Investigating student engagement in a portfolio-based course

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Fall 2017

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Abstract

This study is focused on understanding student engagement in a portfolio-based course, and consequently understanding more of student engagement. A study of this nature is needed as there is currently scarce empirical evidence on this topic. In addition, student engagement has most often been studied through large survey studies, where it is viewed as a set of desirable traits and a list of targets for students. By conducting such studies, the argument in this study is that student engagement is viewed as a product. What this study wishes is to bring forth a view of student engagement where it is seen as more of a process. In this study, this is addressed by adopting a qualitative nature and conducting a smaller, in-depth study of participants in a course.

The study aims to answer what forms of engagement that are visible in a portfolio-based course, and understanding what relations seem important for student engagement. This is done through employing aspects from a student engagement framework developed by Kahu (2013) and by using sociocultural theory as the theoretical background of the study.

The data set used for analysis is a collection of semi-structured interviews conducted in three groups with 9 participants. The empirical setting is a biology course, which is part of a bachelor, at a Norwegian university. The course in the empirical setting was based on a portfolio design, where the final grade was determined on the collection of work in the portfolio throughout the duration of the course.

Main findings include how the influence of students' emotions and thoughts about interest should not be overlooked, as they are important factors that may affect students' engagement. Further, it was found that students mostly enjoy working with assignments as these provide good opportunities for learning and engagement.

Another factor found to be important for students' learning was how they had to take responsibility, and be actively engaged. It was found that students saw it as a necessity to be responsible in their approach to their learning, in order to maximise their learning process. This was done especially by attending activities, using feedback, and working with assignments. Group work was important to students, as a way of learning and increasing their overall satisfaction and engagement with the course. It was found that students learn a lot by working with others, and that this is something they value. Subconsciously, students employ

strategies when working and learning together that relates to peer-mediated learning and scaffolding.

Finally, in order to understand more of student engagement and to avoid disengagement among students, some challenges for students to either become, or remain, engaged were found. These included disinterest with lectures, feedback not serving the function students expect, clarity of assignments, and influence of timing and workload.

What was found to be a key factor which affected students' engagement is their need to see the use of what they are doing. This may arguably show that the student body of today has become strategic in their choices, and are not willing to "waste their time" on engaging with something that does not benefit them in a more distal perspective.

This study concludes with a need to strengthen the view of student engagement as a process, and a look ahead for further studies continuing this line of thought. In addition, a recommendation is made that more longitudinal studies of the concept is needed, as well as more studies focused on understanding some of the challenges for students to remain engaged. In particular, students' need to see usefulness and their somewhat strategic behaviour towards engagement is highly interesting.

Key words; student engagement, portfolio, portfolio-based course, student perspective, challenges for students to remain engaged, process view of student engagement, strategic behaviour of students

Preface

This project would not have been a reality without the help and support to those around me. To my supervisors Rachelle Esterhazy and Monika Berøe Nerland I can only say thank you for your support and counsel, I am forever grateful.

To the QNHE project and its participants; I hope this thesis may be valuable to you in whatever form and that I have made even just the slightest of contributions. It has been an honour to take part in transcribing data and getting a glimpse into how "real" research works.

To my friends, I am sorry I said I could not see you because of this project. It has taken a lot of my attention and I am glad you stuck with me.

To my parents, you have always supported me in my endeavours, which means more to me than you will ever know. To Ane and Eivor, my beloved sisters, I hope I am the role model I wish to be, showing you that you can do and be whatever you want to be in this world.

I would like to express my gratitude to those who never gave up in me, even when I came close to giving up on myself and this work.

Many thanks,

Ingvild

Abbreviations

Nasjonalt Organ for Kvalitet i Utdanningen/The Norwegian Agency for Quality Assurance in Education – NOKUT

Problem-based learning – PBL

Quality of Norwegian Higher Education: Pathways, Practices and Performances (on-going research project) – QNHE

The National Survey of Student Engagement - NSSE

The Student Course Engagement Questionnaire – SCEQ

Zone of proximal development – ZPD

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1 Introduction

This chapter includes the background, rationale, and research questions of the study as well as the thesis outline and will help to inform the reader of what the purpose of the study in addition to pointing to why a study of this nature is needed.

1.1 Background

The background for this study relates to student-centred approaches, and the growing emphasis on such approaches to learning in higher education. Student-centred approaches to learning have repeatedly had their importance reaffirmed in higher education and a key component of these student-centred approaches include a strong emphasis on active learning, and thus the requirement of active students. Damşa et al. (2015) conducted a review of research on aspects affecting student learning and found that the importance of facilitating ways in which students can take a more active part in the construction of knowledge in their studies is profound for their learning.

Related to thoughts about student-centred approaches, and active students, is the concept of student engagement. This is a concept that has been proven hard to define and is subject to multiple interpretations (Trowler, 2010). However, student engagement is for the purpose of this study viewed as the efforts by which students engage with activities and assignments in a given course (Kuh and Hu, 2001; Coates, 2005).

Students' role in education and teaching and learning structures is highly contested and often debated in higher education literature. While more traditional course design structures focus on the role of the teacher, student-centred approaches inherently see the role of the student as important. The role of the student in traditional course structures is to be present and does not necessarily require their active engagement. As a result of the increasing focus on student-centred approaches in higher education come new ways of designing courses. Some of these may be may be structured in a manner that is aimed at promoting student-centred learning, and thus student engagement.

One course structure seen as promoting student-centeredness is courses based on portfolio assessment. The main purpose of a portfolio is to highlight the core professional knowledge, skills or competencies a person has acquired throughout the duration of a course. Portfolios

usually consist of written elements such as assignments, reflections, and quizzes but might also include oral or material elements, depending on the discipline. This is collected during the time frame of a course as a representative sample of students' work (Dysthe and Engelsen, 2011; Smith and Tillema, 2003). In addition, a portfolio has an assessment purpose and usually replaces the traditional school exam at the end of the course. The assessment and final grade is based on the collection of students' work throughout the course.

The use of portfolios in higher education over the last decades has increased greatly. The use of the portfolio in Norway as a mode of assessment has increased since the implementation of the quality reform in the beginning of the 21st century. Prior to the reform in Norway, compulsory writing at undergraduate level was rare, particularly at universities, where the more traditional school exam was the dominant assessment form (Dysthe and Engelsen, 2004). Before the reform, portfolios were only used sporadically in Norwegian higher education. Defining the portfolio has been argued by Dysthe and Engelsen (2004, p.240) as being "no easy task". The concept has an ambiguous nature and may be applied to a range of contexts.

In previous research on student engagement, terms such as facilitate, encourage, and promote have often been used to study the concept, as well as presenting results from research. This suggests a conceptualisation of student engagement as a product, and there is a need to oppose the common conceptualisation of student engagement as a product by understanding more of the temporal aspects of student engagement, and thus seeing it as a process. There is currently a lack of literature and empirical evidence on the link between portfolio-based courses and student engagement.

1.2 Rationale and research questions

There has been a lot of work done that focuses on the use of the portfolio in higher education but there is still empirical work missing that addresses the link between portfolio-based courses and student engagement.

Quality of higher education is on the agenda of higher education research in Norway, which is especially evident through an on-going project aimed at mapping the quality of higher education, called Quality of Norwegian Higher Education: Pathways, Practices and Performances, hereafter simply referred to as QNHE (QNHE, 2017). The Norwegian Agency

for Quality Assurance in Education (NOKUT, 2017) recently changed their annual national student questionnaire, which is focused on investigating student satisfaction with courses and programmes, and generally life as students, so that it on a larger scale will measure student engagement and involvement in activities and social settings, which have been found to have a positive effect on teaching and learning (Kunnskapsdepartementet, 2017). This too shows the current focus that is being placed on understanding more of student engagement.

This study uses data collected as part of the QNHE project and is as a result placed in the middle of current happenings in the higher education landscape, which increases its relevance and possible importance.

A growing concern about students' disengagement (Axelson and Flick, 2010) explains why student engagement research is particularly important. Understanding more of how student engagement unfolds, what encourages students, how they act engaged, as well as seeing some of the challenges for students to remain engaged is important in order to possibly avoid disengagement. It is therefore also important to understand more of how students are engaged in working forms and course structures aimed at promoting engagement, such as portfolio-based courses.

Part of the common conceptualisation of student engagement as a product in higher education research is visible by the emphasis on seeing student engagement as a set of traits and desirable targets for students to possess. To oppose this stance with a stronger emphasis on seeing student engagement as a process it is important investigate how it emerges and unfolds. When investigating how it emerges, seeing what relations are important for student engagement is interesting, as what is partly inherent to the processual view on student engagement is the assumption that engagement is relational and students are always engaged in relation to something. For that reason, this thesis puts special attention on the relational aspects of student engagement and how it emerges in the context of a portfolio-based course. By doing so, more of the temporal aspects, and aspects related to student engagement as a process is investigated. Part of this is also understanding how engagement varies with activities, assignments, and relations between these. In addition, seeing the relations between involved actors in a course setting, such as teachers and peers, and how this relates to student engagement is interesting.

Damşa et al (2015), as part of their recommendations for future studies in the area of higher education teaching and learning, suggests that understanding more of how activities play out

in specific contexts of educational programs and courses, as well as how students experience this, is in need of more attention in research. Damşa et al (2015) further stated that few studies exist that look into the educational processes as they unfold, especially in the Norwegian context. Currently, little empirical data in Norway exist on the relationship between pedagogical practice, forms of engagement, teaching and learning approaches and assessment practices.

The focus of this study is student engagement in a portfolio-based course and the relationship between a course based on a portfolio design and student engagement. The aims of this study are threefold. Firstly, it aims to investigate how student engagement emerges in a portfolio-based course. Secondly, it aims to establish what relations are important for student engagement in a portfolio-based course. The final aim of this study is contribute in understanding more of the processual and temporal nature of student engagement, especially by seeing how it emerges.

This study will contribute by understanding more of the relationship between a portfolio-based course and student engagement. The possible outcomes of this study includes contribution to the field of knowledge and the existing body of literature of student engagement, as well as potentially filling gaps in this literature. These gaps include a lack of empirical evidence on the relationship between a portfolio-based course and student engagement and temporal aspects of student engagement. By filling these gaps, this study will contribute in strengthening the view of student engagement as a process. Finally, this study may become a contribution to the QNHE project by providing insight into the unfolding of student engagement and the process thereof in an undergraduate course.

Research questions

There are two research questions to be answered in this study;

> **What forms of student engagement emerge in a portfolio-based course?**

> **What relations are important for student engagement in a portfolio-based course?**

The first research question relates to what forms of student engagement emerge in a portfolio-based course. The focus here is to investigate and understand how students are engaged in a portfolio-based course, and what they engage with. In addition, it is important to understand

how this engagement unfolds. This includes seeing how students engage with activities and assignments. Of particular importance is seeing how students' emotions and aspects of interest relate to their engagement, as well as understanding students' engagement with domain-specific knowledge. Finally, seeing how aspects of interaction and participation relate to student engagement is investigated. The forms of engagement will be elaborated on further in the analytical framework in chapter 3.

The second research question addresses what relations are important for students' engagement in a portfolio-based course. This includes understanding the relationship between aspects within the course, such as activities, assignments, and actors involved. Understanding more of the relations important for student engagement is necessary in order to strengthen a processual view of engagement. This will further explained in chapter 3.

The nature of this study is qualitative, and it uses a case study design. The questions will be addressed through a thematic analysis of group interviews with students who are attending a portfolio-based course in biology as part of their bachelor's degree.

1.3 Thesis outline

Chapter 2 contains the literature review, which aims at establishing and presenting how student engagement and the portfolio has been previously researched and viewed in higher education literature. In addition, the gap in which the contribution of this study would come in is discussed.

Chapter 3 is dedicated to the theoretical background of the study and the analytical framework applied to the analysis.

Chapter 4 entails the methodology for the study and the issues regarding quality criteria and issues of validity and reliability.

Chapter 5 contains the analysis where forms of engagement in a portfolio-based course are presented, including a section dedicated to bringing forth the possible challenges for students to remain engaged in a portfolio-based course. This chapter will be answering the first research question.

Chapter 6 holds the discussion where the aim is to answer the second research question in the study, related to establishing what relations seem important for student engagement in a portfolio-based course.

Chapter 7 is the final chapter and its purpose is to conclude, bring forth the limitations of the study and make suggestions for further research.

2 Literature review

This chapter begins with a review of previous research conducted on student engagement, separating between empirical and conceptual contributions. As a result of the review of current literature, existing gaps in student engagement research are identified. Then, a review of research on the portfolio is investigated before a final section dedicated to summarising what is known about student engagement and the portfolio is presented.

2.1 Previous research on student engagement

Investigating and presenting how student engagement has previously been studied is interesting as it sheds light on the perceptions related to student engagement in higher education research. Trowler (2010) presented ideas from a number of studies and showed particularly how student engagement often has been studied through large nationwide survey studies, particularly in the US and Australasia (Trowler, 2010, p. 3). Traditionally, student engagement studies conducted in the UK has often taken place through smaller, single case studies. However, researching student engagement through survey studies has now too become the method of choice in the UK (Trowler, 2010).

Understanding the approaches to investigating student engagement in research is of essence to the purpose of this study and much of the reason for these various approaches to the topic in research is grounded in the conceptualisation of the term, and particularly the opposing product-process view.

2.1.1 Empirical research on student engagement

Although Trowler (2010) argues that student engagement often has been studied through large nationwide surveys such as the National Survey of Student Engagement (NSSE), reviewing studies of this size is beyond the scope of this review. This review will therefore focus on presenting results from somewhat smaller research studies.

Price et al (2011) conducted a study that aimed at understanding how to increase the levels of student satisfaction with assessment feedback in higher education and to investigate how to engage students more effectively with assessment feedback. As part of this, they wished to critically review the process of engagement. Opposing a product view of feedback, the way in

which Price et al (2011) argue for feedback to be conceptualised is as a long-term dialogic process in which all parties are engaged. A central theme which informed the research design and analysis of Price et al's (2011) study was the premise that student engagement with assessment feedback is not a student responsibility alone. Further, Price et al (2011) argue that student engagement should not be seen simply as a function of psychological factors, but rather as part of, and influenced by, a wider process involving others inside and/or outside a community of practice.

Price et al's (2011) article presents and draws on data from a three-year empirical study on engaging students with assessment feedback. Drawing on socio-constructivist perspectives on feedback in order to explore stages of the engagement process, Price et al (2011) identified factors such as behavioural, cognitive, and sociocultural that promote or prevent engagement. There were three research questions to be answered in Price et al's (2011) study including how do staff perceive, use and deliver feedback, how do students perceive and use feedback, and finally, how do staff-student relationships affect the way feedback operates?

In order to explore these research questions, four strands of work were identified and conducted in three business schools in UK universities. Data collection in these four strands took place through closed-response questionnaires, student evaluations, and semi-structured interviews with students and staff. The questionnaires were collected from undergraduate students in the universities, and totalled a number of 776. For the interviews, there were a total of 36, herein 16 conducted with undergraduate students and 20 with staff in all three of the partner institutions. In their article, Price et al (2011) focus especially on presenting results from the semi-structured interviews, and particularly those conducted with students, as well as briefly using questionnaire data to present a broader picture of students' ratings of different types of feedback.

One of the main findings in Price et al's study (2011) was that a more holistic, socially-embedded conceptualisation of both feedback and engagement is needed. Price et al (2011) argue that this conceptualisation is likely to encourage tutors to support students in more productive ways, and thus enabling students to use feedback to develop their learning, rather than responding mechanistically to tutors' 'instruction'.

In relation to the purpose of feedback, Price et al (2011) found that it has both a developmental purpose for students as well as serving a role of benchmarking and justifying grades. This interlink between feedback serving both a formative and summative purpose was

found to create confusion, both for tutors and students, about the true purpose of feedback. However, it was found that the overall emphasis on the summative aspects of assessment and feedback was the primary purpose, thus negating its formative aspect. Students were found to seeing feedback as giving them an 'overall diagnosis' of how they were doing in the course and wanted feedback to 'give them a push in the right direction', rather than provide them with answers (Price et al, 2011, p.887).

Students were found to express a wish for more specific and less generalised feedback, and displayed a need for feedback to be useful. Students' thoughts about the usefulness of feedback were particularly established by their opportunity to apply it. It was found that students' perceptions about the value of feedback was a strong factor in students' engagement with getting feedback and attending feedback sessions. In addition, timing of feedback was important for the students' judgement of the usefulness of feedback. If feedback was provided long after the work was done it was not seen as useful. Students' thoughts about usefulness of feedback was also related to how the content of the comments could be incorporated in future assessment tasks and thus the utility of the feedback. If students experienced feedback as being unsatisfactory, this would affect their willingness to receive feedback at later points.

The relational dimension of feedback was also found to be important, especially with regards to the relationship between students and staff. This was found to have a direct impact on the students' engagement. It was found that if students were confident of the relationship with staff, students welcomed the opportunity to engage in conversation to clarify and interpret feedback. Students were found to respond to staff interest in them and typically felt more motivated as a result.

