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**Sustainability through a  
Phenomenon-based learning approach  
A study of student reflections**

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Tiivistelmä - Referat - Abstract <p>The purpose of this thesis is to study on how a phenomenon-based approach might evoke critical reflection on sustainability. By using the phenomenon-based learning (PhBL) approach, the aim of the study is to develop for transformative learning (TL) on sustainability. Sustainability as a concept is complex, interdisciplinary and transdisciplinary and requires broad and holistic education to address it. TL has been shown to be popular within the field of research on sustainability education. Sustainability being a value-laden topic, transformative learning and critical reflection are suitable methods for tackling it. However, TL is challenging, and research has shown that the learning will not always succeed. PhBL could be suitable for sustainability education and in TL. It uses collaborative learning, through which the social dimension also provides learning. The approach is learner centred, and the interest of the students guides the process and provides space for reflection and emotions.</p> <p>This qualitative, phenomenological and hermeneutic study was based on five (N=5) interviews with students who took part in an optional hybrid university course on the phenomenon-based approach, sustainability and World Heritage education. The interviews were conducted online as phenomenological interviews via Zoom and took place after the course was finished. The material was analysed with interpretative phenomenological analysis, which is an idiographic and inductive analysis method, suitable for going deep in the experiences of the students.</p> <p>The analysis revealed six themes: connection to nature, emotions about sustainability, cultural sustainability, sustainable studies, the process of PhBL, and emotions evoked by embodied exercises. Although, the data did not provide clear evidence, there were a few signs of change in attitudes and assumptions that can be interpreted as critical reflection. The online dimension clearly has an impact on the experiences in several ways. However, even if several experiences on emotions were reflected on and the PhBL process was challenging, it resulted in learning and acceptance. The results are in line with earlier research and can be used as guidance in future planning and implementing PhBL on TL and sustainability.</p>		
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Tiivistelmä - Referat – Abstract Tämän pro gradu -tutkielman tarkoituksena on tutkia, kuinka ilmiöpohjainen oppiminen lähestymistapana voisi herättää kriittistä reflektiota kestävydestä. Ilmiöpohjaisen oppimisen lähestymistapaa käyttäen tutkimuksessa tavoitellaan opetuksen kehittämistä kestävydestä erityisesti transformatiivisen oppimisen kautta. Kestävyys on monimutkainen ja monitieteinen käsite, jonka ymmärtämiseen ja käsittelemiseen tarvitaan kokonaisvaltaista ja laaja-alaista pedagogiikkaa. Kestävyys on arvolutautunut, minkä takia erityisesti transformatiivinen oppiminen ja kriittinen reflektio ovat sopivia metodeja sen käsittelemiseen. Transformatiivinen oppiminen on kuitenkin haastava prosessina sen monimutkaisuuden takia, mutta aiemman tutkimustiedon mukaan oppiminen ei aina onnistu. Ilmiöpohjainen oppiminen voisi olla sopiva lähestymistapa kestävyteen sekä transformatiiviseen oppimiseen. Lähestymistapa on oppijakeskeinen ja tarjoaa tilaa reflektoinnille ja tunteille.  Tässä laadullisessa fenomenologisessa ja hermeneuttisessa tutkimuksessa analysoitiin viisi (N=5) opiskelijahaastattelua. Haastateltavat olivat osallistuneet valinnaiselle yliopistokurssille ilmiöpohjaisesta oppimisesta, kestävydestä ja maailmanperintökasvatuksesta. Haastattelut toteutettiin fenomenologisina haastatteluinä etäyhteyksien kautta kurssin päättymisen jälkeen. Aineisto analysoitiin tulkinnallisen fenomenologisen analyysimenetelmän avulla. Analyysimenetelmä on idiograafinen ja induktiivinen, mikä sopii syvempään analyysiin kokemuksista.  Analyysin tulokseksi saatiin kuusi teemaa: Yhteys luontoon, Tunteita kestävydestä, Kulttuurinen kestävyys, Kestävät opinnot, Ilmiöpohjaisen oppimisen prosessi ja Kehollisten harjoitusten herättämät tunteet. Aineisto ei antanut vahvaa näyttöä kriittisestä reflektiosta. Analyysissä havaittiin kuitenkin viitteitä asenteiden ja ennakkokäsitysten muutoksista, jotka voidaan tulkita kriittiseksi reflektioksi. Kurssiin etätoteutus vaikutti osallistujien kokemuksiin monella tavalla. Vaikka monet kokivat epämiellyttäviä tunteita ja ilmiöpohjaisen oppimisen prosessin haastavaksi, johtivat ne hyväksymiseen ja oppimiseen. Tutkimustulokset ovat aiempien tutkimusten kanssa linjassa. Tuloksia voidaan käyttää tulevaisuudessa suunniteltaessa ilmiöpohjaiseen oppimiseen perustuvaa opetusta kestävydestä.		
Avainsanat - Nyckelord ilmiöpohjainen oppiminen, kestävä kehitys, kasvatus, kriittinen reflektio, transformatiivinen oppiminen, tulkitseva fenomenologinen analyysi		
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# 1 Introduction

