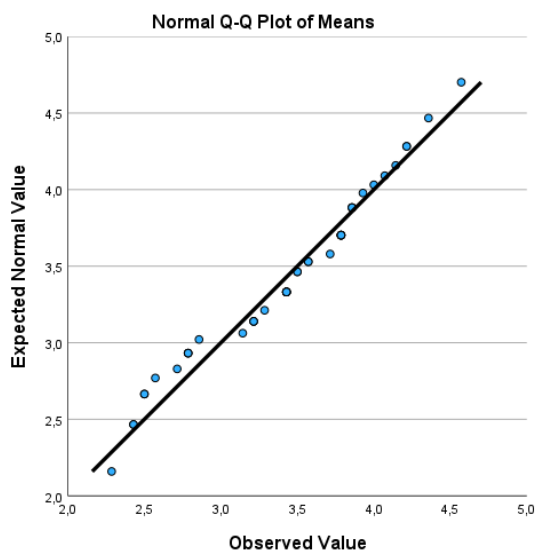
Plot 4. 4. Q-Q plot for normal distribution for curricular support in the LK06 data
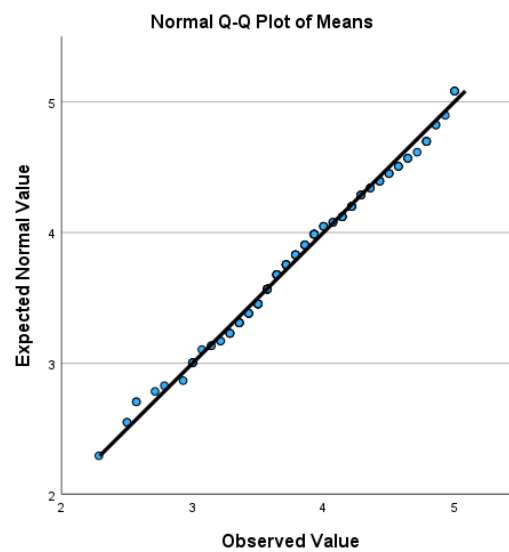
Plot 4. 5. Q-Q plot for normal distribution for curricular support in the LK20 data

From the two plots above (LK06 to the left, LK20 to the right), both datasets concerning curricular support follow a straight line, and the normality assumption is therefore met. Although there is a difference in the plots above, where the LK20 data are located closer to

the straight line than the LK06 data, both datasets are close enough to say that the normality assumption is met.

Homogeneity of variance: As shown later in the chapter, in the t-test and ANOVA outputs, the standard deviation and variance in the different groups are similar, so the assumption of homoscedasticity is met.

Independence: The students in each of the samples are independently selected, with data from LK06 gathered in 2019 and the LK20 gathered in 2021. The two samples remain independent, as no students belong to both groups.

Since all assumptions are met, the following hypothesis tests are valid and reliable.

4.2.2 Comparison of curricular support in LK06 and LK20

The first t-test I performed compared the mean scores for the entire curricular support category, using data from both LK06 and LK20, to look for significant differences between the groups (LK06 and LK20). The statistical tests have been conducted with 44 respondents representing LK06 and 153 respondents representing LK20. As displayed in the group statistics table below, the survey answers from LK06 have a mean score of 3.34 (out of 5), while the mean score of answers from LK20 has a mean score of 3.82.

Table 4. 2. Group statistics for the overall curricular support category from LK06 and LK20

Group Statistics (All groups)					
	Project	N	Mean	Standard deviation	Standard Error Mean
Means	ETOS (LK06)	44	3,43019	0,57936	0,08734
	EDUCATE (LK20)	153	3,81513	0,57538	0,04652

By conducting t-tests, I am able to test if the development in students' answers is significant, and whether there has been a significant increase in students' perception of the English teaching. The hypothesis for the t-test is the following:

0. The null hypothesis is that there is *no difference* in the mean scores between LK06 and LK20 (i.e. $\mu_{LK06} = \mu_{LK20}$).

1. The alternative hypothesis is that there is a difference in mean scores between LK06 and LK20 (i.e. $\mu_{LK06} \neq \mu_{LK20}$).

Table 4.3 shows the results of this t-test:

Table 4. 3. T-test comparing the mean scores of curricular support between LK06 and LK20

Independent Samples Test			
		Means	
		Equal variances assumed	Equal variances not assumed
Levene's Test for Equality of Variances	F	0,015	
	Sig.	0,903	
t-test for Equality of Means	t	-3,905	-3,890
	df	195	62,276
	Significance One-Sided p	<0,001	<0,001
	Significance Two-Sided p	<0,001	<0,001
	Mean difference	-0,38493	-0,38493
	Standard Error Difference	0,09858	0,09898
	95% Confidence Interval Lower	-0,57935	-0,19051
	95% Confidence Interval Upper	-0,58233	-0,18753

This t-test found that the students reported perception measured during LK20, was statistically higher (3.82 ± 0.58 in mean scores), compared to the reported student perception during LK06 (3.43 ± 0.58 in mean scores). The independent samples test show that there is a p-value of <0.001. Due to this p-value, there is statistical evidence that there is a difference between the reported student perception during LK06 and LK20. The survey results show that student's perception of the teaching is more positive during LK20, compared to what the reported perception measured during LK06.

Due to this finding, the null hypothesis must be rejected, and be replaced with the alternative hypothesis which states that there is a difference between the mean scores found in LK06 and LK2, meaning that the reported perception measured during LK20 is significantly higher than the comparable results from LK06.

This is the first main finding of this study. This finding pertains to RQ1: *How has students' reported experience of curricular support in English teaching in lower secondary school developed across two school reforms?* Since the t-test found a significant difference between the reported student perception measured during LK06 and LK20, this finding gives a clear indication that there has been development and it gives a clear indication of positive development, as the reported perception of the teaching is statistically significantly increased.

4.2.3 Comparison of captivate between LK06 and LK20

To gain a clearer picture of the development, tests were run in each subcategory for curricular support; *captivate*, *consolidate*, and *clarify*. The *captivate* survey items address the frequency of students finding that the teacher makes learning interesting and enjoyable, whether the class keeps the student's attention and how often they like the way they learn in class.

In this section, I will show the findings of tests performed solely on the survey items that concern the C-category captivation. As shown in the group statistics in Table 4.4, the survey data collected during LK06 have a mean score of 3.22. The data collected during LK20 has a mean score of 3.79. The mean scores of the *captivate*-category are lower than the mean scores in *clarify* (see Table 4.6) and *consolidate* (see table 4.8). However, the increase from LK06 to LK20 is much larger than in the other categories. The Norwegian students in this study experience captivation less often than they experience clarification and consolidation. But it is important to note that the LK20 mean score of 3.79 indicates that they experience captivation quite often.