The approachability and availability of staff was found to be an important cursor affecting students' engagement with feedback, especially their cognitive engagement (learning from feedback), which was found to be best supported through dialogue with staff. The reason why the relational dimension was particularly important for students' cognitive engagement with feedback was found to be because of how students often said that they needed reassurance about their understanding of the feedback from staff. It was discovered that students often displayed a sense of inability to act on the feedback without further help, which in turn limited the usefulness of feedback.

The reason why this study has been included in the literature review is partly because of the interesting nature of findings, but also because of the similarity in focus applied by Price et al

(2011) to the focus of this study. By emphasising how both feedback and student engagement should be seen as a process rather than a product, the vast relevance of including this study and understanding more of how others have approached seeing student engagement as a process is clear. In addition, understanding more of students' engagement with feedback is important, as feedback is an integral part of courses based on portfolio design, which will be further elaborated on in 2.2.

Another study focused on students' engagement with feedback is Scott and Shields (2011). They conducted a study at a UK university where the aim was to understand students' perceptions of, and engagement with, feedback. The purpose of the study was to shine a light on the possible differences between students' engagement with feedback in different disciplines. The study compared the perceptions of students in biological science to the perceptions of students at the university as a whole.

The study was based on a survey, distributed both in a "postcard-format" and online. The respondents were sorted based on their year of study and consisted of 232 1st year students, wherein 48 were students of biological sciences. In year 2 there was a total of 145 respondents, where 24 were students of biological sciences. Finally, from the third year a total of 207 students responded to the survey, with 40 being students of biological sciences.

The survey included three open-ended research questions, which included a request for students to name five types of feedback they receive on their work, answering what is the most useful piece of feedback they had received, and finally to name one way in which they had used feedback to improve their learning.

By Scott and Shields (2011), student engagement is conceptualised especially with regards to a cognitive aspect, and they stress the difference between deep and surface approaches to learning. What Scott and Shields (2011) found was that students of biological sciences gave greater recognition to oral feedback compared with data from previous studies, emphasising this form of feedback as equally important as written feedback. Compared with the university as a whole, students of biological sciences showed stronger preferences for feedback that addressed technical issues such as assignment structure and referencing rather than more reflective aspects of feedback. In addition, it was found that students, both of the university as a whole and biological sciences, named peer feedback as a type of feedback they received and valued.

The most useful piece of feedbacks students experienced to receive was regarding how to better structure their assignments, how to improve their work, identification of strengths and weaknesses and advice on referencing. Students expressed that feedback had been used to improve their learning through improved writing skills, reading more, and reflecting on feedback preparing for their next assignment. The latter point was more evident for the university as a whole, where 32% of the respondents saw this as a way in which feedback had been used to improve their learning, compared to students of biological sciences where only 19% of the respondents said the same.

Scott and Shields' (2011) study is relevant for the purpose of this study because it sheds a light on students' perceptions of feedback, as well as supporting some of the findings by Price et al (2011). In addition, Scott and Shields (2011) presents findings related to students' engagement with feedback and their thoughts about its usefulness. In addition, the empirical setting of this study is in the field of biology, and therefore understanding some of how students in this discipline may differ in their perceptions of, and engagement with, feedback is interesting.

Another empirical study on student engagement was conducted by Ahlfeldt et al (2005). The aim of their study was to investigate student engagement in courses based on problem-based learning (PBL). In order to investigate this phenomenon, Ahlfeldt et al (2005) developed a student engagement survey with 14 questions adapted from the original NSSE survey. The questions in the survey were chosen based on their measurability of student engagement at the classroom level with a particular emphasis on three categories including seeing the level of collaborative learning, cognitive development and personal skills development. The survey examined levels of student engagement in 56 classes at an upper mid-western university in the US. The surveys were administered to 2603 students at the end of the semester, and 1831 of these students completed the survey.

Ahlfeldt et al (2005) found that all three categories, collaborative learning, cognitive development, and personal skills development were highly correlated and statistically significant, as well as being interdependent and necessary variables for researching students' engagement score. Further, the findings suggested that higher level of engagement can be achieved in smaller-sized, upper-level classes and that implementing PBL methods of instruction can enhance students' engagement. Class level, number of enrolled students, and level of PBL were all found to highly correlate with students' engagement score. It was found

that higher level classes and classes with a smaller number of enrolled students had higher levels of engagement.

The study conducted by Ahlfeldt et al (2005) is interesting to include because it shows clearly how student engagement can be studied when viewed as a product. Students were placed on a scale where they were judged as being engaged or not. This is very different from the way student engagement is both studied and conceptualised for the purpose of this thesis, but is necessary and important to include in order to shed a light on how student engagement might be studied when viewed as a product.

Further, Ahlfeldt et al (2005) contributes in seeing how alternative modes of instruction, such as PBL, and perhaps the use of the portfolio in higher education, may foster engagement among students. In addition, in their study Ahlfeldt et al (2005) focused on seeing levels of collaborative learning in relation to student engagement, which is interesting for the purpose of this study, as this thesis has a socio-cultural background and investigates relations important for student engagement, which includes group work and concepts such as peer-mediated learning and scaffolding.

The final empirical study of student engagement which has been reviewed for the purpose of this study is an article by Handelsman et al (2005) which includes their attempt at deriving a valid and reliable measure of student engagement seen at what they refer to as the micro level, namely in particular courses and what happens in and immediately after classes. The aim of the study was to test the validity and reliability of a constructed questionnaire called the Student Course Engagement Questionnaire (SCEQ), which is loosely based on the NSSE. Their 2005 article is dedicated to presenting the methods and results from two studies. In the first study, Handelsman et al (2005) describe the instrument and initial reliability and validity data, while in the second study they assessed the relationship of engagement to grades amongst first-year undergraduate students at the University of Colorado in the US.

Student engagement is by Handelsman et al (2005) conceptualised as students' involvement in courses and they used an inductive approach to capture the many potential dimensions of student engagement and to generate items that reflected the construct of student engagement by asking students and staff to describe what engaged students do, feel, and think. As a result of this, Handelsman et al (2005) developed a preliminary scale that consisted of 27 behaviours and attitudes they saw as being indicative of engagement.

As part of their two studies, Handelsman et al (2005) collected data from 266 undergraduate students in three fields of study including psychology, politics and mathematics. As a result of their first study, student engagement was found to encompass four dimensions including skills, emotional, participation/interaction, and performance engagement. Skills engagement was seen as including students' general learning strategies, which can be used to attain both intrinsic and extrinsic rewards, and Handelsman et al (2005) argued that this may be seen in relation to the level of academic challenge. Emotional engagement was considered to represent students' engagement through emotional involvement with class material and Handelsman et al (2005) acknowledged that this type of engagement is virtually invisible to the outside world. Participation/interaction engagement relates to student engagement through participation in class and interactions with instructors and peers. Finally, performance engagement is seen as students' performance in class.

In order to investigate the four dimensions established, students were asked to identify how they felt a set of behaviours, thoughts and feelings described them in a given course, how engaged they were in the particular class and how engaged they were in the class compared to other courses they were taking in the same semester. In addition, students were asked to either agree or disagree with a statement regarding whether or not they believe that you have a certain amount of intelligence and cannot do much to change it. Finally, students were asked to state their preference in choosing between getting a good grade and being challenged in class.

What was found as a result of the first study was that the SCEQ was in fact a valid and reliable measure of student engagement. Handelsman et al (2005) argue that the questionnaire provides more information about student engagement than what would have been achieved by simply asking students how they feel, which they state is skewed towards emotional engagement. Further, Handelsman et al (2005) argue for the validity and reliability of the SCEQ because it goes beyond watching students' performance in class, which would be skewed towards skills and participation/interaction engagement, or making inferences according to students' grades, which is linked with performance engagement.

In Handelsman et al's (2005) second study, the aim was to further verify the validity of the developed SCEQ by testing the measure on a different group of students. In order to investigate whether the SCEQ might be useful in educational settings, Handelsman et al (2005) investigated its relation to grades. To do this, Handelsman et al (2005) collected SCEQ

data from 40 undergraduate students who were enrolled in a basic liberal arts mathematics class. Among the participants, students choice in their subject of major varied. Three grades were obtained from each participant, including an average grade on weekly homework assignments, students' midterm examination grade, and their final examination grade.

As a result of the second study, it was found that students' performance engagement affected their grades on homework and midterm examination grades. Other engagement factors influencing students' midterm grades was found to include participation/interaction engagement and skills engagement. Participation/interaction engagement was also found to affect students' final examination grade.

Handelsman et al (2005) argue that the relationship between performance engagement and assignment, as well as midterm, grades makes sense, as the assignments rewarded sheer effort. In addition, the midterm exam was designed as an open-book test. Handelsman et al (2005) also states that performance engagement might include students' efforts to achieve extrinsic rewards, which they argue is consistent with previous research showing that extrinsic motivation is useful when the material is new and not intrinsically interesting to the students.

Including Handelsman et al (2005) in this review is done partially because it sheds an important light on how student engagement can be seen when studied in a purely quantitative manner, and it is also important because it reaffirms the view of student engagement as a product. There is no implications in the article by Handelsman et al (2005) that student engagement is viewed as a process, and the processual aspects of student engagement was not in focus in either of their two studies, and not a cursor to be looked for in their developed SCEQ. Finally, without being fully explicit about the fact that student engagement is a multidimensional construct, Handelsman et al (2005) confirms this in their study by presenting four dimensions of student engagement, which is interesting and important to note.

2.1.2 Conceptual contributions

In addition to empirical research on student engagement, what has influenced research on student engagement relates to how the concept has an array of definitions, ways of being applied and is subject to multiple interpretations. This has led to a lot of student engagement research being dedicated to clarifying the concept and trying to establish conceptual understanding.

Kahu (2013, p. 758) argue that student engagement is a "current buzzword" in higher education. She argues that this is due to how it is increasingly researched, theorised and debated with a growing evidence of its critical role in achievement and learning. Further, Gourlay (2015) argues that student engagement has become the guiding concept underpinning national student surveys in the US, the UK and Australasia. She argues that the term is used to denote a desirable set of practices and orientations in students, which ought to be worked towards or encouraged in order for higher education to be successful. Therefore, as Gourlay (2015) argues, it is a term proven to have an enormous influence in the higher education sector.

Kahu (2013) conducted a literature review investigating the four dominant research perspectives on student engagement. These four include the behavioural perspective, which entails putting a particular emphasis on student behaviour and institutional practice; the psychological perspective, where engagement is defined as an individual psycho-social process; the socio-cultural perspective, highlighting the critical role of the socio-political context; and the fourth and final perspective which is the holistic one, where the view of engagement is broadened. Kahu (2013) identified key problems, factors that influence student engagement, and the immediate and longer term consequences of engagement. Finally, she presented a conceptual framework that could help improve the surrounding elements of student engagement, which is part of the theoretical background of this study (see chapter 3).

What Kahu (2013) found was a particular need of a strengthened body of literature and a greater focus in higher education research on the role of emotion in student engagement. She argued that little attention has been paid to students' more immediate emotional responses to their learning. The conceptual framework presented by Kahu (2013) highlights the need for projects that focus on narrower populations, as it became evident through her study that "a broad generalisation of the student experience is ill-advised" (p. 769). Kahu (2013) proposes use of in-depth qualitative methodologies to capture the diversity of experience.

Acknowledging how student engagement is a current buzzword, Trowler (2010) conducted a literature review exploring how student engagement has been operationalized. Trowler presents ways of viewing student engagement in literature and summarises student engagement as something which *is concerned with the interaction between the time, effort and other relevant resources invested by both students and their institutions intended to optimise the student experience and enhance the learning outcomes and development of*

students and the performance, and reputation of the institution" (Trowler, 2010, p. 3). The extensive literature review conducted by Trowler is a useful contribution in understanding how student engagement has previously been studied and theorised as well as illustrating how complex the concept is.

Macfarlane and Tomlinson (2017) argue that although student engagement often has been seen as a positive attribute, and serving the purpose of being an indicator of educational success and institutional excellence, they remain somewhat critical of this and argue that student engagement remains under-theorised. In addition, Macfarlane and Tomlinson (2017) are critical of how common methodologies employed by student engagement researchers lacks rigour. This critique is mainly grounded in how studies on student engagement are based on a cause-and-effect relationship in student engagement, which relates to the argument that student engagement is often conceptualised as a product. Macfarlane and Tomlinson (2017) argue that there is a need for studies conducting longitudinal analyses of student engagement, and that current research tends to be on institutional targets rather than individual students.

As part of their critique, Macfarlane and Tomlinson (2017) state that students who are uninterested in institutional or pedagogic interventions can be negatively, and perhaps wrongly, labelled as apathetic or disengaged. They argue that students should be able to learn at their own pace under the conditions of their choosing. Further, as not all engagement is visible, the more invisible types of engagement such as note-taking, listening or thinking, may be mistaken for disengagement or a sense of disinterest among students simply because it cannot be seen similarly to forms of engagement that are more visible, such as attendance or asking a question in class. Macfarlane and Tomlinson (2017) argue that simply because one cannot physically see a student being engaged, that does not automatically mean that the student is not engaged.

Overall, the critiques offered by Macfarlane and Tomlinson (2017) relates to how student engagement in both higher education practice and policy today has been heavily influenced by thoughts of market-driven higher education and neoliberalism. Arguably, this also affects how student engagement is researched and conceptualised. Furthermore, their critique of student engagement is largely based on how it consists of targets and performance indicators often established by institutions or across nations, especially through large survey-studies. Macfarlane and Tomlinson (2017) argue that this view of student engagement requires

students to comply with these targets and indicators to validate their performance as learners. Aspects of performativity, such as obligatory attendance, is argued to have little to do with enhancing students' autonomy and goes against the core idea of student-centred approaches being focused on students.

Macfarlane and Tomlinson (2017) argue that in the day and age of a market- and performance-driven higher education, student engagement is a manifestation of the regulated student, who either exercises desired forms of behavioural compliance and is thus seen as engaged, or who does not and is then considered to be less engaged or perhaps even disengaged. As a result, Macfarlane and Tomlinson (2017) suggest that students might not actually be fully engaged, but might rather adopt characteristics of an engaged student for strategic reasons. As a result, learning outcomes for students might not be on a deeper level but rather more for strategic purposes as they are merely 'posing' as engaged. The reason why students might adopt such behaviour and a more strategic view and approach to engagement is because it is seen as negative not to be engaged. There is a pressure for students today to show that they are engaged, and if they are not, they are not equally "successful" or "academically fit" as their peers who show more signs of engagement.

Another researcher critical of the mainstream approaches taken in student engagement research is Gourlay. In her study of 2015 she aims to challenge mainstream discourses surrounding student engagement, which seeks to place students into categories and focuses on the importance of 'participation', referred to by Gourlay as 'the tyranny of participation' (2015, p.405). Gourlay (2015) found that mainstream conceptions of student engagement emphasise practices which are observable, verbal, communal and indicative of 'participation', and that private, silent, unobserved and solitary practices may be pathologised or rendered invisible – or in a sense unknowable – as a result, despite being central to student engagement, supporting the claim made by Macfarlane and Tomlinson (2017) that the invisible forms of engagement are often viewed as disinterest or disengagement.

After having reviewed Macfarlane and Tomlinson (2017) and Gourlay (2015), the need for a strengthened body of literature with research based on more qualitative, in-depth studies, is once again reaffirmed. Opposing what is seen as the product view of student engagement with a stronger emphasis on student engagement as a process is possibly highly fruitful and will stay more in line with what student-centeredness should be about.

2.1.3 Gaps in student engagement research

Although student engagement is a concept that is of great importance in higher education, and it being a concept which has been researched and theorised far and wide, there is still gaps to fill. In student engagement research more insights is needed into how it unfolds and how students experience being engaged, as well as understanding more of the process of being engaged. It is not fruitful to understand engagement fully to only view it as a fixed state and a product, but there is also a need to understand it as a more fluid 'state of being' and a process. One of the gaps in student engagement research is therefore to bring forth more empirical work that supports the view of student engagement as a process.

Zepke (2015) states that student engagement has mainly been studied through a mainstream two-strand approach, the first of which originating in American research which focuses on identified learning behaviours which are then turned into quantifiable and generic indicators of engagement. This is evident in 'variable-based' research such as that that in the NSSE. The other mainstream strand focuses more on students' feelings of emotional belonging and agency (Zepke, 2015). The link between the two strands is the overarching notion of student engagement's strong association with quality teaching and learning, and student success.

Zepke (2015) argues that there are ways to somewhat distance a study from these traditions but at the same time building on them. Further, he argues that although the applied methods within these two strands vary, a vision of a learning paradigm where learning is central and instruction acts as supportive of, and secondary to, learning, is what the two strands have in common. Zepke (2015) argues that whilst he does not aim to sketch a new engagement paradigm, he aims to extend the meaning of student engagement beyond this mainstream view and states that when applied to research, this perspective of engagement beyond the mainstream rests on four interrelated assumptions.