The volume of education has increased and continues to increase, yet so do pollution, exhaustion of resources, and the dangers of ecological catastrophe. If still more education is to save us, it would have to be education of a different kind: an education that takes us into the depth of things. (Schumacher, 1997 in Sterling, 2010, p. 17)

The quote from Schumacher is more accurate today than ever. Indeed, humanity faces the climate crisis, severe environmental changes, and big social inequality challenges. In report *21 Issues for the 21<sup>st</sup> Century*, of the United Nations Environment Programme<sup>1</sup> (UNEP, 2012), the UN describes as cross-cutting issues that humanity needs to adapt to the global change and that there is a need to catalyse rapid and transformative changes in human behaviour towards the environment. There is a pursuit of actions for educational institutions to meet the need of sustainability better. There is also a need for development of 'new modes of learning' (UNEP, 2012, p. 7–8). Higher education needs to reconsider how to enable students and staff to deal with accelerating change, expanding complexity, debated knowledge claims, and inescapable uncertainty (Lotz-Sisitka, Wals, Kronlid, & McGarry, 2015, p. 73). Hence sustainability requires transformative learning processes (Lotz-Sisitka et al., 2015), and phenomenon-based learning (PhBL) can be used as an approach for understanding interdisciplinary and transdisciplinary sustainability issues (Lonka & Westling, 2018, p. 172; Wolff, 2022a, *in press*).

This thesis is an interpretative phenomenological study on how phenomenon-based learning might trigger students' reflection and especially critical reflection about sustainability and how students experience phenomenon-based learning. Critical reflection is the central dimension within transformative learning (see e.g., Mezirow, 1998; 2006; Taylor, 2007; 2017). Even though transformative learning has been researched a lot before (see e.g., Mälkki & Green, 2014; Taylor, 2007; 2017) this study attends phenomenon-based learning as an approach to critical reflection. However, phenomenon-based learning has not yet been widely

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<sup>1</sup> Henceforth I will refer to United Nations Environment Programme as its acronym UNEP.

covered by research (see e.g., Leppiniemi, 2016, p. 4) and is an indistinct concept with many roots (see Wolff, 2022a, *in press*).

The context of the research is an elective university course with a phenomenon-based learning approach on sustainability, and World Heritages for educational sciences students. Within higher education, educational sciences have a significant role in doing research and education for future teachers and experts on education. For a long time, teachers have been presented as key agents in the sustainability process (World Commission on Environment and Development, 1987; UNESCO, 2005). Therefore, teachers need knowledge of methods and processes of enhancing sustainability. A change in education is crucial, and the results of this study might help to formulate further research problems and develop educational methods on how to use phenomenon-based learning approaches in the process of critical reflection on sustainability.

This study is conducted as a part of the research project SveaSus - Sustainable World Heritage Learning through a Phenomenon-based Approach at the University of Helsinki.