Table 4. 4. Group statistics for captivate from LK06 and LK20

Group Statistics (Captivate)					
	Project	N	Mean	Standard deviation	Standard Error Mean

| Means | ETOS (LK06) | 44 | 3,2159 | 0,64832 | 0,09774 |
| | EDUCATE (LK20) | 153 | 3,7859 | 0,71716 | 0,05798 |

The following t-test has a null hypothesis that the mean scores for LK06 and LK20 are the same (i.e. $\mu_{LK06} = \mu_{LK20}$). The alternative hypothesis is that LK06 and LK20 have different mean scores from each other (i.e. $\mu_{LK06} \neq \mu_{LK20}$). The outcome of this t-test is displayed in Table 4.5:

Table 4. 5. T-test comparing the mean scores of captivate between LK06 and LK20

Independent Samples Test				
			Means	
			Equal variances assumed	Equal variances not assumed
Levene's Test for Equality of Variances	F		0,272	
	Sig.		0,603	
t-test for Equality of Means	t		-4,743	-5,016
	df		195	75,928
	Significance One-Sided p		<0,001	<0,001
	Significance Two-Sided p		<0,001	<0,001
	Mean difference		-0,57004	-0,57004
	Standard Error Difference		0,12018	0,11364
	95% Confidence Interval Lower		-0,80707	-0,79638
	95% Confidence Interval Upper		-0,33301	-0,34370

Similarly to the t-test for the overall category of curricular support, there is significant increase in student perception for the *captivate* variable. There is a strong statistically significant increase in perception for the *captivate* variable when comparing student responses collected during LK20, to the survey answers collected during LK06. Student answers during LK20 reported a statistically higher perception of teaching (3.79 ± 0.72 in mean scores) for the *captivate* variable, compared to students' answers collected during LK06 (3.22 ± 0.65 in mean scores). This conclusion necessitates the rejection of the null hypothesis. The null hypothesis is replaced with the alternative hypothesis. This means that the reported student

perception measured during LK20 is significantly higher than the students' answers collected during LK06.

4.2.4 Comparison of consolidate between LK06 and LK20

In this section I will, similarly to the two previous sections, present the findings of tests performed solely on the survey items that concern the C-category *consolidate*. The survey items concerning the *consolidate* category, ask the students to report on the frequency of their teacher summarizing, making sure the students understand and are providing helpful feedback that aids the students in their development and understanding. As shown in the group statistics table below, the survey data collected during LK06 have a mean score of 3.56. The data collected during LK20 has a mean score of 3.86. This means that Norwegian students perceive consolidation on the part of the teachers with a mean score that is very close to "often". Consolidation is the type of curricular support the students report experiencing most frequently.

Table 4. 6. Group statistics for consolidate from LK06 and LK20

Group Statistics (Consolidate)					
	Project	N	Mean	Standard deviation	Standard Error Mean
Means	ETOS (LK06)	44	3,5625	0,95254	0,14360
	EDUCATE (LK20)	153	3,8562	0,66125	0,05346

I will use the t-test to investigate whether the difference between LK06 and LK20 is significant or not, and if there has been a significant increase in student perception in the *consolidate* variable. The null hypothesis for the t-test is that the mean score for LK06 and LK20 has not developed (i.e. $\mu_{LK06} = \mu_{LK20}$). The alternative hypothesis is that there has been development between LK06 and LK20, and that the mean scores are different from each other (i.e. $\mu_{LK06} \neq \mu_{LK20}$). The outcome of this t-test is displayed in Table 4.7:

Table 4. 7. T-test comparing the mean scores of consolidate between LK06 and LK20

Independent Samples Test			
		Means	
		Equal variances assumed	Equal variances not assumed

Levene's Test for Equality of Variances	F	9,104	
	Sig.	0,003	
t-test for Equality of Means	t	-2,335	-1,917
	df	195	55,443
	Significance One-Sided p	0,01	0,03
	Significance Two-Sided p	0,021	0,06
	Mean difference	-0,29371	-0,29371
	Standard Error Difference	0,12581	0,15323
	95% Confidence Interval Lower	-0,54184	-0,60073
	95% Confidence Interval Upper	-0,04558	-0,01331

The hypothesis test shows that there is a strong statistically significant increase for the *consolidate* variable. During LK20 the students' reported perception is statistically higher (3.86 ± 0.66 in mean scores) for the *consolidate* variable, compared to students from the students' reported perception measured during LK06 (3.56 ± 0.95 in mean scores). This means that the null hypothesis is rejected and replaced with the alternative hypothesis, stating that the students' reported perception is higher in LK20 than LK06. in the survey answers collected during LK20 compared to the survey answers collected during LK06.

4.2.5 Comparison of clarify between LK06 and LK20

In this section I will show the findings of tests performed solely on the survey items that concern the C-category *clarify*. The survey items in the *clarify* category ask the students about the frequency with which they find that the teacher explains subject matter in clear and varied ways, and how frequently the students find that the teacher understands when the students understand and when they do not. As shown in the group statistics in Table 4.8, the survey data collected during LK06 have a mean score of 3.48. The data collected during LK20 has a mean score of 3.81. In similarity to *captivate* and *consolidate*, students report that they perceive the instruction as clear, close to "often".

Table 4. 8. Group statistics for clarify from LK06 and LK20

Group Statistics (Clarify)

	Project	N	Mean	Standard deviation	Standard Error Mean
Means	ETOS (LK06)	44	3,48485	0,49522	0,07466
	EDUCATE (LK20)	153	3,80719	0,62306	0,05037

Using the t-test, I will test to find if the difference between the mean scores of LK06 and LK20 is significant, and if there is a significant increase in student perceptions of the *clarify* variable. The null hypothesis for the t-test is that there is no difference between the mean score of the *clarify* category between the survey answers collected during LK06 and LK20 (i.e. $\mu_{LK06} = \mu_{LK20}$). The alternative hypothesis is that there is a difference in the mean scores between LK06 and LK20 (i.e. $\mu_{LK06} \neq \mu_{LK20}$). The outcome of this t-test is displayed in Table 4.9:

Table 4. 9. T-test comparing the mean scores of clarify between LK06 and LK20

Independent Samples Test			
		Means	
		Equal variances assumed	Equal variances not assumed
Levene's Test for Equality of Variances	F	3,111	
	Sig.	0,079	
t-test for Equality of Means	t	-3,155	-3,579
	df	195	86,017
	Significance One-Sided p	<0,001	0,002
	Significance Two-Sided p	<0,001	<0,001
	Mean difference	-0,32234	-0,32234
	Standard Error Difference	0,10216	0,09006
	95% Confidence Interval Lower	-0,52382	-0,50138
	95% Confidence Interval Upper	-0,12085	-0,14331

Similarly to the previous t-test results for the other Cs in the curricular support category, there is a strong statistically significant increase in student perception of the *clarify* variable. The reported perception of the teaching during LK20 is statistically higher (3.81 ± 0.62 in mean scores), compared to the reported perception measured during LK06 (3.48 ± 0.50 in mean

scores). This means that the null hypothesis is rejected and replaced by the alternative hypothesis. That is to say the students' reported perception of clarity in the teaching is significantly higher when measured during LK20, compared to when it is measured during LK06.

4.2.6 Findings from the comparison of captivate, consolidate, and clarify

The findings presented about the 3Cs *captivate* (4.2.3), *consolidate* (4.2.4), and *clarify* (4.2.5), provide the second main finding. The reported increase in the *captivate* category is 17.7%, making captivate the category with the largest increase in reported student perception, when compared to the two other curricular support Cs. As explained in section 4.2.3, the *captivate* survey items address the frequency of captivation in class. Students have reported the frequency of finding the teacher making the class interesting, enjoyable, and attention keeping. The findings indicate that in the data collected during LK20, the students find the teaching to be more captivating.

4.3 Comparison of student perception based on gender (LK06 vs. LK20)

What follows is an account for differences in student perception between girls and boys. There are not enough respondents in the data collected during LK06, to conduct t-tests to check for significant results comparing boys and girls. This means that there are fewer than 30 in each of the gender categories. Therefore, no statistical tests will be performed based on gender for the LK06 data, but I will give an overview of how the data are distributed as is. However, there are enough respondents to test for significant differences in the data collected during LK20. In the LK20 data, there are 76 girls and 72 boys.

4.3.1 Comparison based on gender in LK06

The box plot presented below, provides a visual representation of the mean scores for the LK06 data.

Box plot of means by gender in LK06 for all categories in curricular support
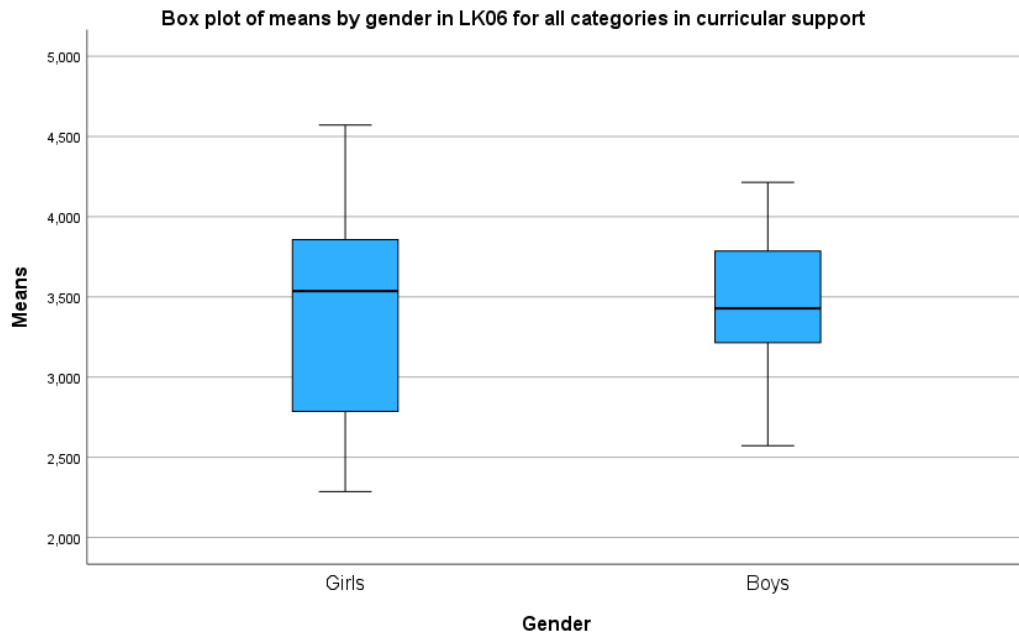
Plot 4. 6. Box plot showing curricular support by gender, from the LK06 dataset

The box plot gives a representative impression of the distribution of the individual Cs, as it represents the entire curricular support category. The box plot presents a visual representation of the distribution of student answers. The horizontal line in each of the box plots represents the middle value of the data set. In other words, half of the data are above, and half are below the horizontal line. The box represents the distribution of answers. The box plot shows that there is greater variety of the girls' answers, while there is less variety in the boys' answers. There is variation in the median for boys and girls, although the variation is not large. Which indicates that the girls and boys have responded similarly, but girls have used more of the scale (1-5) when they have answered.

The sample in LK06 is too small to test and see if there is a significant difference between boys and girls, and how often they experience these aspects of teaching. As mentioned previously, there need to be at least 30 respondents in each group to do a hypothesis test, and there are only 14 boys in the LK06 sample.

4.3.2 Comparison based on gender LK20

To see if there is any difference between boys and girls mean scores in LK20, I conducted a hypothesis test. Again, the null hypothesis is that there is no difference between the two groups.

Table 4. 10. Group statistics for gender from LK20

	Project	N	Mean	Standard deviation	Standard Error Mean
Means	Girls (LK20)	76	3,78289	0,54078	0,06203
	Boys (LK20)	72	3,85119	0,60369	0,07115

The group statistics table shows that boys have a higher mean score of 3.85, while girls have a mean score of 3.78.

Table 4. 11. Gender vise T-test comparing the mean scores of curricular support in LK20

Independent Samples Test				
			Means	
			Equal variances assumed	Equal variances not assumed
Levene's Test for Equality of Variances	F		0,220	
	Sig.		0,640	
t-test for Equality of Means	t		-0,726	-0,724
	df		146	142,190
	Significance One-Sided p		0,235	0,235
	Significance Two-Sided p		0,469	0,471
	Mean difference		-0,06830	-0,06830
	Standard Error Difference		0,09411	0,09439
	95% Confidence Interval Lower		-0,25429	-0,25489
	95% Confidence Interval Upper		0,11770	0,11829

The t-test shows that there is no significant difference between boys and girls in the TriPod results collected during LK20.