These four interrelated assumptions relates firstly to how student engagement occurs in a specific ideological climate, secondly to how quantitative engagement research offers a feeling of certainty, thirdly that student engagement is better theorised as a sociocultural ecological perspective, and finally, that student engagement research occupies different research paradigms (Zepke, 2015, pp. 1314-1316). It is particularly the third assumption that is of interest for the purpose of this study as the theoretical background is influenced by sociocultural theory. This is by Zepke (2015) one of the ways in which one can move beyond the mainstream approaches to student engagement research.

When considering student engagement in relation to a sociocultural approach, student engagement seen as being influenced by social relations. In this view, the focus moves from the individual learner and teacher and their behaviour to a wider social context. This is relevant for the purpose of this study, as there will be a particular focus on the relationship between peers with regards to student engagement and how this is fostered as well as understanding what relations seem important for student engagement.

By having reviewed Zepke (2015) and particularly his take on the two-strand mainstream approach to student engagement research, it is clear that there is a gap in student engagement research that needs to be filled and by employing an approach with a sociocultural perspective in student engagement research, this gap can be filled in this study. Furthermore, by revisiting Kahu (2013) and her proposal to use in-depth qualitative methodologies to capture the diversity of experience in relation to student engagement, framing the perspective of this study has been given some clarity and it is evident that a focus on the student perspective is needed in literature.

The critiques of student engagement brought forth by Macfarlane and Tomlinson (2017) and Gourlay (2015) also shows that there are some gaps in student engagement research as well as in the way student engagement is viewed in both policy and practice. It is argued that student engagement should be seen as more than a list of targets and desirable traits, and seeing it as more of a process is something that is missing from student engagement research. In line with the argument made by Zepke (2015) about the mainstream approaches to student engagement research, this study might help in filling some of the gaps created by these mainstream approaches by using qualitative methods of study.

In addition to strengthening the view of student engagement as a process, seeing some of the challenges for students to either become or remain engaged is something that is largely untouched in the student engagement research sphere. Therefore, this study will contribute by aiming to understanding more of the challenges experienced by students in their engagement, and thus filling another gap in student engagement research.

2.2 Portfolio

The use of the portfolio as both a part of the teaching and learning processes and as a mode of assessment in higher education has increased since the mid-1990s. In Norway, the use of

alternative modes of assessment and for delivering teaching and learning experienced a growth since the implementation of the Quality Reform of Higher Education (Damşa et.al., 2015, Dysthe and Engelsen, 2004).

Similarly to the concept of student engagement, one of the most challenging aspects of the portfolio is its 'chameleon' role, and the many definitions that exist for the concept. Smith and Tillema (2003) address this and state that as the body of literature on portfolios grows, so does the array of definition and interpretations of the instrument.

2.2.1 Previous research on the portfolio in higher education

The portfolio has often been researched through means of literature reviews but also through case studies. In addition, portfolio practices have also been investigated through means of quantitative studies such as survey studies.

Smith and Tillema conducted a study in 2003 based on an article from 2001 (Smith and Tillema, 2001), where they separated the portfolio into four types, based on the use and conceptualisations of it in practice. The four types include training, reflective, dossier, and personal development portfolio. In their study they compare these four types of portfolio based on their goals and setting of use. In order to do so, they approached 89 portfolio users representing four groups of professionals on the basis of the context in which they used or were familiar with portfolios. This was done in order to explore the variations in their use of the portfolio. The methods applied were mixed as they both conducted a semi-structured questionnaire and in-depth interviews with the respondents. The questionnaire had 27 questions, and was based on a Likert-style design.

What Smith and Tillema (2003) found was that the four portfolio types vary in the way they are accepted by professionals based on three aspects; clarity, feasibility and trustworthiness. Differences between the four types of portfolio was found to be explained largely by the context in which the portfolio was compiled, such as whether or not assignments are mandatory or voluntary. Other differences are grounded in the uses the portfolio was put to, such as selection purposes or self-learning purposes. The most significant differences were found to be between the training portfolio and the reflective type of portfolio. Whilst the former type serves a mandatory purpose in a formal framework for developmental purpose, such as a course setting, this is in the latter type voluntary for purposes of selection. The lack of any formal framework in the latter type was found to have had an impact in the way in

which professionals saw aspects of explicitness, feasibility and trustworthiness. It was found that trust in the portfolio was strengthened when there was explicit criteria for the content of the portfolio, how to go about it and of how the users of the portfolio was to be judged by it. The type of portfolio most similar to the portfolio in the empirical setting of this study is the training portfolio, as it was part of a formal framework and had a clear purpose of development and learning.

Meeus (2006) conducted a literature review and established four modes of implementation of the portfolio in higher education. The first mode is found in admissions to higher education and revolves around the assessment of competencies acquired elsewhere by students applying for admission. The second mode is found during a higher education course and its purpose is for the supervision and assessment of the initial competencies of the student. The third mode is found on entrance into a profession, for use in connection. The fourth and final mode is found as a part of professional life for on-going professional development on the job.

He also discovered that there is an abundance of definitions and classifications of the term 'portfolio'. In what was at the time recent literature Meeus (2006) found at least 49 nomenclatures used to describe particular types of portfolio. In addition, he also found that many authors have attempted to make a classification of portfolios. In literature, he found 28 of these classifications. Of these classifications Meeus (2006) found particularly one worthy of universal acceptance. This classification is one that can distinguish between portfolios aimed at profession-specific competencies and portfolios aimed at learning competencies. Meeus (2006) argues that a classification of this nature can add genuine value in higher education as there are currently few other and better tools for supporting and evaluating the student's learning competencies. He continues, arguing that if the goal is for graduates to not only be professionally competent, but also capable of continuing to learn on a lifelong basis, the introduction of a portfolio of this kind is the recommended choice.

Dysthe and Engelsen (2011) conducted a study aiming to explore the diversity of portfolio models and practices in higher education by using Norwegian higher education as an example. In addition, they wanted to explore how macro-level influences, such as the Bologna related quality reform of Norwegian higher education have shaped the overall development of portfolio practices. In their study, they used a nationwide survey of portfolio practices, findings from a research evaluation of the quality reform and previously published case studies.

What they found was that the portfolios employed in Norwegian contexts often serve the purpose of both summative and formative assessment. In addition, they found that portfolios are closely tied to course objectives and course readings, and focus on students' understanding and ability to communicate. Because of this, Dysthe and Engelsen (2011) label this type of portfolio the 'disciplinary course work portfolio'. The type of portfolio identified by Dysthe and Engelsen (2011) has most features in common with one of the four types identified by Smith and Tillema (2003), namely the 'training portfolio'. However, one difference between these classifications is that Smith and Tillema's (2003) setting is professional and not disciplinary.

The disciplinary course work portfolio is found to mirror in many ways the traditional university knowledge ethos where teachers are primarily concerned with course content mastery and cognitive development. The portfolio appears as a collection of texts, feedback is provided on drafts and revision is expected. Dysthe and Engelsen (2011) found that both teacher and peer feedback was widely recognized as crucial aspects of formative assessment as well as being a common feature across courses that use the portfolio as the main mode of assessment. This is also in line with the requirements of the quality reform of Norwegian higher education that expected students to become more active in the teaching and learning processes, a closer follow-up of students through feedback, better distribution of workload, and varied assessment forms that integrated teaching, assessment, and supported student learning (Dysthe and Engelsen, 2011). For the purpose of meeting these requirements, the portfolio seems to be a good fit. Dysthe and Engelsen's study is particularly relevant for the purpose of this study, as it is based on a Norwegian context and it helps to shed a light on the portfolio practices common in Norwegian higher education, as well as giving a look into the importance of feedback in courses based on a portfolio design.

2.3 Summary of literature review

This section is dedicated to summarising the literature review and establishing the most important conclusions drawn from literature for the purpose of this study.

The summarisation of the literature review on student engagement is here strengthened with use of Christenson, Reschly and Wylie (2012), and their summarisation of empirical research on student engagement. Christenson et al (2012) states that there seems to be general consensus that student engagement is considered the primary theoretical model for

understanding dropout and promoting school completion, how engaged students do more than simply attending or performing academically but also put forth effort, persist, and self-regulate their behaviour towards goals, challenge themselves to exceed, and enjoy challenges and learning (p.v-vi). Furthermore, student engagement, regardless of its definition, is generally associated positively with desired academic, social, and emotional learning outcomes. Finally, Christenson et al (2012) established how student engagement should be seen as a multidimensional construct, which requires an understanding of affective connections within the academic environment and active student behaviour.

Christenson et al (2012) also addressed a number of "unknowns" in student engagement research, including how some researchers consider student engagement to be a "metaconstruct", or an organising framework, which integrates areas such as belonging, behavioural participation, motivation, self-efficacy, school connectedness and so on. This is contested, as others disagree, believing that engagement must have clearly defined boundaries. Although there is general consensus that student engagement is multidimensional, the nature of this multidimensionality varies.

Although Trowler (2010) found that student engagement often has been studied through large nationwide survey studies, the focus in this literature review was to show a variety of studies that has been conducted on the concept, and the empirical studies included was mostly focused on a smaller population. However, it is clear after having conducted a review of empirical research on student engagement that the survey and questionnaire design seems to be heavily favoured in student engagement research. This is also part of establishing, and maintaining, the conceptualisation of student engagement as a product.

However, this has been opposed, not only in conceptual contributions to student engagement research, but also in empirical works. Price et al (2011) suggests a conceptualisation of both feedback and engagement with a stronger emphasis on processual aspects and the role of both feedback and engagement as being part of a social process, and integrated in a wider socio-cultural context. Not only is this distinction necessary in student engagement practice, but also in research. This is something that was found to be supported by Zepke (2014; 2015), who argued that the mainstream approaches to student engagement research is often focused on determining the value of student engagement and seeing the concept as a list of indicators of educational success.

What is now known about student engagement research, is that it has often been dominated by a conceptualisation of the concept as a product. This is something which will be opposed in this study, as the view of student engagement is more focused on it being a process. In order to look closer into processual aspects of student engagement, what will be taken into account are influences of the wider sociocultural context, as suggested by Price et al (2011).

Similarly to the concept of student engagement, the portfolio has an array of definitions and ways of being applied. However, what is now known is that when used in the context of higher education, the portfolio often serves the purpose of being a mode of assessment. In a Norwegian context, as seen in Dysthe and Engelsen (2011), the portfolio often serves purposes of both summative and formative assessment.

What is now also known about the portfolio is that it can function as a course design structure, which is the course design in the empirical setting in this study. The gap in research which has been identified presents a need for more research on the link between portfolio as course design and student engagement.

3 Theoretical background and analytical framework

This chapter includes the theoretical background and analytical framework for studying student engagement in this study. First, sociocultural theory is introduced and explained as well as justified for use for the purpose of this study. Then follows the analytical framework, which includes parts of Kahu's (2013) student engagement framework, which has been part of the theoretical background of the study as well as influencing the nature of the analytical framework.

3.1 Sociocultural theory

Developed by Lev Vygotsky (Säljö, 2010), sociocultural theory relates to ways people interact with others and how the culture they live in shape their mental abilities. It grew as a reaction and an opposing view to the stimulus-response movement fronted by Pavlov (Säljö, 2010). One of the main aspects of sociocultural theory is the idea that how people interact with others and the culture they live in shape their mental abilities. Furthermore, a basic premise in sociocultural theory is that learning and assessment practices are deeply embedded in social contexts and that different contexts afford certain practices and constrain others (Säljö, 2010).

Another aspect of sociocultural theory is what has been labelled 'the zone of proximal development' (ZPD), which refers to the idea that when people are allowed to cooperate with more capable peers, their own performance is usually much better than when they work alone (Säljö, 2010). The ZPD notion is related to 'scaffolding', where more capable peers or partners will 'scaffold' activities to less experienced peers through communicating via hints, suggestions and tips of how to interpret and carry out a task (Säljö, 2010).

In sociocultural theory, social interaction and relations are seen as necessary for learning. This is interesting to apply for the purpose of this study, as what will be investigated are semi-structured interviews conducted with students in groups, where they, among other topics, discuss their experiences with group work and interaction with other actors involved in the course (see appendix 1 for interview guide). As interaction is an important part of

sociocultural theory, understanding more of the relations important for student engagement can be done by use of a sociocultural frame.

Using sociocultural theory is relevant and useful partly because Vygotskian ideas have become important for approaches to teaching and learning that emphasise the situated nature of knowing and the necessity of actively engaged learners (Säljö, 2010), which is also emphasised in this study. Further, the notions of ZPD and scaffolding are relevant for the purpose of this study as the participants in the empirical setting conducted a lot of work in groups. The data set provides an opportunity to investigate whether scaffolding took place in the students' work with the course.

3.2 Analytical framework

The analytical framework was formed based on a blend between aspects of sociocultural theory and parts of Kahu's (2013) student engagement framework. Sociocultural theory comes especially into play in the discussion in chapter 6 when discussing what relations are important for student engagement, while Kahu's framework has been of use when considering aspects related to student engagement. In addition, Kahu's framework has influenced how how to investigate psychosocial influences on student engagement.

To answer the first research question of the study, what needs to be defined is the concept of student engagement, as well as establishing different forms of student engagement. In order to do this, particular aspects of the portfolio-based course were to be investigated further, such as the task and activity structure, the nature of feedback and the assessment format. The point of view is the students' and it is their experiences with the course that will be analysed. In order to do this, central aspects of the portfolio will be examined. This will allow for a closer look into how this type of course design stimulates student engagement and what forms of student engagement emerges. What follows is the analytical framework for studying student engagement.

3.2.1 Student engagement

Due to the established ambiguous nature of student engagement, defining the concept may be challenging. The definition of the concept is for the purpose of this study threefold, firstly it has been defined with inspiration from Kuh and Hu (2001) and Coates (2005), and relates to

the efforts by which students engage with and participate in educationally purposeful activities which research has shown as likely to lead to high quality learning. Secondly, student engagement is seen as the efforts by which students become, and remain, engaged through peer-communication and group work. Thirdly, student engagement is considered to be of a processual nature, which relates to other individuals and aspects of courses, as students engage **with** something.

For the purpose of this study it is not only important to define what student engagement is, but it is also important to take into account what students are engaged with. The main areas of focus in analysis are examining students' engagement with the different aspects of the course, and actors involved. The aspects include the different activities of the course such as lectures, tutorials, feedback and feedback structures, the assignments, assessment format and group work. Actors involved include peers and teachers.

In order to understand students' engagement with the different aspects of the portfolio-based course, Kahu's (2013) framework has been used. In particular, Kahu's notions of affect, cognition, and behaviour, which are described in the following section. Students' engagement with actors is also touched upon in parts of Kahu's framework, but becomes even more evident when drawing on perspectives from sociocultural theory and examining relations.

Kahu's student engagement framework

Kahu (2013) has been used as part of the theoretical background in this study in order to create a bridge between the literature review and the analytical framework. Kahu's (2013) study focuses on the four dominant research perspectives of student engagement consisting of the behavioural, psychological, sociocultural and the holistic perspective. In her text, Kahu (2013) presents an overview of research on student engagement and how to understand the different components that play a role in existing student engagement research.

The framework by Kahu (2013), as seen in figure 1, has the student at its centre and shows how certain actors and structures involved with student engagement in higher education play a relational part to the concept. This includes structural and psychosocial influences, both from a university and student perspective as well as proximal and distal consequences, which are related to academic and social aspects.
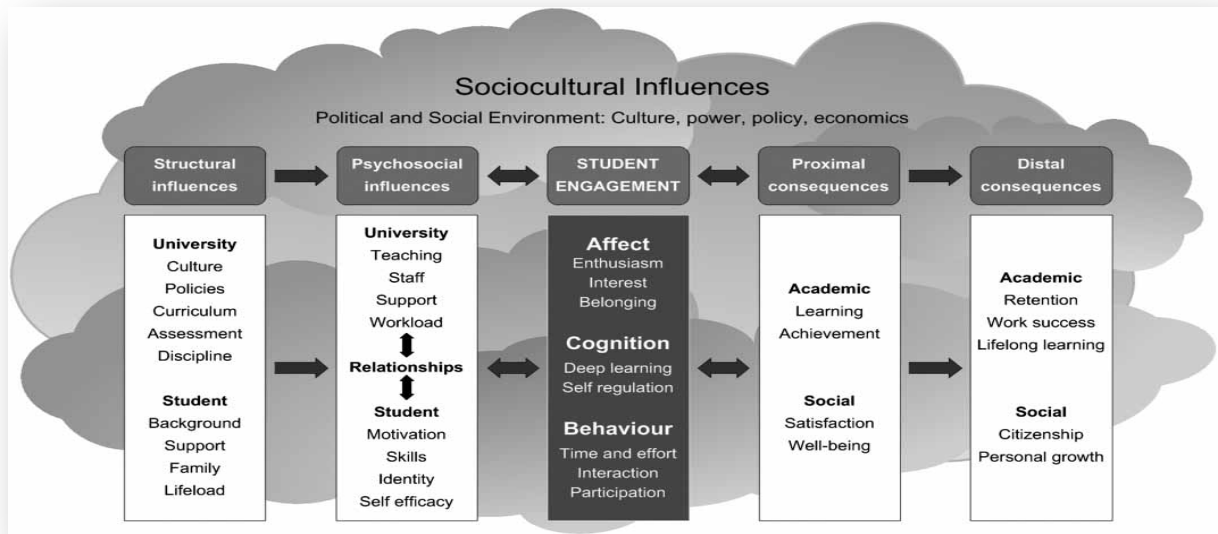
Figure 1 – Student engagement framework by Kahu (2013)

However, using Kahu's full framework is unnecessary for the purpose of this study as it presents itself as both too broad and too specific. It is too broad in the sense that, with the data already having been collected, as will be elaborated on in the following chapter, the access to participants and therefore producing more data is impossible. On the other hand, it is too specific in the sense that some of the concepts presented, such as self-efficacy, become points of focus too narrow to investigate for the purpose of this study.