## **2 Theoretical background**

In a rapidly changing world with severe environmental and climate crises there is a need for a thorough change within education. Education is a vital component in the sustainable development process (UNESCO, 2021). Sustainability education needs to be implemented crosscutting into all education, and especially within education (see Wolff, Sjöblom, Hofman-Bergholm & Palmgren, 2017). Transdisciplinary education and transformative learning are needed within sustainability education (see Sterling, 2010; Wolff & Ehrström, 2020). An interdisciplinary and transdisciplinary learning approach is phenomenon-based learning phenomenon-based learning. Jack Mezirow's transformative learning theory's central element, critical reflection (critical assessment of our habits of mind) (see e.g., Mezirow, 1991; 1998; 2006) is crucial in learning on sustainability. Phenomenon-based learning could be a suitable approach for evoking critical reflection and transformation about sustainability matters (see e.g., Wolff, 2022a, *in press*).

In this theoretical background I will first present the concept of sustainability, policies regarding sustainability, and sustainability education. The second part will consider transformative learning, critical reflection, and phenomenon-based learning, an indistinct and variously implemented approach with many roots, for tackling trans- and interdisciplinary phenomena such as sustainability.

### **2.1 Sustainability and sustainability education**

Sustainability education is the background of this study and the interest in the university course, which is the context of this study. Thus, it is relevant to start this chapter by defining sustainability and presenting the background on sustainability policies and education. Sustainability and sustainable development are two separate concepts. In brief, sustainability is a long-term goal for sustainable development (UNESCO, 2021). Sustainable development is a development that meets the needs of present humanity without jeopardising future generations' ability to meet their own needs (UNESCO, 2021). Sustainable development is a theoretical construct, and sustainability within the frame of

human experience is difficult, and might even be impossible to achieve (Roosa, 2010b, p. 1). In this sub-chapter the concept of sustainability, sustainability policies and sustainability education will be presented as a background for understanding how transformative learning and phenomenon-based learning might be suited for sustainability education.

### 2.1.1 Sustainability and sustainability policies

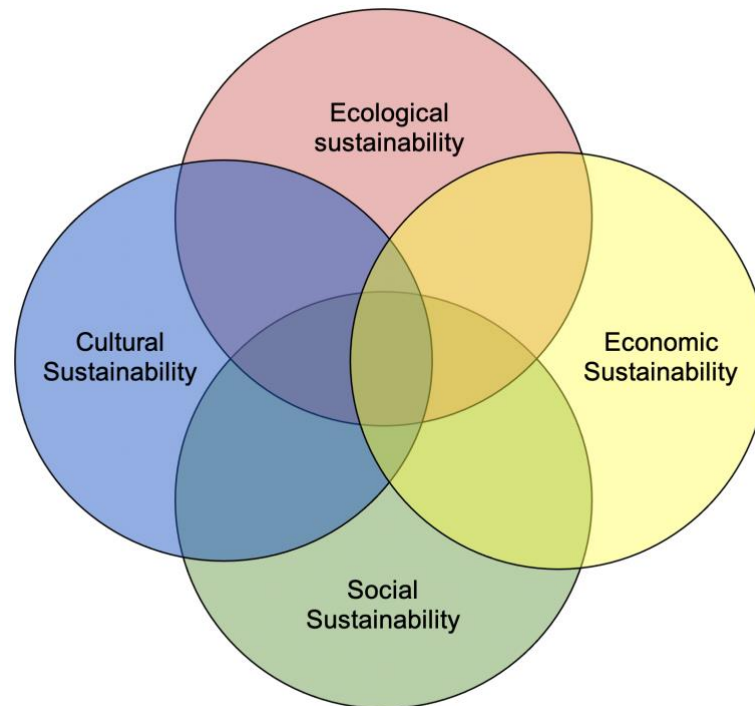
The sustainability concept started emerging in the environmental movement in the 1960s (Roosa, 2010c, p. 36). The Brundtland Report in 1987 declared sustainable development to be a global political agenda with the following definition of sustainable development:

--sustainable development is a process of change in which the exploitation of resources, the direction of investments, the orientation of technological development; and institutional change are all in harmony and enhance both current and future potential to meet human needs and aspirations. (World Commission on Environment and Development, 1987, I. The Concept of Sustainable Development)

There are many ways of defining dimensions of sustainability and sustainable development. UNESCO (2021) presents that sustainable development can be divided into three or four dimensions: 1) ecological, 2) economic, 3) social, (and 4) cultural, which is divided from the social dimension) (see **Error! Reference source not found.** A). The dimensions are intertwined and complexly interrelated (UNESCO, 2021; Wolff et al., 2017, p. 2). Therefore, sustainability is a paradigm for thinking about the future in which all the dimensions are balanced in the inquiry of improvement of life (UNESCO, 2021).