4.3.3 Comparison based on gender between LK06 and LK20

There is a tendency for the girls' answers to have a greater variation than the boys' answers, but there is no significant difference between what the girls and the boys answer in any of the

3C-items. In other words, girls and boys are relatively in agreement about how often they experience these aspects of the teaching. This tendency is found in the data from both LK06 and LK20. This means that the student groups are characterized by being in relatively agreement about the teaching, and there is not much variation between genders either before or after the curriculum reform.

This main finding pertains to RQ2: *What characterizes the response of different student groups to questions about curricular support across two school reforms?* The two student groups do not report a statistically significant difference on survey items about student perception in the curricular support category.

4.4 The results of the ANOVA

In the t-tests above (section 4.2.2 to 4.2.6) the difference between data sets from LK06 and LK20 have been compared with each of the 3Cs (*captivate*, *consolidate*, and *clarify*, as well as the three groups combined, which is named *curricular support*). In the following section, Analysis of variance, ANOVA, have been conducted to examine the difference between the 3Cs that make up the curricular support category, which means that one ANOVA has been conducted to investigate differences between *captivate*, *consolidate*, and *clarify* in the LK06 data. A separate ANOVA has been conducted to look for significant differences between *captivate*, *consolidate*, and *clarify* in the LK20 data.

Table 4. 12. One-way ANOVA comparing curricular support Cs in LK0

ANOVA (LK06: ETOS)					
	Sum of Squares	df	Mean Square	F	Sig.
Between C-groups	2,911	2	1,456	2,776	0,066
Within C-groups	67,635	129	0,524		
Total	70,546	131			

Table 4. 13. One-way ANOVA comparing curricular support Cs in LK20

ANOVA (LK20: EDUCATE)					
	Sum of Squares	df	Mean Square	F	Sig.
Between C-groups	0,397	2	0,199	0,445	0,641
Within C-groups	203,645	456	0,447		
Total	204,043	458			

The ANOVA Tables 4.12 and 4.13 show that there is no statistically significant difference between the C-categories in LK06 nor in LK20. The null hypothesis is not rejected, which means that there is no statistically significant difference between the three categories in LK06 or LK20. This means that the students in both LK06 and LK20 report similar means for each of the C-categories.

5.0 Discussion

In this chapter, I will discuss the three main findings from the findings chapter (4.0) in light of the theory that was presented in the theory chapter (2.0). In the previous chapter, I first found that many Norwegian students in lower secondary school report receiving frequent curricular support in English teaching, and that there is an overall positive development of student perceptions over time. Furthermore, I identified that *captivate* is the category with the biggest increase in student perception. Lastly, I found no significance in students' reported perception of the received teaching between genders. In this chapter, I will use sociocultural theory (SCT), and theories related to SCT, as a foundation to discuss theoretical and empirical contributions of my MA study.

The overarching research question of this MA study is: *What characterizes students' reported experience of curricular support in English teaching in lower secondary school across two school reforms?* To answer this question, I have used TriPod student survey data from six schools and 11 different 8th grade classrooms. The survey answers were collected during both the previous subject curriculum (LK06) and the new curriculum (LK20). To find if the development of student perceptions has changed and if the change has been significant, I have used the hypothesis tests t-test and ANOVA.

The two sub-questions were answered through the three main findings. The answers to these sub-questions contributed to answering my main research question:

RQ1: *How has students' reported experience of curricular support in English teaching in lower secondary school developed across two school reforms?*

RQ2: *What characterizes the response of different student groups to questions about curricular support across two school reforms?*

The TriPod 3Cs of *captivate*, *consolidate*, and *clarify* make up the category of curricular support. The survey items in the *captivate* category ask the students about the instruction, the extent to which the teacher makes the subject matter engaging and interesting, and whether they feel that the instruction fosters their curiosity. The survey items in the *consolidate*

category ask the students how much summarization and assistance they experience in their English lessons in understanding connections between individual topics and across lessons. The survey items in the *clarify* category ask students to assess their teacher's ability to explain concepts and clear up confusion (Brevik & Doetjes, 2020; Brevik et al., 2023a). The student replies to the TriPod survey items are the foundation for the findings discussed in this chapter.

In the first section (5.1), I will explore the findings from the entire *curricular support* category. This is also where I discuss my first main finding of this MA study. I use concepts related to SCT as a theoretical foundation as I argue that focus on student-centered learning approaches, such as exploratory instruction, might be an underlying cause of the reported high frequency of curricular support in the English subject classroom. In the following section (5.2), I will examine the second main finding of this MA study. The finding is that there is a statistically significant increase in reported student satisfaction with the C-category *captivate*. In section 5.3, I address the third main finding of this MA study. The different student groups, which were divided into girls and boys, did not report significantly different levels of reported perceptions of the teaching. The reported perceptions were not significantly different in either the survey data from LK06 or LK20. This finding will be discussed in the context of the report from the Stoltenberg committee as well as the theories related to sociocultural theory.

5.1 The curricular support category

In this section, I will discuss the first main finding, which is that many of the Norwegian students in the participating lower secondary English classes report receiving frequent curricular support in English lessons, and that there is an overall positive development of student perceptions over time.

The TriPod survey works to gather, organize, and report on students' perspectives (TriPod Education Partners, n.d.). Ferguson claims that "well-crafted student surveys can play an important role in suggesting direction for professional development and also in evaluating teacher effectiveness" (Ferguson, 2012). The initial goal with the TriPod survey was to focus on raising achievement for all students, as well as reducing ethnicity-based gaps in student achievement (TriPod Education Partners, n.d.). Tripod sets out to gather information on students' perception and experience of the 7Cs (c*are, confer, captivate, clarify, consolidate, challenge* and *classroom management*). The survey asks students about what they experience in the classroom and asks them to select an answer on a scale from always to never, deciding

how often different situations or behavior occur. The survey items are formulated as claims that describe elements that are characteristics of effective teaching (TriPod Education Partners, n.d.). Through comparing test results and student answers to the TriPod 7Cs survey, Ferguson has found that students are able to identify the quality of the instruction (2012). Furthermore, this means that high scores on the TriPod survey, indicates that the English instruction is characterized by features that are defining good, or effective, teaching.