Therefore, what will be used as an inspiration from the framework created by Kahu (2013) is the relationship between psychosocial influences and student engagement, and in particular the links between organisational structures, such as course design, and the experience of students with relation to student engagement (as seen in figure 2). Kahu (2013) will especially be used as a tool to discuss what is found in the analysis.

Kahu's study has been important to shed light on how the topic of student engagement could be approached in a qualitative study and is relevant because it provides an

Figure 2 – What parts of Kahu's (2013) student engagement framework will be used in this thesis

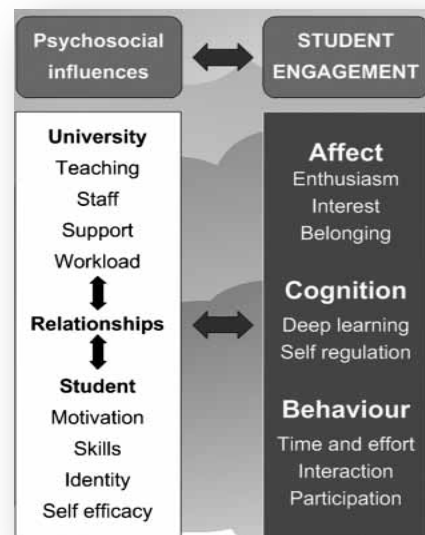opportunity to examine what happens with student engagement when a portfolio-based course is the context as the framework gives prominence to wider socio-cultural influences. Rather than positioning macro influences as the first link in the chain, the entire process of student engagement is seen as embedded within wider social, political and cultural discourses. Student engagement is thus seen as more than just an internal static state, but rather an individual experience embedded within a socio-cultural context and shown as influenced by characteristics of both students and institutions. A key strength in envisioning engagement in this way is the acknowledgment of the lived reality of individuals, while at the same time not reducing engagement to just that. It also supports a processual view of student engagement.

Kahu's framework is used because it is very thoroughly carried out and it helps shed light on how complex the field of student engagement is, in addition to bringing forth the dominant perspectives on the concept in higher education research. Additionally, it shows how student engagement can take many forms and plays a lot of roles in higher education as well as presenting what the field around student engagement looks like.

The purpose of this thesis is partially to contribute by understanding more of the relational aspects of course design and student engagement, which is also illustrated in Kahu's framework. In order to investigate this in this study, the goal is to look into the teaching, workload and support part of the empirical setting, by looking at the portfolio as a particular design with specific activity and assessment structures.

Blending Kahu (2013) and sociocultural theory to inform about the theoretical background of the study is done by looking closer at specific relations in Kahu's existing framework, particularly those related to influences of a psychosocial nature and student engagement. As this study places a special interest in the relations between course design and experiences of students, using these two perspectives is highly useful. In some previous research, sociocultural theory has been applied to investigate what influences student engagement.

What this thesis will shed light on and investigate is what aspects of the portfolio enhance student engagement and what forms of engagement stem out of a portfolio-based course as well as establishing the relations important for student engagement. The reason why these approaches are employed in this thesis is to investigate student engagement, and studying student engagement as embedded in part of a particular course design. Choosing this theoretical background is largely due to the assumption made in this thesis that student

engagement does not have to be seen as an outcome, or a product, as it often has been in existing empirical research.

What follows is an overview of forms of student engagement, written up with influence from Kahu (2013), and her student engagement framework.

Affect

In this section, forms of engagement are seen as students' perspectives on interest and emotions, and what role this plays in relation to student engagement. Interest, and the role interest plays with relation to student engagement is viewed as the thoughts and experiences of students related to the interest they take or the interest they have in working with the course and aspects of the course. It also encompasses how the students let interest guide them in choosing topics for their assignments. In addition, interest relates to students' experiences with the course and expectations they may have had related to how interesting they felt the course was.

Further, students' emotions regarding the course in general and certain aspects of the course in particular are investigated. Positive emotions could arguably be said to include feelings of happiness, contentment, that students feel the course and contents of the course is what they expected and a sense of fulfilment and being able to carry out expected work in the course and still feeling good. Negative emotions include being sad, angry or generally upset with the course and contents of the course. This may include students feeling that they are not able to complete required works in the course and being unhappy with either themselves or the course overall, or aspects of the course such as activities or assignments.

As establishing what affects student engagement negatively is not the main aim of this study, negative emotions students might feel towards the course, or aspects of the course, are for the purpose of this study considered part of what might be challenges for students to remain engaged and will be discussed in a separate section in the analysis.

Cognition

In Kahu's framework, cognition has to do with students' deep learning and self-regulation. For the purpose of this study, what is considered to be the forms of engagement in this section includes students' experiences with the domain-specific knowledge and content of the course.

Students' engagement with domain-specific knowledge is viewed through engagement with procedural and conceptual knowledge.

The cognition part of Kahu's framework can be investigated through looking at the extent to which take responsibility for their own learning process, for group exercises and for each other's learning process in group work. This includes how students seek out information to further understand the information, activities, assignments, and group work in the course. If students had to read up on particular topics or do other things in order to understand, students are seen as taking responsibility for their own learning. In addition, actively seeking out feedback and attending lectures and tutorials is here also seen as taking responsibility for their own learning.

Therefore, the focus here is to investigate students' experiences with the way learning took place and how they felt they learnt domain-specific knowledge. This is done by examining statements from students where they are discussing how they felt the content of the course was conveyed and their perspectives on whether or not these processes of learning were useful.

Behaviour

Drawing on the work by Kahu (2013), the behaviour notion includes the concepts interaction and participation. For the purpose of this study, interaction is viewed as what students do to interact with involved actors in the course, both teachers and peers. The concept of interaction is especially important when investigating the relations within the course, and will therefore be of use when answering the second research question related to relations in the course in chapter 6.

Students' interaction with teachers is especially visible through their thoughts about the accessibility and approachability of teachers whilst interaction with peers is seen through students' thoughts about group work and peer-review structures, as well as seeing if and how students learnt by the help of their peers (scaffolding).

The participation notion is mainly centred on the activities and assignments in the course and is closely linked to the notion of interaction. Participation in activities relates to students' attendance, whilst participation in assignments relates to the students' working on and completing assignments. Students' assessment about the usefulness of activities and

assignments is central. Finally, how students applied feedback and what they did with the feedback comments is considered to be efforts of participation.

3.2.2 Relations

In the sociocultural approach, relations and communication are seen as prerequisites for learning, which is a stance applied in this thesis. This section will aim to define how relations are viewed in order for the second research question of this study to be adequately investigated and answered.

Relations are here considered to be aspects both within and outside the course that affect student engagement. Within the course, understanding the relations between activities, assignments and actors, such as teachers and peers, is important. Seeing how students interacted with peers and teachers in the course is interesting to shed light on sociocultural aspects such as communication and cooperation.

Looking for signs of peer-mediated learning and scaffolding is necessary when investigating relations between students. Peer-mediated learning is investigated especially by seeing how students learn and work together and scaffolding is investigated through seeing if, and so how, students relied on the skills and strengths of others in order to enhance their own learning. When investigating the peer-review structures of the course a particular emphasis is put on seeing how students received and gave peer-feedback. Relations between students also include accessibility and working and learning together. When investigating relations between students and teachers a particular emphasis is put on feedback provided by teachers and students' perceived accessibility/approachableness of teachers. In addition, teachers' influence in activities and assignments as seen by students is examined.

Finally, aspects outside of the course are also examined. Of a particular interest is seeing how aspects outside the course acted in relation to what was taking place within the course, such as timing of assignments within the course and possible collisions with assignments and deadlines in other courses.

3.2.3 Portfolio

The portfolio serves the role as the context in which this study takes place. As has been made clear in the literature review, the portfolio has an array of definitions that vary with the

assigned purpose of the portfolio. For the purpose of this study, portfolio is defined with inspiration from Smith and Tillema (2003), Dysthe and Engelsen (2011), and Brown (2003) and is viewed as disciplinary-based course work, often taking place through a range of assignments. The portfolio's main purpose is the ability to highlight the core professional knowledge, skills or competencies a person has acquired throughout a course and is collected during the time frame of a course as a representative sample of students' work.

Further, the portfolio is a course design, and assessment structure, where the grade is provided at the end of the course based on the collection of work conducted by students throughout the course. This work can have been carried out in both in written and oral form, as is the case for the course examined in this thesis with written assignments and an oral presentation. It is also important to note that in the context subject to study in this thesis, the portfolio serves a function as both the design structure of the course and the main assessment format. A portfolio-based course is a course based on the portfolio being the main mode of assessment and where the final grade is given at the end of the course based on the collection of students' work throughout the duration of the course.

Another key aspect of the portfolio when used for course design and assessment purposes in higher education is feedback. The importance of formative feedback is profound as it is what can help the students improve their existing work and guide them. A lack of grades throughout the course means the need for indications of their work and guidance in relation to how they improve their work is important.

4 Methodology

4.1 Research design

The project is of a qualitative nature and is affiliated with a bigger research project, QNHE. The section of which this thesis is based on is Part C of that project, which looks at curriculum design and course development, teaching and learning activities, and feedback and assessment practices in Norwegian higher education (QNHE, 2017). The overall goal of the QNHE project is to produce in-depth knowledge about process quality in educational practices. Part C of QNHE is particularly focused on teaching and learning activities and the research question particularly relevant for my study is; 'what forms of teaching and learning activities are used in the programs and courses?' (QNHE, 2017).

This study is of an explorative nature, as it seeks to investigate the link between aspects of a portfolio-based course and student engagement and has a case study design. An inductive approach was used.

Arguing why the case study design seemed to be a good fit for this study partly relates to time constraints and limited resources when carrying out research on the master's level. Another reason is grounded in Creswell's (2014) argument that the case study gives the researcher the opportunity to develop an in-depth of analysis of a case. In addition, it seemed to be a highly appropriate design to investigate the existing data set which will be used for analysis.

Finally, a case study design, and more importantly staying within the qualitative sphere was important in order to oppose more traditional ways of looking at student engagement, namely through larger, quantitative survey studies. As the hope is that one of the main contributions of this study is to strengthen the view that student engagement can be seen as a process rather than a product, a study of this nature and with this particular design is a good fit.

Because of how student engagement is viewed, framed and designed in the context of this study through a focus on interaction with activities, assignments, teachers, and peers, looking at a portfolio-based course is useful, because it has a certain type of assignments, and group work structures. The portfolio-based course seemed a good fit for the purpose of this study, and reaching the aims of this study, as it provided an insight into what students engage with, both in relation to activities and assignments, as well as teachers and peers. As a result, it

provided an interesting opportunity into looking closer at what can potentially engage students.

The reason why the empirical setting was selected to be the basis of this study was because of the portfolio design and structure of the course. The portfolio was the main mode of assessment, which provided an interesting context for study. In addition, the course consisted of a large number of assignments, which was another interesting aspect for closer investigation. The data collected through the QNHE project, and the complexity and detail of it, gave a promising data set that seemed like a good fit for the topic of this study.

4.2 Empirical setting

The empirical setting of this study is a one-semester biology course as part of a bachelor degree at a Norwegian university. The course had 27 students and was portfolio-based with six individual assignments and three group assignments, totalling nine assignments in the course. Within the assignment structure there were individual textbook assignments, an individual open assignment and group assignments. In addition, there was an oral presentation, peer-review, and a reflective piece to be written on the portfolio.

Each of the three group assignments was introduced by individual teachers who gave a lecture and a tutorial about the topic of their assignment as well as information on who was in charge of providing feedback on the students' drafts. The groups for the group projects were predefined by the teacher in charge of organising the course and remained fixed throughout the duration of the course.

The final grade in the range of A-F was based only on the final portfolio, not on any intermediate products. The grade was individual and based on a weighted average of the different grades on each of the portfolio elements.

As part of the portfolio design, formative feedback was provided to the students on a regular basis, both in written and oral form. The oral feedback was given through scheduled drop-in feedback sessions with the teachers. Students had the opportunity to submit draft items along the way, and thus receive specific feedback on each item. Written comments, oral feedback and discussions on development or challenges of the portfolio were essential elements in the course.

Aim, content and learning outcomes

The course was an introductory course to ecological theory covering an array of themes within its domain. A primary goal of the course was to develop students' ability to think scientifically and to use the scientific literature to clarify ecological questions. Within the course there was a strong emphasis on quantitative analysis and writing was implied. Further, the course aimed to establish a solid basis in ecological theory and demonstrate the social relevance of ecology.

The learning outcomes of the course included the requirement that students are to know basic information about ecology on their expected level and how to apply the knowledge they acquire throughout this course. In addition, there is a strong focus on being able to create coherent written texts and present data in-text.

Participants

The total number of students in the course was 27. Of these, the students taking part in the QNHE project were a total of nine, made up of three separate groups of students that worked together on the group projects. Each group had three group members. In each group there was one male participant and two female participants. An overview of the student groups follows in 4.3 (figure 3).

The participants gave consent to be recorded during group work, course activities and interviews as well as allowing that the documents which produced during the course could be collected and used. The data used for analysis in this study were interviews conducted towards the end of the course by one of the QNHE researchers.

4.3 Methods

The main sources of data that analysed for the purpose of this thesis are the semi-structured interviews conducted with the students in their groups. These were longer interviews that lasted about an hour where students were questioned about their general experiences with the course and aspects of the course (see appendix 1). Students were encouraged to bring forth any thoughts they may have had on improvements they would have made to the course if given the chance. The semi-structured interviews were conducted towards the end of the course.

The semi-structured interviews totalled a number of three, one for each of the groups that participated. The interviews were conducted in English. For Group A the total number of pages in the transcript was 32. The transcript of the interview with group B and C were 46 and 37 respectively. Below follows an overview (figure 3) of the student groups.

Overview of student groups in semi-structured group interviews	
Group A	**Student A1: female**
	Student A2: female
	Student A3: male
Group B	**Student B1: female**
	Student B2: female
	Student B3: male
Group C	**Student C1: female**
	Student C2: female
	Student C3: male

Figure 3 – Overview of student groups in semi-structured group interviews

The reason why the semi-structured group interviews were chosen as the main source of analysis was due to author's familiarity with the data sources and the promising outlook of the interviews with regards to content. The interviews provided a unique look into students' experiences with the course due to well-constructed questions posed by the QNHE researcher within their framework. However, there are some limitations to the interviews as their main focus is neither the portfolio as course design or student engagement. Despite this, the contents of the interviews were a good fit for this study.

The data set used for analysis has been collected before work on this thesis began by the QNHE project members. The methods which have been used in the data collection of the larger project include observation, both of the student work during the course activities and of students' conducting group work, interviews, curriculum analysis and field notes. The observations and interviews have been recorded both as audio and video and have then been transcribed. The interviews include semi-structured group interviews with students, individual pre- and post interviews with the teacher in charge of course coordination as well as interviews with three of the other four teachers in the course. The larger data set served as

background data which helped to make sense of the interview data used for analysis for the purpose of this thesis.

4.4 Data analysis

The process of analysing the data began with a process of coding. By advise from Creswell (2014), who states that coding can be a time-consuming process, the coding software QSR Nvivo was used in order to simplify the process and create an organised overview of codes. Coding took place in two rounds where different sets of codes were created.

The first round of coding was an inductive exploration of the data, which served the purpose of creating and overview of the themes students discussed in the interviews. In the second round of coding, the most relevant themes for analysis were identified and systematically applied to the data.

Following the coding process was the identification of themes and creation of descriptions for these themes. Then, seeing how these themes and descriptions interrelate was the next step. The final step in this process of analysis included interpreting the meaning of the said themes and/or descriptions. Throughout these steps the accuracy of the information was considered and validated, a process which is also emphasised by Creswell (2014) as important. Finally, the relevance of the themes and descriptions and the findings within them was determined.

Throughout the process of coding and creating themes, memos were written to easier access memories of the process and thoughts that occurred. These proved to be valuable, as first impressions and thoughts are easily forgotten if not written down. As the data was collected as part of a larger project and the author not being the one who collected the data, the chance to write memos and logs whilst conducting interviews and collection data was missed. However, familiarisation with the data set made the gap between the collection of data and analysis thereof feel smaller and the interviews used for analysis were made full use of for the purpose of this thesis.

4.5 Quality criteria

Working with second-hand data

Having not been responsible for the collection of data, it is still important to make sure the data set used for this thesis which the author had been granted access to by the QNHE project participants is both valid and reliable. Due to the affiliation with the QNHE project and having been the one who transcribed the interviews used for analysis in this thesis, the author have had access to the raw and untouched data. This is an important step in order to make sure the data has not been altered in any way, thus enhancing the validity.