There is not really a coherent view on sustainability nor is there a consensus among researchers on where the focus should lie (see e.g., Roosa, 2010a, p. xviii). Understanding the concept of sustainability is a complex task (Roosa, 2010b, p. 2). Sustainability is a multifaceted and interdisciplinary matter related to the local and global occurrence and focuses cotemporally on humans living today and in the future (Wolff et al., 2017, p. 2). Sustainability is too complex for

any single discipline alone to understand it fully, thus it needs interdisciplinary and transdisciplinary understanding and research approaches.

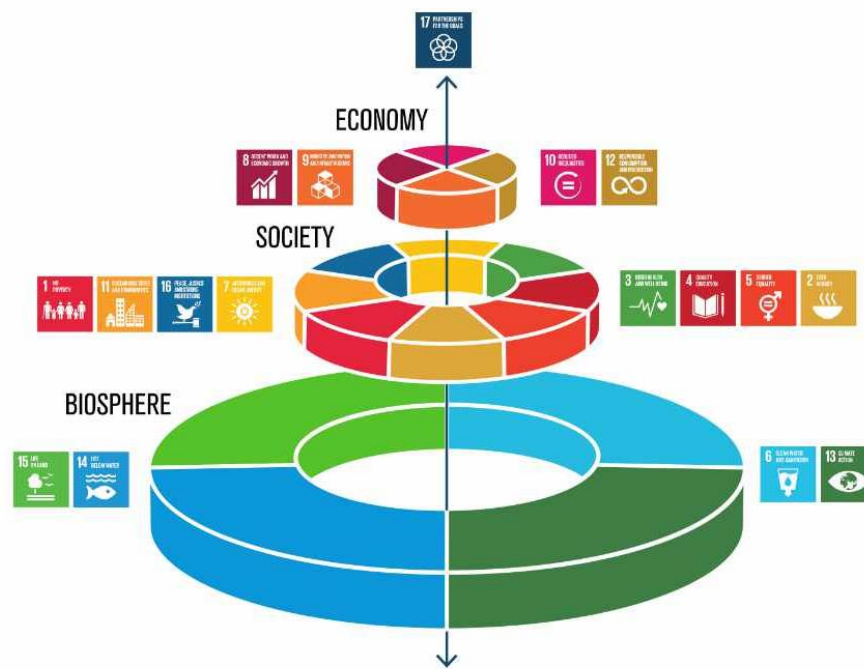


**Figure 1. The four dimensions of sustainability. Modified by the author according to the definition of sustainable development by UNESCO (2021).**

There are several emphases when discussing sustainability, even though there is no consensus on where the focus should lie. Agenda 2030, a policy paper, sets an emphasis on the social dimensions of sustainability with a larger number of goals regarding the social dimension than the ecological dimension. There are critical views on that emphasis. Folke, Biggs, Norström, Reyers and Rockström (2016) discuss the intertwined role of society and the biosphere (ecological dimension). Often the tendency is to shift the focus more towards the social or societal sustainability, whereas Folke et al. (2016) argue that, since the society is intertwined with and dependent on the biosphere, the focus should lie there instead of on the social dimension (see Figure 2).

The United Nations in 2015 endorsed the political *2030 Agenda for Sustainable Development* (Agenda 2030) and *Sustainable Development Goals* (SDGs) to route the furtherance of sustainable development from 2016 until 2030 (United

Nations, n.d.). Agenda 2030 presents 17 Sustainable Development Goals (SDGs) and 169 targets for action for humanity and the planet.