The survey results in the *curricular support* category provides information of the students' overall perception of their teaching. In the findings chapter (4.0), mean scores for the *curricular support* category are presented. The conceptual category *curricular support* encompasses the categories *captivate*, *consolidate*, and *clarify*. The mean score is presented as one gathered score for all three categories that make up *curricular support*. Since the TriPod survey measures factors that characterize effective teaching, the results from TriPod indicate students' experience of receiving good and effective English teaching. In this MA study, I found that the mean score for *curricular support* during LK20 was 3.82. As the students are asked about frequency on a scale from always to never, this mean score suggests that on average, the students' experience teaching situations that coincides with characteristics of effective teaching, with a frequency between "sometimes" and "often". This indicates that the students tend to report experiencing this type of teaching fairly frequently, but not necessarily all the time. This information alone does not provide extensive information, therefore, comparable data from LK06 is used for comparison. During LK06, the mean score for *curricular support* was 3.43. This is an overall increase of 11.4%, which is significant. Based on this comparison it seems like Norwegian students' perception of the English teaching is positive, meaning that high rating on TriPod can be viewed as an indication that the students receive effective teaching.

The overall aim of the curriculum reform, as described in the introduction chapter of this thesis, is to accomplish increased in-depth learning (NDET, 2019). The curriculum reform functions as a framework that describes goals that need to be met, and to meet these goals, exploratory instruction and student activity need to transpire. The term "exploration" is included in four of the 19 aims in the curriculum reform. In addition, LK20 also contains phrasing that indicates that the teacher should facilitate for students to explore content that is related to their own interests.

The characteristics that TriPod and Ferguson associate with effective teaching, such as the *curricular support* Cs, coincides with elements of the curriculum reform (TriPod Education Partners, n.d.; Ferguson, 2012). There is no direct link between TriPod and teaching effectiveness, but the TriPod survey items can offer an indication of teaching aspects that are important for exploratory approaches. The *curricular support* category of TriPod asks about the teachers' ability to make the curriculum "engaging, accessible, and coherent" (TriPod Education Partners, n.d.; Ferguson, 2012). This coincides well with the curriculum reform which states that students need to explore, and that exploration must be included in the teaching. The emphasis on exploration is due to a stated overarching goal of in-depth learning. It is possible that the concept of the Zone of Proximal Development (ZPD) could be relevant to understand the positive student perceptions found in the *curricular support* category. While the ZPD is typically associated with cognitive development and learning outcomes, it is possible that the ZPD can be used to understand students' positive experiences as well.

In the ZPD, Vygotsky (e.g., 1978) argued that development and learning occur outside the learners' current zone of understanding, and that the learner therefore needs to exceed to the next zone, the ZPD, for development and learning to occur. For the ZPD to be within reach for the student, Vygotsky argued that assistance, in the context of learning in school, is either provided by a teacher or facilitated through teaching activities. For a teacher to have the students ZPD within reach, the teacher must be aware of each student's current knowledge and understanding (Hattie, 2012).

In the curriculum reform, formulations such as "The pupils shall be given the opportunity to experience that experimenting on their own and with others is part of learning a new language" (NDET, 2019), indicate that teachers need to facilitate learning through exploration. Self-determination theory (SDT) is a framework that emphasizes students' autonomy and choice in learning. A curriculum that supports student autonomy, competence, and relatedness can help promote self-determination and increase the students' engagement and motivation.

Clear instruction is crucial for meeting the individual students' ZPD in differentiated teaching. While the importance of clarity is not explicitly specified in the curriculum reform (LK20), it is an essential component of effective teaching and differentiation. When teachers provide

clear instruction, they can assist students to identify areas where they need additional support and provide appropriate scaffolding to help students reach their learning objectives. Tomlinson (2014) further elaborates for the importance of clarification to ensure that all students experience that they leave the classroom with a steady grasp on the knowledge and understanding. Without clear instruction, students may become confused or frustrated, leading to disengagement and lack of motivation. In the TriPod survey, students were asked to report the frequency of clarifying activities such as clear explanations, checking for understanding, and providing constructive feedback (TriPod Education Partners, n.d.). In the survey data collected during LK20 the mean score of the *clarify* category was 3.81. The mean score from the data collected during LK06 was 3.48. The increase in reported student perception is 9.5%. The high mean score of the *clarify* category indicates that students experience that the teacher provides clarifying instruction fairly often in the English classroom.

When comparing the mean scores in the *clarify* category from LK06 and LK20, there is a significant increase in the reported student perception. This means that students report that they experience teacher behavior that is described as clarifying significantly more often in the data from LK20. Although the *clarify* category has a significant increase in student perception, there was one item with a slight decrease in reported student perception. The survey item with a decrease in the mean score was item 14: "My teacher has several good ways to explain what we cover in class". This type of clarity is what Tomlinson (2014) describes as essential for all students, perhaps especially for students who struggle with the subject. Tomlinson (2014) describes it as the learners who struggle need clarity so that they do not drown in a pool of information they are unable to sort out. By ensuring clarity, all students are given an opportunity to find the topic meaningful and interesting. Through ensuring clarity, the teacher can promote comprehension, relevance, engagement, and application of the topic. The acquired comprehension can also allow the student to uncover relations between different topics and aid their perception of the topic as engaging and filled with meaning. The decrease is not large, which means that few students have rated it lower than in the data from LK06, however the reason for this is unknown. TriPod item 11 and item 15 ask the students to report the frequency of the teacher explaining difficult topics. Item 11 reads as follows: "If you don't understand something, my teacher explains it another way", and item 15 reads: "My teacher explains difficult things clearly". Both item 11 and item 15 have increased in the survey data (see Plot 3 in the findings chapter 4.1 Descriptive statistics). The wording of items 11, 14, and 15 focus on the teacher's capacity to explain subject matter to

the students. Although it is not accounted for through the survey, the positive responses to items 11 and 15 may indicate that the students experience that the teacher explains difficult concepts in clear ways and that when something is difficult to understand, the teacher explains the subject matter again in a different way. If the teacher is sufficient in mapping the students' needs for clear explanation of difficult subject matter, and when the students need a different explanation, the teacher might also be able to recognize when multiple explanations are needed. Nevertheless, it must be noted that the mean score of item 14 is not low, and the survey results do not indicate why item 14 scored differently from the others. The curriculum reform enables teachers to facilitate learning through inquiry and student participation. Without explicitly stating that SDT must be integrated, LK20 states that the "teacher shall facilitate for pupil participation and stimulate the desire to learn […]" (NDET, 2019). The teacher facilitating for student participation suggests that the students' choices should be present in the design and choice of classroom activities.