As one of the supervisors of this thesis was in charge of collecting the data, validity and reliability, as well as transparency was ensured. This was also helpful for the author as this meant that asking questions and receiving answers about anything related to the data set was possible.

Addressing the topic of why second-hand data collected in the QNHE project was used for the purpose of this thesis was much because of my affiliation with the project as a research assistant. After being given the insight into the project and the data collected as part of this project, an interest was found quickly and it was clear to see that the data could be used for more than just what the QNHE project had in mind and encompassed. Therefore, the choice was made to use the existing data rather than collecting data alone.

In addition, through being somewhat familiar with the data set it was clear that there was a possibility for it to be applied to the niche in which this thesis exists. A clear need for a study of this nature was also found, after identifying a gap in literature. Consequently, I began looking at the data set when transcribing with a different view and saw possible ways the data could be used that was not encompassed by the QNHE project. It was the project itself that inspired me to find my niche and guided me in determining the direction in which I wanted to take my thesis.

Validity, reliability, and trustworthiness

In order to address issues of validity and reliability, following advise by Creswell (2014), using rich, thick descriptions to convey the findings may strengthen how realistic results present themselves. Further, acknowledging a possible bias and pre-assumed knowledge due to familiarity with the content of the interviews and data set as a whole is important in order to enhance the transparency as well as issues of validity and reliability.

Another step taken to make sure nothing has been missed and thus ensuring the overall quality of this study is how transcripts have been revisited numerous times in order to avoid mistakes. Several rounds of coding the transcripts have also improved the validity and reliability of the thesis. Although this was a time-consuming process it is in the opinion of the author that this is an important activity to conduct in order to avoid any mistakes that could have been avoided by simply making the time.

The concept of trustworthiness, as proposed as an alternative to terms of quality criteria in quantitative research by Lincoln and Guba (1985, cited in Bryman, 2012), has here been taken into consideration in order to ensure the quality of this study. By keeping in mind thoughts about credibility, transferability, dependability and confirmability, the quality of this study is enhanced and ensured. These are all issues of quality and are ensured through transparency, thick descriptions, a clear presentation of findings and general considerations of openness. It has also been a goal of the author that the writing style is of such a nature that the study is understandable.

Ethical considerations

In relation to ethical considerations, most of these had already been put in place by the QNHE researchers and within that project. For example, all participants were asked for their consent before the data collection process began, no recordings were used in which other students are visible who did not give their consent. In addition, the students had the opportunity to withdraw from the study at any point in time and they were informed that all the data would be anonymised.

However, although the participants had been informed about their right to anonymity, it was still important that this remained an important factor in this thesis. Therefore, efforts have been made to avoid the risk of recognition by limiting the flow of information about the participants and about the course as a whole in order to avoid identification. This was done partly by limiting the amount of information about the course in general, to avoid it being identified when searching for aspects of the course mentioned in this thesis.

In addition, limiting the information about the groups, and participants in the groups, was done in order to avoid the risk of identification of the participants. Specific information about their background has been either taken out or limited to a point where a risk of identification has been minimised. The same goes for the teachers in the course, and particularly the teacher

in charge of coordination. As a participant in the QNHE project, this person is too governed by the promise of anonymity. Therefore, limiting information about this person and about the role served greatly limits the chance of identification. Before data collection, the necessary NSD approval was obtained by the responsible researchers and strict rules of data protection and confidentiality were implemented in all steps of the research project.

5 Analysis: investigating forms of engagement

The aim of this chapter is to shed a light on the forms of student engagement that emerge in a portfolio-based course and thereby providing an answer for the first research question of this study, which asks what forms of engagement emerge in a portfolio-based course. The chapter is centred around the activities and assignments in the course, and this is due to how both of these aspects of the course show strong ties to the sociocultural background of the study, as they are relational and emergent, with people, mediating artefacts and support structures.

5.1 The influence of interest and emotion

The influence of interest and emotion with regards to student engagement in a portfolio-based course was found to be important as it affected their engagement with activities and assignments in the course. The aspect of interest was found to play an important role in guiding students' choice of topics in their open assignments, but the process by which this choice was made varied among the students. For some, this was found to be something they had thought about for some time.

> *"By observing in nature and so…about, observing birds. And I thought about it a lot. And then there was this course, and this assignment, I said okay if I can study this that would be great."* (A3)

However, for most of the assignments teachers predefined the topics. Students expressed how they felt that in addition to the topics being predefined so was the way assignments should be structured and written.

> *"(…) For example climate change, it's a very interesting subject and I love reading and writing about it, I would have loved more to write about it if they just, if he didn't specify that you're going to make a table, for example, using these expressions (…) It would have been better for me if he could just say write something about two pages, or for example, about how climate change affects the ecosystems"* (C2)

It was found that students experienced that the teachers' narrative in the assignments was dominant and that this led their own freedom and independence in assignments suffer. Predefined topics of assignments were not found to be the main issue, but rather the students' experienced limitation of freedom and independence in how to structure and write assignments.

> *"Because it's…then you get stuck in a way so like what does he mean by that expression and you kind of get stuck there, in his thoughts, instead of actually being able to write about your own perceptions."* (C2)

Interest also played a part for the students whom the course had an elective status. For these students in particular, choosing the course was often down to interest. This interest was sometimes in the knowledge content of the course, or in the structure and design of the course itself. Given that in courses where the portfolio is the main mode of assessment, and there being no exam in such courses, students found the course to be interesting and drawing them in on the promise of no final exam.

> *"Okay, this sounds nice and there is no exam, so I can probably do this."* (C2)

The students choosing the course often had some expectations, especially with regards to the course structure. Whether these expectations matched their experiences varied somewhat.

> *"(…) I just took this and…I didn't have that many expectations. (…) I liked the set-up of the course in the beginning. I thought it would be interesting."* (B3)

The role of emotions for the students' engagement in the course was particularly evident in relation to the feedback provided throughout the course. It was found that if students received feedback they experienced as either problematic or bad, or they themselves experienced negative emotions towards feedback, it would affect their engagement. Negative emotions was found to lead students to doing less with the feedback they received and perhaps not attend as many feedback sessions as they could have attended.

> *"But the good parts that he said (…) that's what kept me going.* (B1)
>
> *Yeah, 'cos I got none of that and I just…* (B2)
>
> *Yeah if I hadn't gotten any like "oh this part is nice" I would have just said well…(…) Go…go away"* (B1)

The nature of feedback, what feedback given in person and feedback comments, and its influence on students' emotions should not be overlooked as it was found to affect students' engagement. In fact, it was found that whilst positive emotions might act as an enhancing factor of student engagement, negative emotions might do the exact opposite and can in turn lead to disengagement among students.

> *"How is this always happening? And then I just, no, not always. And for me I would just sit down and I want to cry because it didn't give me anything (...). So I stopped putting them in 'cos I don't want assignments that make me feel bad. 'cos I won't actually do the assignment if I'm feeling bad"* (B2)

Both aspects of interest and emotions are crucial to understanding student engagement and to tackle possible challenges for students to remain engaged. If students are allowed to express and follow up on their interests, they will become more engaged as they are doing something they personally like and have a particular interest in. The same goes for emotions as happy students seem to be more prone to being engaged than those who are experiencing negative emotions as a result of, or towards, activities and assignments in a course. Therefore, these aspects need to be kept in mind by teachers and others involved in courses when designing whole courses, deciding on assignments and delivering feedback.

5.2 Students' engagement with the knowledge domain

This section is dedicated to presenting the findings to students' engagement with the knowledge domain of biology. The students' engagement with the knowledge domain took place within various dimensions. These dimensions can be categorised as conceptual and procedural knowledge. Students are required to learn theories, models and conceptual knowledge in the domain whilst also learning more about relevant software, simulations and aspects relating to procedural knowledge.

How students engaged with the different types of knowledge varied and will here be presented. What will also be highlighted are what aspects of the course students experienced to facilitate learning of the different dimensions of knowledge. Although students did not use the terms 'conceptual' or 'procedural' knowledge, the quotes can still be used to illustrate that learning knowledge that lies within the different domains took place in the course.

Students' engagement with, and learning of, conceptual knowledge was found to take place especially through working on the assignments in the course. However, what assignments students felt were the best for their learning varied. For some students, the textbook assignments were experienced as what provided the best opportunity for learning.

> *"Yeah, maybe more [from the] textbook assignments about bio-diversity for mutation, how we're gonna preserve species and so on because I would then maybe [do] my PhD on this subject, preservation of kind of fish, disappearing, endangered species, so it was quite interesting for me."* (C1)

Other students saw the open assignment as being what fostered their learning of conceptual knowledge the most.

> *"Surprisingly I've felt I've learnt the most during the open assignment (...) I had to read up on all things from bio-remediation to aquaculture to like anything else and how it all interacts (...) like learning how it all fits together. And that was a lot more of a learning experience than going over like "okay, now we're gonna look at this part of biology, but with statistics"."* (C3)

Students choosing the topic of their open assignment freely was found to have a positive impact on their engagement with this particular assignment and thus the learning process.

> *"(...) Because I chose a subject for, on what I want to work in the future. So I learn a lot of things on my terms, I want to study."* (C1)

It was also found that it was not necessarily the assignments in themselves that provided the best opportunities for learning, but rather the research process behind the work done on the assignments.

> *"Yeah, I'm not really sure what I learnt the most from. But I think it was actually the research process from, for the different textbook assignments. But it wasn't from the book, it was stuff I had to read (...) To understand the book."* (C2)

Although students generally agreed that the assignments provided the best opportunities for learning in the course, it was found that students saw the number of assignments being so big because of the low number of lectures in the course. Students were unsure whether this provided a better opportunity for learning than having more lectures in the course would.

"I think we've learned more, or we've learned something from working in groups but I'm not sure that I've learned more from writing the textbook assignments than I would have from having [a] lecture." (A2)

In addition to individual assignments, group working processes were also found to provide good opportunities for learning. However, the learning that took place within the groups was not only limited to learning of conceptual knowledge, but also the learning of skills and methods.

"The methods and stuff I think I learned the most from the group works. (...) But for the content I learned the most from the open assignment." (A3)

The reason why assignments and group work were seen as better opportunities for learning conceptual knowledge than the lectures in the course might be due to students' experience of a discrepancy between the lectures and the assignments in the course. This was found to particularly relate to the textbook assignments in the course, and the contents of the lectures.

"When he lectures he doesn't use the book himself, so it's kind of hard to realise what he wants to focus on." (B1)

In students' learning of conceptual knowledge, assignments and group work was found to be particularly important, especially because of students' active role in the work with the assignments. In order to complete work on assignments and group work students have to be active, and this requires their engagement and enthusiasm.

Whilst conceptual knowledge focuses on disciplinary content and the learning thereof, procedural knowledge involves learning ways by which you work within the domain, and learning the tools to carry out this work. This includes learning about central skills and tools.

One of the skills students saw as valuable learning in the course is the ability to work in groups. In addition to this particular skill, learning the skill of writing was also central in the course. It was found that students throughout the course experienced that they learnt more procedural knowledge, and how to do things in biology, than conceptual knowledge.

"I think we learned more how to work to work than ecology. (...) I didn't learn a lot about ecology. Not a lot. But I learned how to work and some methods. (...) And also to go out and research and write. (...) It's a lot of writing so we write a lot. But we don't learn so much."(A3)

It was found that working in groups encouraged learning of procedural knowledge more so than conceptual knowledge. The group working structures were found to be important for the students in relation to their learning of softwares, as well as providing opportunities for peer-mediated learning, especially through discussion.

> *"Because then [in group work] there were programmes that you haven't used before and also you learn a lot about, with talking to people."* (A2)

Students see learning of both conceptual and procedural knowledge as being part of a process in learning biology, and that it is an ever-evolving and moving process of learning throughout the duration of their studies.

> *"We've picked up a lot of basics and it's like the ever-evolving thing of reading biology is learning how to find information, how to use information, how to phrase information. And that's just been (…) like a development process throughout any course we take. This is similar, and I can't think of like one subject that was like "this was amazing, I learnt this fact"."* (C3)

Although students did not separate between the learning of conceptual and procedural knowledge by a conscious effort, it was found that what provided the best opportunities for learning in the course, as experienced by students, were the different assignments. In addition, working in groups provided good opportunities for learning conceptual knowledge as well as procedural knowledge in the way that students saw working in groups as a valuable skill for their future lives as students and in employment situations ahead.

5.3 Students' efforts to learn

The focus in this section is on presenting findings related to the students' engagement with their own learning, and their efforts to learn in the course. This was found to take place especially through students' attendance at, and interaction with, activities. In addition, using feedback and seeing what aspects shaped students' engagement with assignments is also explored.

5.3.1 Attending activities

One way students are seen to engage with their own learning in the course was through attending scheduled activities. It was found that students did not attend that many of the scheduled activities. However, this was not found to be of any particular hindrance to their learning as students reported that they did not feel like they missed out on a lot of valuable information by not attending the scheduled activities.

With regards to the lectures, what some students did rather than attend them in person was that they looked up the lectures online to see if they were interesting.

> *"I didn't attend that many and I just looked up the lectures afterwards (...) to see if there was something interesting in them"* (B3)

This is something students were found to appreciate as it gave them the opportunity to look into the lectures in their own time and review them for their usefulness and possible value in relation to the assignments in the course, and for information that could help improve their final grade.

One of the prerequisites for students attending activities and interacting with was found to be how they needed to see their usefulness and value. If students did not experience that activities were neither useful nor valuable, especially in relation to their final grade, they would often choose not to attend. With regards to lectures, it was found that if students did not see the usefulness of the lectures' content in relation to their assignments and their final grade in the course, this would affect their attendance and engagement with the lectures.

> *"Towards the grade, it was more or less a waste of time."* (B3)

As the number of lectures in the course was relatively low, it was found that students thought the course could have benefitted from having more lectures. This is particularly because of how, for some students, lectures were seen as an important arena for learning.

> *"I'm a person that likes to go to lectures. (I) use the lectures as a sort of repetition from what I've been reading in the book. (…) And also indication of what is the main focus of the person who is teaching this. For me the lectures were important to actually learn anything. (…) And he (the teacher) was just "oh", he hadn't thought about that people actually learned anything from lectures. (…) And I was just…yeah I do."* (B2)

Because of the low number of lectures, and the lectures being so far apart, students did not see the purpose of preparing extensively for them in advance.

> *"When it's just one lecture, one week and there was three weeks without anything, you are not that into how you are going to work around the lectures."* (B2)

Attending tutorials was for some students found to be a problem related to coordinating for the whole group to join due to different schedules and collisions with other courses. However, students experienced attending the tutorials as beneficial as they found them useful. As with the lectures, students appreciated how the tutorials could be found online and that they could access them when they had the opportunity to do so, rather than attending the scheduled activity.

> *"(…) If I want to find it, again, like now. (…) I can go watch the video but like the…I can not go again in the class."* (A3)

For the feedback sessions, it was found that students did not attend many individual sessions, but most of the groups attended at least one joint feedback session. Attending the feedback sessions was particularly an issue as they often overlapped with other obligations. These obligations were not only related to activities in other courses but also private obligations such as work and collisions with other courses.

> *"And it's always been like one day, that whole day. (…) Then nothing for three weeks or something. (…) So it's not always good for everyone."* (A2)

The main problem experienced by students when not attending feedback sessions was how they missed out on the opportunity to get thorough feedback on their drafts. It was found that if they did not submit drafts to receive feedback on by the feedback deadlines, they were often left without feedback.

> *"Yeah, and then we are quite free, we don't have any feedback, just…yeah."* (C1)

Similarly to students' view of the lectures, it was found that if students did not see the usefulness of attending the feedback sessions, they would choose not to attend. This was found to be particularly due to the reputation of the feedback sessions among the students, and how students expressed that peers' experiences with the feedback sessions shed a somewhat negative light on the sessions.

"I felt like I don't want to go to a…feedback session where I have to sit and talk to him 'cos I've heard many others, they say they have been talking to him and he just sits there and nods and agrees and nothing happens. And I just "no, I'm using this much energy on this topic" (B2)

It was also found that students' emotions, and a sense of intimidation in the feedback sessions might explain why they did not attend that many feedback sessions.

"But I feel intimidating sitting there like…(…) "Excuse me, can you help me because…" (…) I'd rather not." (B1)

Students seeing usefulness of attending the scheduled activities was found to be a factor navigating whether or not they chose to attend the activities in the course. For the feedback sessions, students considering these to be somewhat a waste of time and intimidating affected their attendance. In addition, collisions with other obligations affected the students' attendance in the feedback sessions. Students taking responsibility for their own learning takes place especially through attending scheduled activities, but it was found that students experienced that they did not miss out on a lot of valuable information by not attending the scheduled activities in the course.

5.3.2 Using feedback

By students using the feedback they were provided with they they are seen as engaged and as taking responsibility for their own learning process in the course. Using the feedback they received, and making changes based on the feedback, was seen as natural among the students, and as part of the purpose of feedback.