**Figure 2. A new way of viewing the Agenda 2030 sustainability goals (Azote for Stockholm Resilience Centre, Stockholm University (CC BY 4.0)).**

Agenda 2030 is a plan for reaching a more sustainable world and “seeks to strengthen universal peace in larger freedom” (United Nations, n.d.). In the introduction, Agenda 2030 addresses “the five Ps of sustainability”: people, planet, prosperity, peace, and partnership, under which the SDGs are divided. Agenda 2030 emphasises strongly social sustainability: equity, equality, and human rights. Ten goals focus on enhancing equality, four on the environment and four on economy. Goal 4 is about education: “Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all” (United Nations, n.d.). Agenda 2030 states the following SDG (Sustainable Development Goals) 4.7 about education:

By 2030, ensure that all learners acquire the knowledge and skills needed to promote sustainable development, including, among others, through education for sustainable development and sustainable lifestyles, human rights, gender equality, promotion of a culture of peace and non-violence, global citizenship, and appreciation of cultural diversity and of culture’s contribution to sustainable development (United Nations, n.d., p. 19)

Agenda 2030 is often referred to within educational contexts; education has a significant role in acting for a more sustainable world. However, the Sustainable Development Goal Report 2020 reports that human actions still are posing a threat for the future (UN DESA, 2020). This is because of insufficient progress in meeting the necessary requirements to keep the promise of Agenda 2030 (UN DESA, 2020). Even if education is viewed as a solution, education itself might not lead to a more sustainable world, but to the contrary direction by maintaining or increasing inequality based on socioeconomic status, race, and ethnicity (UN DESA, 2020). Even in Finland, which is globally regarded as one of the leading countries on education (see e.g., OECD, 2018), has failed to make the changes needed within university teacher education, for example (see e.g., Cockerell, 2020; The Nordic Council of Ministers, 2021; Wolff et al., 2017). There is a lot of literature about the need for radical learning centred transformation on sustainability concerns (Lotz-Sistika et al., 2015, p. 73). This thesis acknowledges this need and approaches sustainability challenges from an educational perspective of transformative learning and phenomenon-based learning. Next, sustainability education is presented, which will set the base for discussing transformative learning and phenomenon-based learning.

### **2.1.2 Sustainability education**

In the 1960s the awareness of the threat of environmental degradation rose, and sustainability education took form then (Gough, 2013, p. 14). After the UN Conference on Environment and Development in Rio de Janeiro in 1992, the concept of education for sustainable development (ESD) became more common in educational policy documents and included three dimensions of sustainable development, i.e., ecological, social, and economic (Wolff et al., 2017, p. 2). Varying terminology is used in research literature on sustainability education. Terms such as sustainability education, education for sustainable development (ESD) or education for sustainability (EfS) are used (Wolff, Skarstein & Skarstein, 2020, p. 7). Also, in Finland the curricula have implemented sustainability from early childhood education to higher level education and at the level of the Finnish Act (see e.g., Mykrä, 2021; The Nordic Council of Ministers; 2021).

There are many definitions of sustainability education. One definition, which this thesis refers to when writing about sustainability education, is that sustainability education is based on three linked dimensions: education *about*, *for* and *as* sustainability (O'Neil, 2018, p. 365). This means that education also needs to be sustainable itself. Sustainable development is also a social learning process (see e.g., Vare & Scott, 2007, p. 194). For teaching sustainability, Öhman and Sund (2021) addressed the sustainability commitment and proposed a didactical model for it. Sustainability commitment is “a desire and ability to contribute to a sustainable transformation of our world” (Öhman & Sund, 2021, p. 2). Sustainability commitment is positioned in the juncture of intellectual, emotional, and practical aspects of sustainability (Öhman & Sund, 2021, p. 1). Education needs a holistic grip in the learning for which phenomenon-based learning (see more in chapter 2.3) could be a suitable learning method.