The findings show that *consolidate* is the category with the highest mean score in the overall *curricular support* category. The mean score of *consolidate* measured during LK20 was 3.86. If compared to the mean score measured during LK06 there is an increase of 8.4%, as the score during LK06 was 3.56. The *consolidate* category has the highest mean score in the *curricular support* category during both LK20 and LK06. The survey items in the *consolidate* category ask the students about the frequency of summarizing after instruction, the teacher checking to make sure the students understand, and if the feedback the students receive is perceived as helpful. This suggests that students find that the English teachers in the classrooms in this study are particularly good at summarizing after instruction, checking to make sure that students understand and that feedback students receive is perceived as helpful. A mean score of 3.86 indicates that students experience that they find their teacher provides consolidation fairly often in the English classroom. Consolidation is important for students' development, Fergusson (2012) argues that "Teachers who excel at consolidation talk about the relationships between ideas and help students see patterns. There is a large body of evidence supporting the hypothesis that these types of instructional activities enhance retention by building multiple mental pathways for retrieving knowledge and for combining disparate bits of knowledge in effective reasoning" (p. 26). Although there was a significant increase in the students' reported perception in the *consolidate* category, it was the *curricular support* category with the least increase. The less prominent increase might be due to a number of reasons. Firstly, if teachers were already aware of and made sure to take the time to

summarize lessons, check to make sure students understand and implement consolidation activities in every lesson, it might be difficult to improve extensively as it is difficult to summarize more. The *consolidate* survey item with the least development from LK06 to LK20 was an item regarding the teacher providing helpful comments on assignments that help the students understand what they did wrong. Due to the weak development for this survey item, providing helpful feedback might be a suitable point for improvement going forward.

TriPod survey items such as *consolidate* item 33 "My teacher checks to make sure we understand what s/he is teaching us", *clarify* item 11 "My teacher explains difficult things clearly", and *captivate* item 24 "My teacher makes learning enjoyable" can be viewed in relation to the finding of students experience of receiving curricular support quite frequently. These items are examples of students' elements in the teaching that students report experiencing often in the English instruction. This finding will be discussed in relation to inquiry-based instruction (IBI), as IBI is often used synonymously with exploratory instruction. Harland (2003) describes the connection between Vygotsky's ZPD and IBI as the two concepts share a common starting point: the learners' current level of skills and knowledge. Through IBI, the students are believed to be motivated and engaged through active participation, asking questions, exploring ideas, and seeking out new information. This coincides with the focus on in-depth learning through student exploration in LK20. All these examples of active learning activities provide students opportunities to take ownership of the learning, and they can be enabled to have an impact on what they want to further explore and learn more about. For IBI to be successful, the teacher also needs to make sure to meet the individual ZPDs in the classroom. On survey items such as number 15 "My teacher explains difficult things clearly", the mean reported frequency of 4.045 (LK20). This means that the students find that difficult things are often explained clearly. Clear explanations are crucial for students' development and learning. Further, survey items such as number 35 "The comments that I get on my work in this class help me understand how to improve", have a mean score of 4.007 (LK20). This means that the students find that the feedback they receive in English class often helps them understand how to improve. Both understanding how to improve and having thorough explanations of difficult topics help students understand and develop. The theory of IBI provides a framework that facilitates instruction where all these criteria are met, through teaching activities that are based on inquiry. To achieve in-depth learning, students need to be active in the learning process (Sawyer, 2014). Students also need the teacher to facilitate for learners to relate new ideas and knowledge to what they already know (Hattie,

2012). These two criteria for in-depth learning can be met through IBI, as this learning theory builds on the ZPD and students being active learners. One cannot claim that there is causation based on the reported student perception found in this MA study. However, the patterns found in the data suggest that there might be correlation. Through further research this correlation could be confirmed.

5.2 The captivate C-category

The second main finding of this MA study is that *captivate* is the C-category with the highest increase in reported student perception. In the survey data collected during LK20, the *captivate* category had a mean score of 3.79. This is the lowest mean score in the *curricular support* category. In the data collected during LK06 the mean score of *captivate* was 3.22. Which means that *captivate* is the C-category with the lowest mean score over time. However, with a development of 17.7%, there is a significant difference between the data collected during LK06 and LK20. The increase in the *captivate* score shows that the students report that their teacher facilitates learning through activities the students find enjoyable and interesting at a frequency between "sometimes" and "often" in the survey. Because the mean score is 3.79, the students' response indicates that they, close to, "often" find that they like the way they learn in the English subject class and that the class keeps their attention. Students' experience of frequent captivating learning activities can be viewed in light of the curriculum. The curriculum reform functions as a framework that describes goals that need to be met, and to meet these goals, exploration and student activity need to transpire. The term "exploration" is included in four of the 19 aims that is formulated in the curriculum reform, in addition to phrasing that indicates that the teacher should facilitate for students to research content that is related to the students' own interests. The overall curriculum support category can be discussed within the theories of exploration, differentiation, and self-determination. The same is to be said for the *captivate* category.

Brevik (2015) who builds on Vygotsky, explains that students who are actively participating in the learning environment will mediate what they learn and, in that way, achieve deeper learning that they can further benefit from in out-of-school situations. I argue that the students' increased experience of curricular support might be consistent with an increased focus on exploration in the English subject. When explaining the TriPod survey item category of *captivate* Fergusson (2012) explains that "Brain research establishes clearly that stimulating learning experiences and relevant material make lessons easier to remember than

when the lesson is boring and the material seems irrelevant" (p. 26). This explanation coincides with the nineteenth, and final, aim of the curriculum reform, which states that teaching should include both explanation and let the students connect their own interests to cultural media expressions. The vast increase in student satisfaction with the *captivate* category, also coincides with theory on IBI, as IBI seems to engage students as it allows for interaction, exploration and students researching different phenomena (Alfieri et al. (2011). Although the survey does not provide conclusive results, it does provide results that can be indicative of the presence of teaching that facilitate through student-centered approaches, such as IBI. The increase in the reported frequency from LK06 to LK20 might correlate with the wording of the curriculum reform, and the increased focus on exploration.

5.3 The variable of gender

The report from the Stoltenberg committee stated that there is a difference in school performance when comparing boys and girls. Aasen et al. (2015) found that motivation, work effort, and adaptation to the school's norms were most important for the students' achievements. The Stoltenberg committee suggested increased focus on differentiated teaching as a way to even out the differences between the student groups (2019). As mentioned in the section about *captivate* in this chapter, Skaalvik and Skaalvik (2018) argue that differentiation is essential to meet the students in their ZPD. As the instruction is customized to fit each individual student's needs in their ZPD, the teacher actively attends to their differences by varying the teaching and the teaching activities. When considering the finding of Aasen et al. (2015) in relation to the findings of the Stoltenberg committee, one could believe that the RQ2 of this thesis would find that there was a significant difference in the student answers based on gender. However, there was not a significant difference in student answers based on gender.