"I think it's the point of the feedback, it's to…you know the opinion is, you have to use them but sometimes you cannot agree" (A3)

The extent to which students let feedback they received guide their assignments, and the changes they made to their assignments varied. Some students were found to delete parts of their assignments that were commented on if the comment(s) suggested a change, whilst others found it easier to start assignments over to incorporate suggestions made by the teacher in feedback.

"I just ended up, well it happened with not all of them but one or two, I just kind of felt it was easier to just start over then working on something that was done in a rush." (B1)

It was found that students experienced the textbook assignments to be the most challenging assignments in the course, and the feedback received on those assignments was often about how students should only use the main textbook in the course as a source of information. This is something that affected the students' changes made after feedback.

"I got feedback and then I ended up writing something completely different and changing the whole thing. (B1)
[Interviewer] Why did you write something completely new? Because of the feedback that you got or because you changed your mind or?
No, but yeah. Well because he, he wanted us to use the book." (B1)

Although most students were found to incorporate the comments made in feedback in order to improve their work, this was not always entirely unproblematic. For some students, making changes included abandoning some of their initial thoughts about the structure of assignments.

It was found that students always tried to do something with the feedback they received. Sometimes, students found it easier to start their assignments over rather than making the changes. However, this was sometimes done at the expense of an assignment structure the students preferred. It was found that the guiding notion for students when incorporating suggested changes made in feedback was the aim of satisfying the teacher. Students rarely mentioned that they felt that the changes made largely improved their work.

5.3.3 Working on assignments

Students engage with, and take responsibility, for their own learning when working on the assignments in the course. It was found that certain aspects influenced students' engagement with their own learning when working on assignments. These aspects all related to the students' active role as learners in the course.

Through being active in the process of working on assignments, and taking responsibility for their own learning in this process, it was found that students increased their chances of reaching their full potential and learning the most.

> *"Sitting here right now kind of realising, isn't it kind of sad that the thing we learned the most from is just learning on our own? (...) It's like some like kind of childhood movie moral thing. (...) It's like the thing we learnt the most from is learning by ourselves. (...) By actually paying an interest in what we are doing."* (C3)

The ways by which students took responsibility varied. For some, taking responsibility became clear through the way they viewed and worked with their assignments.

> *"For the open assignment I've looked a lot at various forms of efficient agriculture and just sourcing articles and learning about, like seeing the whole picture and seeing connections of like a broader picture of how biological factors interact."* (C3)

The students sometimes had to seek out additional information to answer assignments, and especially for the textbook assignments the students felt they had to read literature and information that was not in the main textbook, regardless of whether or not they could write about it in their assignments as they were only meant to use the textbook as a source of information.

> *"Not everything was good in the book and it was, you know, two sentences about a subject, and you needed more and so I just had to supply and actually read and learn about it, and then I could write it [from] my own head in a way."* (C2)

Both in the individual assignments and the group assignments, applying and using prior knowledge the students had individually or as a shared group to better understand and complete assignments was a way students took responsibility for their own learning whilst actively engaging with knowledge. Even though some students had a background from a different domain, it was found to be possible to learn domain-specific knowledge.

> *"[...] when you look into a different field, you see things that are very similar, to what your background is and then you see how they use methods and results in a similar way so, so it showed me even though I don't know anything about biology from before, a lot of the concepts that I've learnt from other subjects I can use them the same way."* (B3)

The active role of students was also seen in how students were able to see links between the assignments, and what they did with these possible links. It was found that students some times saw links between the assignments in the course, but they did not always do something about these links.

> "I think it's like happened for me once that I read something and was like "oh this is great for this one" and then open that document. But when I'm working with one of them, I'm working with that one. And I think that the subjects are so different that you (…) it's really…separate subjects so it's hard, I think it's hard to make connections." (A2)

It was found that one of the reasons why students did not always do much with the links they saw was due to the aspect of time. If students did not feel they had the time to address the links they found between the assignments they would choose not to do anything with them.

> "There was not enough time to handle it. You see the linkage but I haven't the time to take this now and then you forget it and… And you can't choose it later." (B2)

Whether or not students addressed the links they saw between the assignments, it was mostly seen as a positive aspect of the assignments. However, one student experienced seeing links as being somewhat negative as it led to a feeling of repetition.

> "Yeah, there is a bit overlap between some of the textbook assignments. (…)But that's, that's a bit like "okay I feel like I just wrote about this." (C2)

The portfolio aspects of the course, and particularly the assessment structures in the course had direct implications for the students' engagement with the assignments in the course. This included how students experienced that the course had less pressure towards the end of the course compared to other courses where the more traditional sit-down exam is the mode of the final assessment.

> "It's less pressure as there is no exam. And it's like you can work but you have time. (…) It's not like a lot of work in the end and you're…(…) And you have like, no life." (A3)

It was found that the reason why students enjoyed the portfolio assessment and the portfolio design of the course so much was because of how they got the assignments all the way

through the duration of the course. This is something that positively influenced the students' engagement with the assignments.

> *"I'm not stressing with finishing this. (...) Because we have had the deadlines along the way. So then you have had to work along the way and then now it's not that much work in the end, compared to other things where you have to like cram for the exam."* (A2)

In addition to having a positive influence on the students' perceptions of the course and the portfolio assessment, as well as the assignments, it was found that the portfolio design made the students work throughout the duration of the course rather than just towards the end of the course.

> *"(...)I think it's good that, because we worked quite all along the semester, and not only in the end. Which is what I usually do."* (A3)

Students were found to be actively engaged when working on assignments, and particular aspects related to this were found to influence the students' engagement with the assignments. Students felt the best opportunities for learning in the course was found in the assignments. What was found to be central to all students was that they took on a role of an active learner, and as an active student, especially through taking responsibility for their own learning in their work with the assignments. Particularly important for students' learning was how students took responsibility to enhance their learning, especially through reading additional literature and making efforts to fully understand either knowledge content or information necessary to do assignments well.

5.4 Students' experiences with group work and peer-mediated learning

This section focuses on how students worked and learnt together in the course, mainly taking place through the group work structures. What will be particularly discussed are what was found to be important for the group working structures to run smoothly as well as the students' efforts to organise group work. In addition, what students found to be aspects capable of affecting group work will be discussed. Finally, how students learnt together in group work will be investigated.

The reason why it this is important to investigate is because students interacting through group work was a central part of the course and it is seen as a form of engagement for students to work together. In addition, shedding a light on how students work and learn together in a portfolio-based course is interesting and may contribute to understanding more of students' efforts to work and learn together, especially when viewed with a sociocultural approach, which frames the theoretical background of this study.

5.4.1 Working together

Some factors were found to influence students' experience with group work in the course. This includes how students decided to organise their group work, showing how students laid the groundwork for how they would conduct their work, and what was particularly important for them in relation to group work. It was found that students often did not sit down and formally decide upon how to organise their group work, but rather that they shared an understanding of what they expected from the group work, and thus how they would do it.

> *"I don't think we debated that at all, we were just like let's just do it and…We did it."*
> (B1)

Most students were found to enjoy the group work, and it was particularly down to how well the groups were working together.

> *"I guess that's one of the reasons why we didn't have any major like issues. (…) Because we were fairly clear, all of us, what we expected the other persons to do. (…) And it wasn't like one, one person was expecting to get a very high grade, while the other two were expecting to just get a medium grade."* (B3)

Whether or not students decided to sit together in person and do the group work, or if they would rely on online tools such as Google Docs to conduct their group work and work on the assignments, varied between the groups. It was found that for some of the groups it was important to sit together, and that this was seen as a natural part of group work.

> *"'cos I've heard about other groups, they did just, divide the tasks and "you write that" and "you write that". And they are not working together at all, but on all the three group assignments we are sitting in the same room and… Discussing most of it."*
> (B2)

For the students working with Google Docs and using this online tool to write their assignments, it was found that it was particularly useful as they could always see who had written what and therefore could stay informed on what each of the group members did and thus how they contributed.

> ”It's very useful. You just have to put, when you have an idea just write it and all… (…) And then we have like a whole different art, like a page like you can see what everyone's contributed and you can like change things around.” (C1)

It was found that students were particularly concerned with all group members contributing. With regards to this, a factor of influence was the size of the group, and the students' thoughts about how many members the groups should have. It was found that the groups as defined by the teacher in the course was seen as having an appropriate amount of members. Students stated that having groups with three members is okay, but that this should be the maximum.

Students' thoughts about the number of members in a group is rooted in how they expressed that they wanted all members of the group to contribute, and "pull their weight". This is something students were found to have had negative experiences with before, and that this is something that must be avoided.

> "Assholes can appear in any number of groups… (C3)

> This is the risk in group assignments, sometimes there is or kind of always one people that does nothing." (C1)

However, this was not found to be a particular issue with regards to group work in this course, as students overall experienced that their group members all did a fair amount of work and contributed equally.

For students, it was found that they wanted the group work to run smoothly, particularly because the group assignments were important for the final grade. Students expressed that if group work had not gone well, their overall impression of the course would have changed significantly. It was found that the group work aspect of the course was particularly important for the students.

> "It's been ups and downs, I guess. [of the course] (B1)
> Yeah…for me it's the group assignments that was the ups." (B2)

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As group work was found to be such an important part of the course, this became a determining factor in whether or not they liked the course overall.

> "I would have skipped this course if it wasn't for the group working so good as it is." (B2)

Another factor influencing the students' experience of, and engagement with, the group work was how group work needed to be efficient. In order to ensure efficiency, it was found that communication within the group was necessary. This communication was partly about being able to share with group members if they needed someone to take over some of their work, agreeing upon how group work should be done, and discussing assignments.

> "We agreed upon fairly quickly, I don't know how formal it was but that we would use a minimum amount of time to do this." (B3)

For students, communication through discussion was found to be key in order to enhance the efficiency of the group work.

> "We've been discussing like the assignments… (A1)

> To interpret the textbook assignment two. And also just talking about the assignments, not specifically on, necessarily how to solve them" (A2)

Although students stated that the primary goal of discussions might not have been to solve assignments, the importance of discussing is still clear, and it served a purpose for the students.

> "We have asked each other like what did you write about and like where did you find it, but not specifically like…(…) what do you think about this paragraph I wrote at all, so."

Discussion was also important to students for them to rely on the support of their group members and have input from peers, as well as being able to contribute to the groups' work by discussing.

> "In the group work I could listen and maybe suggest things and then…(…) we could, very quickly made, make it into something meaningful."

For some of the groups it was particularly important to sit together when conducting group work whilst for others this worked just as well by working online, through tools such as

Google Docs. Although students did not necessarily formally agree upon how group work should be conducted it was found that students shared an understanding of what they expected from each other. It was especially important for the students that every group member contributed. Ensuring efficiency of the group work was something students thought of as important, and discussion was found to be a key factor in this.

5.4.2 Learning together

Students learning together, and the learning processes taking place, in group work can be seen in light of the sociocultural approach forming the theoretical background of this study, especially with regards to the aspects of peer-mediated learning and scaffolding. Peer-mediated learning in the course took place both through group working structures and the peer-review in the course. With regards to the peer-review, this is something students experienced to be useful.

Students' perceived usefulness of the peer-review was particularly because of the detail of the comments. Because of this, students found the peer-review to be very helpful.

> *"(…) that one was very detailed. So very helpful, we will know what we have to do."*

In addition to feedback provided from students to students in the course, through the peer-review, students were also found to rely on each other for possible feedback and comments within the groups.

> *"You also get direct feedback from other your other group members.*
>
> *Yeah, partners."*

Seeing the opportunity for receiving feedback and guidance from group members and peers was valued by students. It was seen as particularly useful as fellow students often were more available to give feedback than teachers.

> *"Maybe sometimes it's faster or quicker to ask two or one of your friends or…"*

Beyond seeing peers as being a source for feedback, students also learnt together in the course. This took place especially in the group work. Although it might have been implied that students should, and could, learn from each other and learn together in the group work, peer-mediated learning took a relatively unstructured form within the group working

structures. Students experienced that working together provides good opportunities for learning.

> *"You learn a lot about, with talking to people. (…) Instead of just working by yourself."*

Peer-mediated learning took place especially through students seeing, and relying on, each other's skills and using these varying strengths for good. This is something that was found to improve the students' group work, as well as increasing the students' sense of their own usefulness and value to the group.

> *"Why I think why the group worked so good with this. Is that we all have like different backgrounds. (…) And then we all have our strengths that were needed in this group work. So we were all kind of…backing each other's strengths up. (…) And that, that is very good in a group project because then you feel that you are valuable to the group in some way."*

The reason why understanding group work, and group working processes, in the course is important is because of how it was found to be central to the students' engagement with aspects of the course. In fact, it was found that for most students the group work in the course was seen as the best aspect of the course, and it was found that some students had considered, and expressed that they would, have dropped the course if the group was not working. In addition to being a positive addition to the course for students, the learning outcomes of including group work in the course were found to be profound as students enjoy working and learning together. Students feel valuable and useful to their group members, which arguably can be said to increase their engagement with the course as a whole as well as increasing their individual self-esteem and thoughts about self-worth.

5.5 Challenges for students to remain engaged

Throughout the analysis certain aspects and certain instances were found where students reported some dissatisfaction and negative emotions. These are here gathered and presented as what may be challenges for students to either become or remain engaged in, and with, the course. As disengagement is becoming a growing cause of concern in relation to student engagement, understanding what might cause such disengagement and generally challenges for students to remain engaged is important.

5.5.1 Keeping students engaged with lectures

Throughout analysis it was found that students struggled somewhat to either remain, or become, engaged with the lectures that were part of the course. What was found to be a core influence on the students' engagement with the lectures was thoughts about their usefulness. In order to understand students' engagement with lectures, and especially the challenges for students to engage with the lectures, it is important to understand why students did not see the lectures as useful.

One way in which thoughts about usefulness influenced students' engagement with the lectures was through their attendance. It was found that if students did not see the usefulness of lectures, they would often choose not to attend them. Therefore, what is a particular challenge in relation to the lectures is making the perceived usefulness great enough for students to be willing to attend.

It was found that one of the reasons why students did not experience the lectures as being useful was due to how they did not feel the content of the lectures was applicable in their assignments, and thus not being valuable towards the final grade in the course. Students expressed that the lectures did not contribute in bringing forth any useful information with regards to the assignments in the course. For students, this was found to be of particular importance and that they need to see the usefulness of the lectures in direct relation with the assignments in the course.

> *"Because what you got out of them you didn't really get valuable information that you could put into the textbook assignments or…* (B3)

> *We weren't allowed to use it."* (B2)

Also related to the issue of usefulness is the aspect of interest. Students expressed how they wished the lectures would have been more interesting. It was found that students felt that the lectures could have been made more interesting by including more recent research and findings from newer research. For some of the students, it was found that most of the content in the lectures was not new, and they did not get much new information from the lectures.

> *"I missed the lectures where he actually could present relevance for research done today. (…) So for me it was like a downturn, 'cos I was hoping, I like ecology. (…) I was hoping for a more overview of like how the research and use it."* (B2)

Students were also found to experience that the lectures could have benefitted from having a stronger focus on presenting domain-specific knowledge. Students were found to experience that the lectures was more about presenting how to structure and write assignments, and what words to use in their assignments rather than about presenting information special to the domain. It was found that incorporating more information about domain-specific knowledge, could have improved the students' experience, and engagement, with the lectures.

> *"I was looking forward to learning more about ecology and…and problems that is related to today or to different topics or, not just the general "what is ecology" but…how to use it or different examples from…(…) eh relevant research for example. I felt this course was not at all what I had expected."* (B2)

As the lectures were experienced by the students to contain a lot of information already known to the students, a challenge for some students was found that they experienced the lectures as boring. This is particularly challenging as the danger might be that it could turn into disengagement and a sense of not caring. With regards to attendance, this might also be part of understanding students' scattered attendance in the lectures.

> *"Honestly I found them boring. (…) Because I had so many ecology courses before and it was nothing new. And still I missed more of them, I don't know why but…yeah."* (A2)

Somewhat surprisingly, students expressed that although they did not attend that many lectures, they still would have liked to have more of them in the course. However, students expressed that they would only have liked more lectures if they presented new information.

> *"I would like to have more lectures, actually. […] On new stuff, not just like the same that we learned at earlier subjects."* (A1)

It was found that the main challenge for students to remain engaged with the lectures in the course was if the students did not experience that the lectures were useful and if they did not get any new information from the lectures. If students experienced that the lectures in the course provided more of the "same old information" and became more of a repeat of other courses, students' engagement with the lectures would be affected, and they would often not attend the scheduled lectures. What students were found to miss from the lectures, and what might have affected their engagement with the lectures positively was how they would have

liked the lectures to provide the opportunity to venture into new, for them somewhat untouched, areas of the domain.

5.5.2 Lack of guidance and indication of grade in feedback

Feedback and students' engagement with the feedback provided in the course was particularly affected by students' thoughts about how valuable and helpful the feedback was. Students were found not to consider the feedback in the course to be of great value or usefulness. This experience was particularly due to how students felt the feedback did not give them much indication of their grade and how they were doing in the assignments. In addition, students experienced that feedback did not provide guidance on how to improve their assignments.