Many wicked problems within sustainability education might be hard to teach about because of it being value-laden (see e.g., Wolff et al., 2017; Wolff & Ehrström, 2020). Teaching about climate change might evoke difficult emotions, e.g., anxiety (see Pihkala, 2017; 2018). The emotional dimension of sustainability education is inevitable, and teachers need to scaffold the students' learning processes (see e.g., Pihkala, 2017). Eco-anxiety (an umbrella term used by Panu Pihkala (2017) for several difficult emotions regarding ecological crises) is probably strongly experienced within the learners, thus is it inevitable that the relationship between hope, optimism, and also tragedy will be emphasised (Pihkala, 2017, p. 109). Nonetheless, results in Maria Ojala's (2020) study on senior high-school teachers' beliefs about the role of emotions in climate change education revealed that some teachers disapproved especially negative emotions in the classroom since they are regarded as irrational (p. 48). It is important to acknowledge worry and other negative emotions, by helping young people to recognise the feeling, and to have them discussing this feeling before addressing the problem that causes the emotion (Ojala, 2019, p. 6). Pedagogy of hope (see e.g., Freire, 1994) is a crucial part of sustainability education. Freire's reflections in *Pedagogy of hope: Reliving Pedagogy of the Oppressed* can be summed up by stating that hope alone does not achieve anything but without hope there would be no motivation to struggle. Wolff (2022a, *in press*) writes that

education must be built from an ethical viewpoint when confronting the future, even though emotions are important in sustainability education (see Pihkala, 2020).

There is also other literature and studies on sustainability (or environmental) education (see e.g., Assadourian & Mastny, 2017; Cantell, Aarnio-Linnavuori & Tani, 2020; Värri, 2019; Wolff & Ehrström, 2020; Öhman & Sund, 2021). As is emphasised in policy documents (see e.g., United Nations, n.d.; UN DESA, 2020; UNEP, 2012) the change in attitudes and values within adult education emphasise transformative learning and critical thinking (see e.g., Weinberg, Trott, Wakefield, Merrit & Archambault, 2020; Wolff, 2022b, *in press*). In the next chapter I will present a learning theory and an approach (transformative learning and phenomenon-based learning) which are used within sustainability education.

## **2.2 Transformative- and phenomenon-based learning**

Transformative learning (TL) has been widely used in the field of sustainability (Rodríguez Aboytes & Barth, 2020, p. 1004). Transformative learning suits sustainability education well, since it is a value-laden concept (see Wolff & Ehrström, 2020, p. 7; Wolff, 2022b, *in press*). If carefully studied, transformative learning can “contribute to the design and implementation of the assessment of learning as well as to educational inventions towards sustainability” (Rodríguez Aboytes & Barth, 2020, p. 1006). However, it has been proposed that the main reason for the inefficiency of environmental education is the lack of transformative learning (see Sterling, 2010). In a systematic literature review on papers about transformative learning, Jorge Gustavo Rodríguez Aboytes and Matthias Barth (2020) found that transformative learning has been used broadly in sustainability learning and in research on Education for Sustainable Development, but that there is extensive superficial use of it (p. 1006). Transformative learning is challenging for the learner as is designing transformative education (see Sterling, 2010, p. 29). There is a need for educational approaches that could take the learner into the depth of things, such as understanding and questioning societal

paradigms (see Sterling, 2010). Such an approach could be phenomenon-based learning (see Wolff, 2022a, *in press*).

The transformative learning theory offers a deep and broad definition on reflection within adult education (Mezirow, 1991; 2006). One of two major elements of Mezirow's transformative learning theory is critical reflection or critical self-reflection on assumptions, that is, critical assessment of the habits of mind (Mezirow, 2006, p. 94). Critical reflection is in focus in this thesis, and I will use the definition which is based on Mezirow's theory of transformative learning (Mezirow, 1981; 1991; 1998; 2006). Promoting critical reflection, is often linked to teaching strategies or approaches such as problem-based learning (related to phenomenon-based learning), dialogue or journaling (e.g., learning diary) (see e.g., Taylor, 2017, p. 80), which all are often used within education. One aim of this thesis is to research whether phenomenon-based learning might awaken educational sciences students' critical reflection on sustainability.

This chapter will first present the theoretical background for this thesis, starting with Jack Mezirow's (1981; 1991; 1998; 2006) theory on transformative learning and following with presenting and second, define critical reflection, one major element in the theory of transformative learning. Third, the phenomenon-based learning approach and its background will be presented, as well as, how it is addressed in the educational policy documents within Finland.