In an article titled "Gender differences in school performance – an explanation of students' attitudes towards and behavior in school, as well as personal relations" (my translation), Aasen et al. (2015) examine students' attitudes and behavior in school, as well as relational conditions, may contribute to explain gender differences in school performance. Students in 5th through 10th grades participated in the research (Aasen et al., 2015). The research revealed that motivation, work effort, and adaptation to the school's norms were most important for the students' achievements. Their analyses revealed that high motivation and work effort, in addition to the student's adaptation to the school's norms, correspond to high teacher

evaluation, and the opposite. This means that poor student adaptability to school norms, and low motivation and work effort are related to low teacher evaluation. Additionally, they discovered that among the researched factors, the student evaluation was fairly equal.

The lack of difference between boys and girls, in the reported experience of curricular support in this study, might indicate that the teachers are equally skilled at differentiating and facilitating to reach the ZPD for all students in the class In the ANOVA test I conducted to look for differences in satisfaction between girls and boys, I did not find any significant differences. From the t-tests do I know that there are significant differences between the 3Cs in LK06 and LK20, but the size of the sample in this thesis is too small to conduct groupwise analysis of gender with the data collected during LK06. The tests that were done to find information about differences between boys and girls do provide a pattern. However, there might not have been an adequate sample size to provide an indicative result.

6.0 Conclusion

In this final chapter, I will summarize the findings presented in this thesis. I will contemplate didactic implications and contributions of the findings (6.1). I will also offer suggestions for further research (6.2). Finally, I will provide some concluding remarks on my study (6.3).

The first main finding is that many Norwegian students in lower secondary school report receiving frequent curricular support in English teaching, and that there is an overall positive development of student perceptions over time. The report of frequent curricular support might be consistent with characteristics that are associated with effective teaching, such as exploratory approaches. The reported frequency increase in curricular support has been discussed in light of the increased focus on exploration and student-centered teaching approaches in the English subject curriculum, although this is not what TriPod seeks to investigate.

The second main finding is that *captivate* is the category with the most development in reported frequency of activity occurrence in the English classroom. Correspondingly with the overall *curricular support* category, the high frequency of captivation that was reported might correspond with an increased focus on exploration. The idea being that through facilitating more inquiry and exploration, the students will experience captivation in the subject to a greater degree.

The third main finding is that there is not a significant difference between genders. There was not a significant difference between the reported frequency of curricular support for girls and boys in the data. The Stoltenberg committee suggested increased focus on differentiation to decrease the performance gap between the genders. Based on the even survey answers between boys and girls, the teachers who have been part of these research projects, might have been careful to implement a high degree of differentiation.

6.1 Implications and contributions of the findings

Through the analysis of the survey data, and the discussion of the findings in this thesis, I have found that many students in Norwegian lower secondary school report receiving frequent curricular support in English teaching, and that there is an overall positive development of student perceptions over time. This finding is based on an average score of

3.82 out of 5, for the overall *curricular support* category. When compared to baseline data from LK06, the development in reported frequency of *curricular support* is 11.4%.

The high reported frequency of curricular support suggests that English teachers in Norway are implementing elements that are characteristics of effective teaching fairly often (TriPod Education Partners, n.d.). This means that students experience that their English teachers frequently explain difficult topics clearly, making sure that all students understand. Students find that their English teachers summarize, make sure they understand, and help them understand how they can improve, and they experience that their teachers make English class interesting and enjoyable. In LK20, the word "exploration" is implemented several times. The curriculum reform also contains formulations that refer to students to be actively involved in the classroom. The elements in the survey items and the wording of the curriculum reform highlight the importance of providing students with opportunities to explore, inquire, and construct their own knowledge through active engagement in the learning process. By encouraging students to take an active role in their learning and providing support when needed, teachers can help students reach their potential and achieve in-depth learning.

6.2 Suggestions for further research

There is limited research on development in the frequency of students receiving curricular support in English teaching in Norwegian classrooms. The EDUCATE project is conducting extensive research using systematic video observations of classroom teaching, combined with logs and interviews with teachers and school leaders, student surveys and student work (Brevik et al., 2023a). These data will be used to examine the effect of the curriculum reform. The EDUCATE project has a specific focus on the newly implemented "exploratory competence and life skills", "digital competence and algorithmic thinking" and "(digital) life skills" (Brevik et al., 2023a). Based on what the EDUCATE project is researching, and what I have found in my MA research, I will offer some specific suggestions for further research in this context below.

Firstly, I argue that it would be interesting to do a comparison between English and other subjects. Through a comparison between English and other subjects, valuable insight can be gained into whether high student survey ratings for teaching is specific to English or if it is indicative of the education system in Norway as a whole. Further research can help shed light on the factors that contribute to effective teaching and student engagement in the English

classroom, as well as identify effective teaching methods and activities. By researching these factors, strategies can be developed to possibly improve the quality of teaching and learning across all subjects. This can hopefully lead to better learning outcomes for students. The *curricular support* category is included in the surveys for all subjects, thus a comparison between English and other subjects could be done. The EDUCATE project collects data from several subjects (English, Norwegian, foreign languages, religion, social studies, mathematics, and science). Exploration is included in the curriculum reform for all the subjects. I think it would be especially interesting to do a comparison between English and science, as science is the subject in which most of the research and literature on exploratory approaches, has revolved around. As curricular support and exploration can be viewed in relation to student achievement, I argue that it would be very interesting to combine the results from TriPod with results from student tests over time. Through this type of research, one could find if increased student satisfaction coincides with better achievement.

Secondly, it would be very interesting to conduct statistical tests on a larger sample. A bigger sample would enable comparison and investigations of gender between curriculum reforms, as well as investigating all genders, not only boys and girls. With a larger sample, one could find results that could be far more influential than results describing patterns.

The curriculum reform (LK20) has an increased focus on exploration, as well as having formulations that make the students' interests more central. There is also a stated goal that the changes in the curriculum, on a general level, is set to achieve in-depth learning. Although I cannot draw conclusions from the statistical test conducted in this thesis, significant differences in survey answers have been found between the survey responses collected during LK06 and LK20. It is evident that the survey responses during LK20 show significantly higher student satisfaction. This must be considered a finding worth investigating further. Thus, it may indicate that there is a connection between student satisfaction and the curriculum reform.