> *"I guess we, we are looking for more guidance. (...) Rather than feedback. Like guidance, where to take this...* (B3)
> *Yeah, what to actually do."* (B1)

Students expressed that they got no indication of their grade in the feedback, and that this is something they would have liked. It was found that students experienced that they were left guessing what grade they would end up with, or where they were on the grade scale. This was something found to be important to the students and that they thought could have been improved in the feedback structures of the course and the nature of feedback.

It was found that not only was it the lack of indication of grade that was troublesome for the students, but also the lack of guidance on how to improve their current work with regards to their grade.

> *"I would prefer to have like, as you hand in like "okay, as it stands right now this is a D, you should fix this, this, this and this (...)"As it stands right now, this is a B but if you fix this, this, this and this it would be an A"."* (C3)

Although students were found to be interested in knowing where they were in relation to grade, they were also found missing more indications of their work on a more general basis. Students experienced that due to the lack of guidance and indication of grade, it did not really feel like feedback. They argued that they need indications of their work in order to know what, and how to improve their assignments. One way students felt this could have been improved and incorporated in the feedback structures is through an increased use of examples.

> *"You need indications of your work.* (C1)

Yeah, you just…is this what you wanted me to write about? That would be a good way to start. (…) Did I hit the right subject? You don't really get an answer. (C2)

Yeah, but it's not an answer. Just need sometimes…(…) So maybe you could give some examples of this…Give us something." (C1)

Students expressed that they felt that it was important for them to receive feedback on what they could do in order to improve their assignments.

"[Interviewer] You expected more actually assessment of how far you've come or?

No, more like…like a, a comment that you are, you are doing well on this part but you need to elaborate on this part and…(…) develop this a bit further." (B3)

How students felt about feedback, and what they felt was missing from feedback, guided their engagement with, and view of, the feedback provided in the course. Students were found to feel like they would have benefitted from more indications of where they stood in relation to grade and what they could do in order to improve their assignments. It was found that students did not really experience the feedback in the course to be very useful to them, particularly because of what they felt was lacking.

5.5.3 Aspects affecting students' engagement with assignments

What was found to be particularly affecting students' engagement with the assignments in the course was how students felt they were under pressure to use information only from certain sources, especially with regards to the textbook assignments. This is something that was experienced as negative by the students. This was found to be somewhat a cause of irritation and concern among students and students expressed that the textbook assignments were the most challenging assignments in the course.

"It would have been better I think if it wasn't, you know the textbook assignments, they're…you're always supposed to use the book. And if you don't use the book, he's like "okay, where is this in the book?", "where is this in the book?", "you need some specific examples from the book". So I don't learn that much from, you know writing down examples from a book, in a way." (C2)

In relation to students only being allowed to use information from one particular source, it was also found that students often struggled finding information in the textbook, as well as determining what information to include in their assignments, as the textbook to be used for the assignments often provided a lot of information on particular topics.

> *"If the textbook assignment was okay this textbook assignment you should use chapter one, two and three. (...) Then I can read chapter one, two and three from the book and…(...) Then I may write the essay afterward. But now it was just yeah, somewhere in the book it says something about this."* (B2)

It was found that students felt the pressure to stick to the one textbook limited their freedom and somewhat the scope of their assignments. Students would have liked to use more information from other sources as well, or simply information they had already acquired from previous classes or by their own efforts of learning.

> *"And then it's easier for me to just use an example that I know of, from other classes or whatever."* (A2)

Another challenge for the students with regards to the textbook assignments in particular was how they experienced the assignments to be quite diffuse, and that they did not know what the goal of the assignments were. Students expressed that they did not know what the teacher expected from them in the textbook assignments. This particularly became a challenge because of the limited time available to the students in correlation with the teacher being strict in feedback on students sticking to the main textbook and using that as the main source of information.

> *"I think the main thing is he (the teacher) needs to be less diffuse (...) like, be more concrete in what he actually wants you to do. (...) When it's that much work to do, you don't have time to figure it out on your own, you need some more indication of what…(...) what to do."* (B1)

Students expressed that they would have liked to be able to show more independent thought in the assignments, especially through being freed from only having to use one source of information.

> *"Maybe for all assignments except for the open ones but just, we can have the possibility to choose an article or we can find on the internet or something, use it and*

explain the relationship between our article we have chosen and the topic. Just to find other thing and show that we are by some research you know. (C1)

Yeah. And independent, show independent thought." (C3)

In addition to students experiencing that the pressure to stick to the textbook narrowed their independence in their work with the assignments, it was also found that the learning outcomes of having such assignments in the course was perhaps limited by the pressure to stick to the textbook. In addition, as students were found to find it hard looking for information in the book, students would have to adapt the ways they looked for information. One student explained that using the internet, and particularly Google, to discover what was written in the book on particular topics was one possible way of doing this.

"So you kind of had to maybe Google and then go and try to find something from Google in the book and then "oh I can write this, 'cos it's in the book (...) It was kind of...a weird way to work." (B1)

It was found that students experienced the pressure to only use one source of information for the textbook assignments to be limiting and that they wished their freedom could have been increased in a way that they could have used additional sources of information to answer the textbook assignments in the course. In addition, students were unsure of the exact goal of the textbook assignments, and the clarity thereof could have been increased further. These are factors believed to greatly impact students' engagement with assignments, and textbook assignments in particular.

5.5.4 The influence of timing and workload

Other challenges to student engagement found within the course relates to aspects of timing and workload. The aspect of timing relates both to the timing of activities and assignments within the course, as well as collisions with obligations in other courses and other obligations.

With regards to issues of timing within the course, it was found that students found it a bit challenging that assignments were given at the same time.

"There's always another assignment in my back of my head, and just oh you have to do this, you have to do this. (...) You're not doing this now. So, and then, then I can't put my heart into it. A bigger assignment." (B2)

The aspect of timing within the course was particularly important because students often felt like they were not able to focus on one assignment at a time, but rather they felt like they had to focus on all the assignments simultaneously.

> *"We kind of end up sitting, "oh I'm doing this, but I should be doing that". But then you start doing that and think "well, I really should do this"…"* (B1)

This is something that was found to affect students' engagement with the assignments, and particularly the bigger, open assignment where students were allowed to choose their topic freely.

> *"Yeah, 'cos I felt the project, the long texts. The individual project. Was, it was exciting at first, oh I can write about something I liked or I'm interested in, but…I can't write that in the same time I'm going to write all the other assignments."* (B2)

Students were found to experience that the timing of assignments, and getting all the assignments at once was rather difficult. In order to improve this, students proposed that assignments should be given throughout the course in order to relieve some of the pressure.

> *"[Have] one assignment with one deadline, and then the next assignment and one deadline…(…) You would be done with it.* (C2)

> *Because then it's not weighing over our heads for the entire semester, like it is now."* (C3)

Students suggested that limiting the number of assignments in the course could have increased the overall quality of the course, as well as making it easier for them to focus on one assignment at a time. Not only does this relate to the timing of assignments in the course, but also the overall workload. It was found that students experienced the course as rather stressful.

> *"And most of the course was very stressful. Very, a lot of pressure, a lot of tasks that was supposed to be submitted at different times."* (B2)

It was found that students experienced the course as having a heavy workload and that this was something that came as a surprise to some of the students, as they were not prepared for the amount of work to be done.

> *"Cos when I started taking it like "oh this sounds really well… (…) and nice and it's..." I like that kind of process when you work, but it turned out to just be*

overwhelming and too much and you have other assignments in other classes and that was kind of always colliding, always crashing and then I felt I had to turn in assignments that I hadn't done properly." (B1)

Students were found to be particularly concerned with how a course's workload should reflect its credits.

"It's only ten study points, and it's the hardest, it's the most work required for the ten study points I've ever done. (…) It feels like twenty." (B1)

The students' concern with the need for the course to reflect the credits was not only grounded in the workload of this particular course, but also when seen in relation to other courses and obligations in those.

"I think he (the teacher) forgets also that we have, this is ten study points, you usually have forty per semester and some of them are like five, five. So we have a lot of subjects and they all demand we hand stuff in and you do the exams and everything then on top of that having what feels like a gazillion assignments to do." (B1)

With regards to timing within the course, students were found to be particularly concerned with the assignment structure, and the timing of the assignments. Students expressed that they would have preferred to have assignments given more separately, to relieve some of the pressure. It was found that students struggled to focus on one assignment at a time. Students' thoughts about workload relate to how they experienced the course as having a heavy workload, and that this became somewhat troublesome when considering the demands and obligations in and of other courses. In addition, students are concerned with, and want, courses to reflect their credits. In the case of this course, students felt like the workload and the credits were not entirely aligned, as the course had such a heavy workload. The aspects of timing and workload were found to be aspects affecting students' engagement, and can develop into a challenge if students dwell on these aspects and become emerged in them in a manner when it is no longer productive.

6 Discussion: relations important for student engagement

This chapter is dedicated to discussing the findings presented in the analysis and answering the second research question in this study, addressing what relations seem important for student engagement in a portfolio-based course. By drawing on previous research presented in the literature review and the theoretical background of the study, the aim of this chapter is also to begin paving the road for the conclusions and possible future research on student engagement.

6.1 Interest and emotions guiding student engagement

Kahu (2013) has called out for a need to strengthen the body of higher education literature which focuses on the role of students' emotions in student engagement. After conducting the analysis in this study, a relation between the aspect of interest and emotions and student engagement became clear. This section will present what was found to be key in this relation.

Findings suggested that the aspect of interest, and students' chance to act on it, is capable of influencing engagement. It was found that students appeared to be increasingly engaged when activities and assignments allowed for them to follow their interest. Students' sense of freedom in engagement with assignment was also found to be important with regards to engagement. In fact, when asked, most of the participants agreed that the assignment they most enjoyed was the open assignment, and argued that this was due to how they could choose the topic of this assignment freely, as well as being free in how they wrote about this topic.

It was indicated in findings that while students did not mind having pre-defined topics for their assignments, they would have enjoyed more freedom in how to structure and write their assignments. Students expressed that they felt teachers narrated assignments, especially through limiting the scope of assignments and giving indications of what was expected in how they wrote their assignments. As a result of this, students were found to feel "stuck" in teachers' thoughts. This also shows the importance of interaction, especially between students

and teachers, as well as student freedom, and the influence of which this has on student engagement.

Findings indicated that interest was not only important in relation to students' engagement with assignments, but also lectures, and especially with regards to content of lectures. For most of the students, it was discovered in analysis that the content of lectures most often was not experienced as new to students and findings indicated that students would find lectures boring and often choose not to attend. As a result of analysis, it was found that if students had experienced that lectures contained more new and interesting information, they might have enjoyed lectures more. As 5.5 aimed to discover some of the challenges for students to remain engaged, this might help to oppose the fear of growing disengagement among students (Axelson and Flick, 2010) and could potentially avoid disengagement.

As not only interest, but also emotions were found to be important for students' engagement, findings suggested that there is too a link between interest and emotions. By students being allowed to follow their interests in engagement with both activities and assignments, findings indicated that this impacted their emotions positively. Similarly, findings suggest that if students enjoy what they learn, their interest towards particular aspects of a course, or the course as a whole, could be influenced positively.

Furthermore, both the aspect of interest and emotion was found to have the ability to guide students' attendance as findings indicated that if students found activities in the course interesting and bringing forth positive emotions, they would choose to attend. Similarly, if students experienced activities to be disinteresting and affecting emotions negatively, they would often choose not to attend scheduled activities.

The analysis in section 5.1 indicates that students' feelings of happiness and contentment have the ability to increase engagement. Similarly, if students experience negative emotions or a sense of disinterest with aspects of the course, analysis suggests that this might decrease their engagement. Findings indicated that this might also affect students' cognitive engagement and learning outcomes. One aspect of the portfolio-based course which was found to positively affect students' emotions was the group work part of the course, which students reported as being one of the aspects of the course they enjoyed the most. Findings indicated that students' positive emotions stemmed from how they felt of value to their group. A central part of the portfolio-based course, it was found that students' believed that had they not enjoyed group

work and experienced positive emotions as a result of the group work, findings indicated that their overall impression of the course would have changed.

As feedback is an integral part to a portfolio structure (Dysthe and Engelsen, 2011), understanding the relation between emotion and this engagement is important. It was found that if students received what they experienced to be negative feedback, they might experience negative emotions towards assignments. In addition, findings indicated that students would become hesitant to continue work on their assignments if they had previously received negative feedback. This confirms findings by Price et al (2011) that relates to students' perceptions of feedback and the value of feedback.

In addition, Price et al (2011) found that if students experienced feedback as being unsatisfactory, this would affect their willingness to receive feedback at later points in time, which is supported by the findings of this study that indicate how students' engagement with feedback sessions was affected by the nature of feedback, and how this made students feel. Findings suggest that students, if receiving negative feedback, become more hesitant to hand in assignments to receive feedback and attend feedback sessions at later points in time.

Investigating what role interest and emotions play in fostering student engagement in a portfolio-based course is particularly interesting because it became clear through the process of analysis that these aspects play an important role in how students felt about and worked with the course. Findings especially indicate how positive emotions may play a part in enhancing and fostering student engagement whilst negative emotions might be seen as a challenge for students to remain engaged and in turn might be part of explaining why students become disengaged. Furthermore, the aspect of interest and emotions is evident in students' engagement with all activities, assignments, and actors involved in a course. With relation to actors, findings indicate that teachers and staff have the greatest chances of affecting students' emotions, which supports findings by Price et al (2011) that relate to staff affecting students' engagement and motivation with whether or not they pay an interest in students.

As aspects of both emotions and interest seems to be important in relation to student engagement, this it is necessary to keep this in mind both when designing, implementing and carrying out courses in higher education. Findings suggest that unhappy students might struggle to be equally engaged as happier students. Therefore, it is crucial that this aspect of the student life is not ignored.

What has allowed for exploration into this particular relation is the use of sociocultural theory and Kahu's (2013) student engagement framework. The emphasis placed on social interaction and relations as prerequisites for learning in the sociocultural theory has given the theoretical background needed for creating an insight into student engagement. This has been particularly useful when trying to strengthen the conceptualisation of student engagement as a process. Similarly, because of Kahu's (2013) focus on psychosocial influences on student engagement, and particularly the notion of affect, understanding the relation between interest and emotion and student engagement has been made possible. Furthermore, the important distinction made by Kahu (2013) regarding how student engagement should be seen as more than just an internal static state, but rather as an individual experience embedded in a sociocultural context and shown as influenced by characteristics of individual students, teachers and ways of designing courses, supports a view of student engagement as a process. This has allowed for a processual view of student engagement and a detailed insight into student engagement.

By viewing student engagement as capable of being influenced by aspects of both interest and emotions, made possible by the use of both sociocultural theory and Kahu (2013), the view of student engagement as a process is strengthened. When taking these aspects into consideration, the multi-layered nature and complexity of student engagement concept is brought forth. More studies focusing on the relation between interest, emotion and student engagement is needed to strengthen this view of student engagement.

6.2 Students taking responsibility to learn

Student learning took place in many ways in the portfolio-based course. One of the key aspects of learning was in how students took responsibility for their learning by working on assignments, reading additional literature to understand assignments, attending scheduled activities, and using feedback. Overall, findings indicated that students had to be active in their learning in order to reach their full potential and maximising their learning outcomes in the course.

Although one of the ways in which students were seen as active and taking responsibility for their own learning was through attendance, findings suggested that students did not necessarily have to attend scheduled activities in order to be engaged. Students were found to engage with these activities in other way than attending, especially through looking them up online and examining whether or not they deemed them to be useful. However, if students fail

to attend scheduled activities in courses, they might be seen as disengaged, according to what Gourlay (2015) has referred to as the 'tyranny of participation'. The risk with this is that students who seem to be disengaged might be viewed as disengaged, and in turn treated thereafter, which is mentioned by Macfarlane and Tomlinson (2017).

As a result, this might actually lead to disengagement in the future, and thus becoming a self-fulfilling prophecy. This can be avoided by conceptualising student engagement as a process, by taking into accounts both visible and invisible forms of engagement. Where an attending student might be seen as someone who is thoroughly engaged, this might not be the case. By understanding more of what surrounds the concept of engagement, such as emotions mentioned in 6.1 and interaction, which will be mentioned in 6.3, a more holistic view of engagement is employed. This supports the finding by Price et al (2011) that relates to how a more holistic view of student engagement is needed.

It was found that students felt they learnt a lot through talking with and interacting with other people in the group working structures, which points to the usefulness of using sociocultural theory as the theoretical background, where social interaction is seen as a prerequisite for learning. Peer-mediated learning in group work was found to take place especially through seeing and relying on the strengths and skills of each other in the group work. This was found to be something students enjoyed as it made them feel of value to their group, and that they had something to contribute with in the group work. This also relates to the sociocultural notion of scaffolding, and was something the students subconsciously carried out. For instance, students were found to ask members of either their group or other peers, that they saw as being more skilled, for help and guidance.