### **2.2.1 Transformative learning theory – a theory in progress**

Transformative learning is a process within adult education in which the learner transforms problematic standpoints or reference frames (assumptions or expectations) to make them more inclusive, open, reflective, and emotionally able to change (Mezirow, 2006, p. 92). The theory of transformative learning was first introduced in the field of adult education in 1978, but it has evolved and gone through various points of critique since then (Mezirow, 2006). The theory is built on the thoughts and theories by scholars and philosophers like Karl Popper, Paulo Freire, Jürgen Habermas, John Dewey, and Thomas Kuhn (see e.g., Kitchenham, 2008; Mezirow, 1991; Wolff, 2022b, *in press*). Inspired by

Habermas' domains of learning, Mezirow meant that each learning domain (the technical, the practical and the emancipatory) suggests a different mode of learning and learning needs on a personal level (Mezirow, 1981, p. 4). Freire's (1993/1970) 'conscientization' (critical consciousness) also informed Mezirow's early work. The perspectives or habits of mind include the sociolinguistic habits of mind, moral-ethical (values), learning styles, religious or transcendental world views, psychological dispositions, health experience and aesthetic dimensions (Mezirow, 2006, p. 92).

The process of transformative learning involves ten cumulative phases, which have gone through changes since Mezirow first suggested the theory in 1978 (Mezirow, 1991; 2006). Transformative learning has been researched extensively (see e.g., Mälkki & Green, 2014; Rodríguez Aboytes & Barth, 2020; Taylor, 2007; 2008; 2017; Wolff & Ehrström, 2020). There are many of studies on transformative learning in similar settings (Taylor, 2007, p. 175) as the research in this thesis. That is, a setting in formal higher education for graduate students (Taylor, 2007, p. 175). The literature review (Rodríguez Aboytes & Barth, 2020) reveals an extensive spectrum of potential learning outcomes for transformative learning, although it remains unsure if transformative learning represents a learning outcome itself or as a method for achieving cognitive and non-cognitive outcomes (p. 1004). In this thesis I am not interested in the fact whether transformative learning occurs either as a method or aim, but more in whether the students undergo a change of perspective in their own reflections, that is, critical reflection.

Transformative learning received a lot of criticism (see e.g., Taylor, 2007; 2017; Mälkki & Green, 2014). Taylor (2017) means that transformative learning has been accepted, often without question, "about its meaning, ways of assessment, and role in relationship to transformative learning theory" (Taylor, 2017, p. 88). Taylor remarks (2007) that transformative learning has been under research for deeper understanding by focusing closely on certain aspects or microprocesses of transformative learning, instead of being tried to understand the theory as an entirety. The tendency has also been from a diagnostic viewpoint: has transformative learning occurred or not, instead of focusing on the process itself

(Mälkki & Green, 2014, p. 6). Kaisu Mälkki has studied transformative learning with aims of developing the theory as well (see e.g., Mälkki, 2010; Mälkki & Green, 2014). Transformative learning theory is a theory in progress, which Mezirow himself has indicated (Wiessner & Mezirow, 2000, p. 356).

### **2.2.2 Critical reflection**

Reflection is used widely within educational studies at university-level and especially within teacher education (see e.g., Lahtinen & Toom, 2009). Many researchers start with John Dewey's definition on reflection: "the active, persistent and careful consideration of any belief or supposed form of knowledge in the light of the grounds that support it and the further conclusion to which it tends" (Dewey, 2012/1910. p. 6). Within Mezirow's transformative learning theory this definition on reflection is called validity testing and his definition on the theory of reflection is built on Dewey's definition of reflection (Mezirow, 1991, p. 100–101).