Thirdly, it would be useful to do a regression analysis to examine correlations and causality. Based on the current evidence, I assume a correlation between the curriculum reform (LK20) and the increase in students' reported satisfaction. However, it is important to note that correlation does not necessarily imply causation. Therefore, further research would be

necessary to investigate the potential causal relationship between the curriculum reform and the increased reported student satisfaction.

6.3 Concluding remarks

The process of writing this MA study has been very educational. I have acquired not only in-depth knowledge of the changes made in the curriculum reform, but also a deeper understanding of the reasons behind the changes. I have developed a deep-rooted engagement in the student's perspective. My engagement providing differentiated instruction to meet all students in their personal ZPD have only increased. I believe that an awareness of ZPD and all the opportunities that lie within this zone, is crucial in the work to even out the differences between genders in Norwegian schools.

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Appendix: SPSS syntax

The data was made available through TSD in an Excel document, with two separate sheets. One sheet contained data collected during LK06 in the ETOS-project, and the other sheet contained data collected during LK20 in the EDUCATE-project.

For easier use in SPSS, the data was then split into other Excel documents containing only the data I was going to use. For example, when I ran the t-test for the consolidate category in LK06 and LK20, to see if there is a significant difference between the groups, I created an Excel document containing only results from the consolidate category and no other categories. Similar operations were performed for other analyses.

Code used for histogram – example for LK06:

```
GET DATA
  /TYPE=XLSX
  /FILE='C:\Users\p721-martieol\Desktop\Datasets\ETOS -
general.xlsx'
  /SHEET=name 'Sheet1'
  /CELLRANGE=FULL
  /READNAMES=ON
  /DATATYPEMIN PERCENTAGE=95.0
  /HIDDEN IGNORE=YES.
EXECUTE.
DATASET NAME DataSet1 WINDOW=FRONT.
DATASET ACTIVATE DataSet3.
GRAPH
  /HISTOGRAM(NORMAL)=MeanGEN
  /PANEL COLVAR=Project COLOP=CROSS.
```

Histogram of differences in mean scores between items in LK06 and LK20:

```
DATASET ACTIVATE DataSet3.
```

```
GET DATA
  /TYPE=XLSX
  /FILE='C:\Users\p721-martieol\Desktop\Datasets\Questions and
difference.xlsx'
  /SHEET=name 'Sheet1'
  /CELLRANGE=FULL
  /READNAMES=ON
  /DATATYPEMIN PERCENTAGE=95.0
  /HIDDEN IGNORE=YES.
EXECUTE.
DATASET NAME DataSet5 WINDOW=FRONT.


* Chart Builder.
GGRAPH
  /GRAPHDATASET NAME="graphdataset" VARIABLES=Question
MEAN(Diff)[name="MEAN_Diff"]
    MISSING=LISTWISE REPORTMISSING=NO
  /GRAPHSPEC SOURCE=INLINE.
BEGIN GPL
  GUIDE: axis(dim(1), label("Question"))
  GUIDE: axis(dim(2), label("Mean Diff"))
  GUIDE: text.title(label("Simple Bar Mean of Diff by
Question"))
  SCALE: linear(dim(2), include(0))
  ELEMENT: interval(position(Question*MEAN_Diff),
shape.interior(shape.square))
END GPL.
```

Code example for Q-Q-plot for LK06:

```
GET DATA
  /TYPE=XLSX
```

```
  /FILE='C:\Users\p721-martieol\Desktop\Datasets\ETOS -
general.xlsx'
  /SHEET=name 'Sheet1'
  /CELLRANGE=FULL
  /READNAMES=ON
  /DATATYPEMIN PERCENTAGE=95.0
  /HIDDEN IGNORE=YES.
EXECUTE.
DATASET NAME DataSet6 WINDOW=FRONT.
PPLOT
  /VARIABLES=MeanGEN
  /NOLOG
  /NOSTANDARDIZE
  /TYPE=Q-Q
  /FRACTION=BLOM
  /TIES=MEAN
  /DIST=NORMAL.
```

Code example for t-test performed between LK06 and LK20, for all C-categories:

```
GET DATA
  /TYPE=XLSX
  /FILE='C:\Users\p721-martieol\Desktop\Datasets\Comparison
ETOS and EDUCATE (t-test).xlsx'
  /SHEET=name 'Sheet1'
  /CELLRANGE=FULL
  /READNAMES=ON
  /DATATYPEMIN PERCENTAGE=95.0
  /HIDDEN IGNORE=YES.
EXECUTE.
DATASET NAME DataSet2 WINDOW=FRONT.
T-TEST GROUPS=PROJECT('ETOS' 'EDUCATE')
  /MISSING=ANALYSIS
  /VARIABLES=MEANS
```

```
/ES DISPLAY(TRUE)
/CRITERIA=CI(.95).
```

T-test for gender in LK20:

```
DATASET ACTIVATE DataSet1.
T-TEST GROUPS=Gender(1 2)
  /MISSING=ANALYSIS
  /VARIABLES=MeanGen
  /ES DISPLAY(TRUE)
  /CRITERIA=CI(.95).
```

Code example for box plots of gender representation in LK06:

```
GET DATA
  /TYPE=XLSX
  /FILE='C:\Users\p721-martieol\Desktop\Datasets\ETOS -
general.xlsx'
  /SHEET=name 'Sheet1'
  /CELLRANGE=FULL
  /READNAMES=ON
  /DATATYPEMIN PERCENTAGE=95.0
  /HIDDEN IGNORE=YES.
EXECUTE.
DATASET NAME DataSet1 WINDOW=FRONT.
EXAMINE VARIABLES=MeanCAP BY Gender
  /PLOT=BOXPLOT
  /STATISTICS=NONE
  /NOTOTAL.
```

Code example for ANOVA in LK06:

```
GET DATA
  /TYPE=XLSX
  /FILE='C:\Users\p721-martieol\Desktop\Datasets\Comparison
ETOS - three Cs - ANOVA.xlsx'
  /SHEET=name 'Sheet1'
  /CELLRANGE=FULL
  /READNAMES=ON
  /DATATYPEMIN PERCENTAGE=95.0
  /HIDDEN IGNORE=YES.
EXECUTE.
DATASET NAME DataSet3 WINDOW=FRONT.
ONEWAY MEANS BY ETOS
  /ES=OVERALL
  /MISSING ANALYSIS
  /CRITERIA=CILEVEL(0.95).
```