Students wanted group work to be efficient and discussion was found to be one key way to promote efficiency as well as increasing the overall quality of the group work and collaboration. The nature of the in-group discussions was not necessarily focused on how to complete tasks and assignments, but rather to help each other reach understanding of a certain topic or how a particular assignment could be conducted. Findings suggested that most students thoroughly enjoyed group work, and it was in fact seen as one of the more important ways of learning domain-specific knowledge content in the course as well as being a positive aspect of the course. Again, this points to how relevant the theoretical background of the study was, as it has allowed an insight into peer-mediated learning and understanding more of how students learnt in group work.

Findings indicated that overall, students were found to experience assignments in the course as what provided the best opportunity for learning. This was found to be especially due to how students had to take responsibility in their work with these assignments as they could not be done by others. Students therefore had to do something actively in order to complete the assignments.

Although group work was a central part of the portfolio-based course examined in this study, group work is not always such an integral part of portfolio-based courses. However, since it was found that students enjoyed this way of working and learning, it might be that part of being active learners is working together with peers and reaching a common understanding, as well as working on assignments in collaboration with others. Furthermore, findings suggested that this way of working was a positive influence on students' engagement. Therefore, including group work in courses, and especially portfolio-based courses might be of great use, and is something for future practitioners to take notice of. Finally, as active learning is an important topic related to student engagement, students taking responsibility to learn and to engage with aspects of the course is necessary to understand. The relation between active learning and student engagement was found to be important.

6.3 The importance of interaction

Due to the highly relational nature of the course, the aspect of interaction is very important to shed a light on how some of the relations worked and was experienced by students.

The interactions taking place between students were especially visible in the group working structures. Students were found to thoroughly enjoy interacting with other students in groups, but it was found that for group work to be successful and valuable to individual students, the groups should not be made up of more than three people. In addition, it was found that group work was seen as successful if all members had the same ambitions and expectations with regards to grade, and if everyone contributed equally to make the group work efficient and good. In order for this to be a reality, students had to interact with each other and the need to be able to communicate clearly what they expected from each other was found to be of great importance.

Another way in which students interacted with each other was through how students often relied on the help from their peers and group members to receive feedback, as it was found

that students often saw this as being easier and quicker than waiting for feedback from teachers. This is especially due to how students felt that other students were more accessible and approachable than teachers. Being able to see this was particularly due to how the study was framed with a sociocultural theory in mind, where the focus of learning together is central.

Interaction between teachers and students took place especially in the activities and assignments of the course. Findings indicated that teachers influenced students through how activities and assignments were structured and carried out, and through the nature and provision of feedback. It was found that teachers have power and assert a level of influence over students, which was particularly evident in assignments, where findings indicated that students experienced teachers to overly narrate assignments. As a result, students' engagement was affected, and it was found that students felt limited in how they could work with the assignments, and how they could structure their assignments.

In addition, the teachers' level of influence is also evident in the nature of feedback and how students engaged with feedback they received. It was found that students were willing to give up some of their individuality in order to comply with the feedback comments they received, and thus satisfying the teacher. This included changing their assignments after feedback and sometimes starting assignments over if they did not feel the teacher was satisfied. Although students might have disagreed with the feedback they received, they would always do something with the comments and were most often found to comply with the suggestions for change made in feedback.

The power and influence teachers have over students, whether that be the perceived power by the students or actual power, seemed to influence students' engagement. It might be said that this shows the lengths students are willing to go to by giving up some of their individuality, independence and freedom in writing assignments, in order to "satisfy" teachers. What seemed to be the primary focus of students in their work with the assignments was to create something that would get them either a good or a decent grade, without giving much thought to the learning process and learning outcomes of writing assignments. This might reflect how learning environments in courses where the space for students' own exploration is limited, which may in turn lead to students adopting surface strategies to learning and might also be seen in light of what will be explored in 6.4, which relates to students' strategic approach to engagement.

With regards to the interactions between activities and assignments in the course, what was found was how students needed the activities and assignments to be coordinated. Students expected that the information they received in the activities should be of direct use in their assignments. If students did not see this link between activities and assignments, students would often choose not to attend scheduled activities.

In relation to the textbook assignments, which were found to be quite problematic for some of the students, the lack of lectures focusing on information from the textbook was difficult for the students. In addition, seeing how assignments were related and played into each other was interesting for students. However, it was found that students did not always have time to deal with these interactions.

In addition, the perceived usefulness of activities and assignments in the course was also found to affect students' engagement. If students did not find an activity useful they would often not attend it, and if students struggled to see the purpose of an assignment due to lack of clarity or a clear goal, their engagement with the assignment was often lowered.

Students were also interested in the course reflecting the study points, or the credits, of the course. It was found that students saw some discrepancies between the credit points of the course and the course's workload. Students expressed that the course had too many assignments, and that it overall was too much work.

Exploring interaction with regards to student engagement was made possible especially by the use of Kahu (2013), as the interaction notion was a key part of her student engagement framework. Once more, focusing on the influence of interaction on student engagement is in favour of a processual view of student engagement, as it once again looks into some of the central factors which may have influence on the concept.

6.4 A strategic approach to student engagement

In all of students' engagement with the activities in the course, one common factor was found that related to the students' need to see the usefulness of the activity they were about to engage with. This might be one of the challenges that is part of portfolio-based courses that uses a mix of mandatory and voluntary activities, which is also addressed by Smith and Tillema (2003).

Findings suggest that students' engagement might be dominated by the need to become strategic in their engagement and in their learning, as they might have become so used to being strategic in their ways of approaching learning and course material that this is natural for them. Seeing usefulness of something, whether that is activities or assignments relate to the notion of strategic learning and thus strategic engagement.

It became clear through investigating some of the challenges for students to remain engaged that students expect what is required of them in courses to be useful, and of value. This relates especially to students' engagement with lectures, as what was found was how students wanted lectures to include more new information and thus avoid becoming 'boring'. Students expressed that they are not willing to "waste their time", by attending activities that is of no use to them, which is supported by Price et al (2011). As part of this, it was found that students expected feedback to provide insights into how they could improve their existing work and give them indications of their grade. This proves students to be highly strategic in their engagement with both feedback and feedback sessions.

Students' engagement with feedback in the course was also dominated by their need for it to be useful. This especially related to the feedback sessions, as students who did not perceive them to be useful would choose not to attend. However, students showed signs of wanting somewhat easier solutions in relation to feedback. Furthermore, findings confirm what Price et al (2011) found that relates to how students express a wish for more specific and less generalised feedback.

Although students might be looking for a simple solution, as feedback is such an integral part of a course based on a portfolio design (Dysthe and Engelsen, 2011), it is important that students' experience with feedback is positive. If students feel like the outcome of feedback in a given course is minimal, then the purpose of giving and receiving feedback is diminished. In the interest of students, the idea of feedback is to receive guidance of how to improve their work. If this aspect is missing from the feedback structures, then the purpose of feedback might in time decrease, if not all together disappear.

Related to the usefulness of feedback, students was also found to acknowledge that using peers for the purpose of feedback was something as good as, if not better than receiving feedback from teachers. This is also mentioned by Dysthe and Engelsen (2011) who found that both teacher and peer feedback is widely recognised as crucial aspects of formative

assessment as well as being a common feature in portfolio-based courses. Scott and Shields (2011) also support this as they discovered that students of biology value peer feedback as a legitimate source of feedback. Students' strategic approach to student engagement is also evident here as the reason for students seeing peer-feedback as particularly useful is due to how peers were more easily accessible and approachable than teachers. Furthermore, findings suggested that students experienced peers to give just as good, if not better, feedback, as they expressed how the feedback given by peers was more detailed and direct.

Although students needed to see the usefulness and value of what they were doing in the activities in the course, this was less apparent in students' engagement with assignments. However, student engagement with the textbook assignments was found to be overshadowed by confusion among students on what the purpose, or goal, of these assignments were. In relation to group work, students' thoughts about usefulness, value, and a strategic approach was related to how students expected group work to be efficient and that all members of the group should pull their weight.

Students' thoughts about usefulness and signs of strategic behaviour in their engagement might be an integral part of the new student demographic, but it can also arguably be said to be because of the constant pressure on students to show certain traits and aptitudes. Determining students' thoughts about usefulness and examining their strategic behaviour is part of seeing student engagement as a process, as it involves taking into account what goes on around their engagement, and what they are engaged with.

7 Conclusions, limitations and suggestions for further research

7.1 Conclusions

A hope for the finalisation of this study is that it has contributed to strengthen the conceptualisation of student engagement as a process. Student engagement can as a result be seen as more than just a product and a study of this nature illustrates that it effectively can be studied by qualitative means in smaller, in-depth studies and not just in larger survey studies, as suggested by Kahu (2013). Bringing forth thoughts about student engagement being more than just a product is necessary as the importance of the concept in higher education, both as a measurement of institutional and individual excellence, is constantly reaffirmed. The relevance of student engagement is still clear as there is no doubt that thoughts and studies on student engagement will continue to grow.

Due to gaps in student engagement research, it is important that the dominant product view of student engagement is opposed by the view that it can be seen as a process. What has become clear through this study is that student engagement cannot be seen as only one thing, such as a set of indicators for what is deemed the outlook for a "desired student". Brought forth by Christenson et al (2012) is the idea that there is a general consensus that student engagement is of a multidimensional nature, which is revalidated in this study. Seeing student engagement as this is rooted in how the concept is made up of different components. This is closely linked with a processual view of engagement, which in this study has been established partly through investigating what students engage with and how this engagement unfolds.

Answering the second research question of the thesis, which aimed at discovering what relations seemed important for student engagement in a portfolio-based course, established that by seeing interest and emotion as an important relation for student engagement, the conceptualisation of student engagement as a process is strengthened. Interest and emotions are important aspects that have been found to influence students' engagement, and should therefore not be overlooked in student engagement research and higher education practice.

With a growing fear of disengagement among students (Axelson and Flick, 2010), some of the challenges for students to remain engaged have been looked into. What has been

discovered relates to how students can remain engaged with lectures, difficulties facing students' engagement with feedback and assignments, and the influence of timing and workload on engagement. Acknowledging and understanding the impact of challenges to students remaining or becoming engaged, and how they should not be overlooked is important. By understanding some of the challenges to student engagement, understanding more of why students become disengaged is possible. This is also part of seeing student engagement as a process, as it is not a fixed state, but rather a 'state-of-being' which is characterised by being subject to change when challenged by inner or outer factors.

Students' role as active learners, both in collaboration with others and individually, has been found to be important for students to be engaged. The importance of feedback has been established, a central part of portfolio-based courses, and the nature of feedback; its impact on students' emotions and thus their engagement. Students' need to see usefulness of an activity as a prerequisite for attending shows strategic thought. Students are tactical in their choices, and they are not willing to, in their opinion, "waste their time".

By understanding forms of engagement that emerge in a portfolio-based course and what relations seem important for student engagement in such a course, progress is made in seeing and understanding student engagement somewhat differently than in previous studies. By viewing student engagement as a process, the way it is conceptualised in this study differs from a view of student engagement as a product, which arguably has been the dominant view of the concept in previous studies through an emphasis on measuring engagement and attempting to make engagement.

By the nature and focus of this study the view that student engagement could, and perhaps should, be seen as a process has been strengthened. Although students might be engaged at the beginning of a course this engagement might change throughout the duration of a course. Being engaged is not a fixed state and there are many aspects of a course that may affect students' engagement. That is clear from this study.

Part of what became evident after analysis is how conceptualising student engagement as a process is realistic. Narrowing the concept of student engagement down to a product does not do the concept justice, and does not allow for all nuances of student engagement to be seen. When investigating processual aspects of student engagement, and what students engage with,

showing more sides to student engagement is made possible, and establishing a closer look into the process of how student engagement unfolds takes place.

7.2 Limitations

One of the clearest limitations of this thesis is how the data was collected prior to the beginning of this thesis and as part of a different, and larger, study with a particular emphasis on other aspects of teaching and learning besides student engagement. As a result of this, access to participants was non-existent, and thus the opportunity to pose follow-up questions and questions for clarification was lost.

In addition, the opportunity of tailoring the interview guide and the questions posed in the interviews was missed in this study. However, this might also have served a purpose for this study as the stance taken is that student engagement should be viewed as a process rather than as a product. Had there been questions directly related to the topic of student engagement, the concept would have been more streamlined and students would have had to answer the questions by identifying themselves as having certain characteristics considered to be "typical" for an engaged student. This would in fact have undermined the assumption and the stance taken that student engagement could, and perhaps should, be seen as a process rather than a product. Therefore, although lacking access to participants is a clear limitation it might also be one of this study's clearest strengths.

Using second-hand data may in itself be a limitation. Not being the one who collected data and with no access to participants include not having been present for the collection of data and thus not being present in the setting. This may affect how interpretations are made, as those interpretations are made solely on the basis of what students say in what was their final interview, which was used for analysis. What students expressed in this final interview might not reflect all of their feelings and thoughts about the course. However, this limitation was accounted for as one of the supervisors of this thesis was in charge of collection of the data and was able to answer questions to clarify. In this way, the danger of making bold assumptions and "jumping to conclusions" was limited.

In addition to limitations faced with regards to the data set, some limitations may also include doing a case study in one course only with a limited number of participants. Although more research is needed on student engagement with smaller populations, having included one

more course in the empirical setting would have increased the quality of the thesis and the results. It would have given a clearer insight into portfolio practices in Norway and would have presented the opportunity to compare results to establish whether or not the portfolio practices in the current empirical setting are truly representative with regards to student engagement.

7.3 Suggestions for further research

More research is needed that look more into the distal consequences of student engagement, in line with Kahu's framework. Doing longitudinal, in-depth, qualitative studies following students throughout the duration of their undergraduate studies would be really interesting and would continue building on the assumption made in this thesis that student engagement both could and should be seen as a process rather than as a product.

In addition, further studies into how disengagement can be prevented are needed. This can be done by taking into account challenges for students to either become or remain engaged. The aspect of emotions and interest could be one of the building blocks for such studies, as they have been found to be important for student engagement and are aspects which cannot be ignored.

Related to studies focusing on the challenges for students to remain engaged, studies focusing more on presenting students' thoughts of usefulness and value of aspects of courses. This is important because it was found to be a determining factor for the students' engagement with aspects of the course. If students did not see an aspects' usefulness or value, they would choose to either distance themselves from it or engage with it less than they could have if they had seen it as being useful and valuable for them in the bigger picture, particularly in relation to their grade(s).

Finally, studies strengthening the view of student engagement as a process, or state-of-being opposing the product view. Establishing a part in literature where this is covered more extensively and where it becomes more of a "standard" view of student engagement standing side-by-side with the product view would be a research line that would be both necessary and interesting.

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Appendices

Appendix 1 – Interview guide student groups

Course expectations and experiences	
What are your experiences with the course in general?	*e.g. workload, structure and content?*
If you think of your expectations you had based on the course description, in what way have those been met?	
How did the course content relate to other courses/topics included in your study program?	
How many other courses did you take in parallel this semester?	
Intended learning outcomes and their achievement	
What did you find particularly interesting or useful?	
How do these connect with your plan for achieving the competencies you are seeking?	
Do you feel these skills will be useful when you are a professional?	
Teaching/instruction	
How did you experience: • The lectures? • The tutorials on NetLogo? • The tutorials on EcoPrimer?	
What were the activities during which you learned most?	*e.g. individual work on assignments, group work, lectures, tutorials, feedback sessions?*
What was challenging with regard to the teaching? What worked well?	
Group Work	
How did you organize your group work?	*e.g scheduled meetings? ad hoc meetings? other courses*

	together? virtual?
How much time do you spend at campus during a regular week?	
What were typical places where you met?	
What was challenging with organizing group work? What worked well?	
Forms of assessment	
How did you experience the format of the portfolio assessment in general?	
How did you experience the different forms of assignments? • Group tasks? • Textbook assignments? • Individual assignment? • Peer review?	
What was challenging about those? What was useful?	
Feedback/helpful comments on your work	
In what ways did you think the feedback you received was useful? • Did that differ between different tasks? How?	
Did you always understand the feedback you received?	
Did you make use of the feedback in the further work - how?	
Did you use the feedback sessions (individual and/or group)? • If yes, did they add to your understanding of the feedback comments?	
Did you seek feedback from anyone else than the teachers?	*e.g. peers from the course, other friends*
Use of technologies	
Can you list all technologies that you have used for communicating or learning during the course?	*e.g. NetLogo, EcoPrimer, social media,*

What were your experiences with those technologies? What worked well, challenges? • Social media • Online tutorials	
What was your overall experience with digital technology in the course? • What worked well, challenges?	
Individual study	
How did you organize your own work with the course content?	*I.e. What was your strategy to get your work done?*
What other activities did you use? (besides the mandatory work)	
Contact with teaching staff and academic/professional community	
How did you experience the contact with the teaching staff within the organized course setting	*What type and how much?*
Did you have any contact outside the organized course setting?	*e.g. seminars, participation in research projects, other types of participation in the community*
Do you feel introduced to a larger academic community outside the local staff?	
Strengths and challenges of the course	
Do you have any suggestions for doing things differently? Why?	