Critical reflection has been shown in research to be essential in transformative learning (Taylor, 2007, p. 185). Critical reflection seems to be a developmental process, which is based on experience (Taylor, 2007, p. 11). Even though Mezirow's theory on transformative learning has been widely defined and elaborated (Mezirow, 1981; 1991; 1998; 2006), the origins and dynamics of reflection itself has been less examined although the purpose, significance, and objects of reflection are widely covered in Mezirow's writing and that of other researchers (see Taylor, 2008; Mälkki, 2010). Mälkki and Green (2017) highlight the liminality, the boundary between the knowing and not knowing during the process of transformative learning and critical reflection. They also write about edge emotions that Mälkki (2010) writes about appearing when forced out of one's comfort zone:

We experience anxiety, depression, or other related feelings when our earlier beliefs, attitudes, or values become problematized or when we are not able to understand situations based on our previous experiences, or, when our relationships or acceptance from significant others become questioned. (Mälkki & Green, 2017, p. 13)

The emotional dimension is emphasised, which is in a crucial role in the process of critical reflection (Mälkki & Green, 2017, p. 18) as well as it is in sustainability education (see e.g., Wolff, 2022a, *in press*; 2022b, *in press*). Mälkki & Green (2014) also suggest that one of the more important roles university teachers have is to be with the students when meeting the uncomfortable *edge emotions* when facing liminality (p. 17). Taylor (2007) concludes of the importance of “engaging learners in classroom practices that assist in the development of critical reflection through use of reflective journaling, classroom dialogue and critical questioning” (p.11).

Taylor provides a wide picture of the development of the term ‘critical reflection’ (Taylor, 2017, p. 78–79). Critical reflection was first defined by Mezirow in relation to transformative learning as critical reflectivity with seven levels of reflection, where the deepest levels are suggestive of critical consciousness (Mezirow, 1981, p. 13). Later Mezirow encapsulated the levels into three dimensions of reflection; content reflection, process reflection and premise reflection (Mezirow, 1991, p. 104–109). Premise reflection is the reflection through which one becomes aware of why one perceives, thinks, feels, or acts as one does (Mezirow, 1991, p. 108), and this premise reflection is referred to as *critical reflection of assumptions* (Mezirow, 1998). When researching on transformative learning many researchers use a coding scheme which is grounded in Mezirow's definition 1991 (see Bell, Kelton, McDonagh, Mladenovic & Morrison, 2011; Kember, 1999). Critical self-reflection on assumptions was collapsed into critical reflection (Taylor, 2017, p. 79) which is the commonly used term. In this thesis the most important definition is Mezirow's premise reflection (1991), since it has been widely used when defining levels of reflection (content, process, and premise reflection). Premise reflection is concluded by Kreber (2004) as involving critically “questioning out presuppositions underlying our knowledge” (p. 31). I use the term critical reflection to represent this.

### **2.2.3 The background of Phenomenon-based learning**

Phenomenon-based learning as a concept has many roots and can neither be viewed as a theory nor as a method, but as an approach, which has its base in

constructivism, pragmatism, and phenomenology (Wolff, 2022a, *in press*). Despite the unclear principles of phenomenon-based learning (Wolff, 2022a, *in press*), phenomena and phenomenon-based learning are widely discussed and referred to within the Finnish educational policies, since the 2014 national curriculum for basic education emphasise phenomena and subject integrative learning as a basis in teaching (Finnish National Board of Education, 2014). Schools in Finland have been arranging longer multidisciplinary learning modules as cooperation between several subjects since the 2014 curriculum came into effect (Finnish National Board of Education, 2014, 4.4 Integrative instruction and multidisciplinary learning modules).

Phenomenon-based learning has many roots and has been widely used as a concept, for complex phenomena, sustainability or science education (see e.g., Lonka, 2018; Østergaard, Dahlin & Hugo, 2008; Wolff, 2022a, *in press*; Wolff, Savijärvi, Wallinheimo, Schaffar, Slotte, Mikander & Kaihovirta, 2019). Even though phenomenon-based learning has been addressed within a Finnish context as a new concept, the comprehensive approach had been discussed much earlier (see e.g., Rauste-von Wright, Soini & von Wright, 1996; Rauste-von Wright, Soini & von Wright, 2003). In a paper in 1996 Maijaliisa Rauste-von Wright and Johan von Wright wrote about the problem with the curricula splitting learning contents, when the world consists of more expansive matters (p. 2–3). Kirsti Lonka, Lasse Lipponen, and Kai Hakkarainen have continued the work on phenomenon-based learning which Maijaliisa Rauste-von Wright started by basing the approach (she called phenomenon-centred learning) on the pragmatist philosophy of John Dewey and G. H. Mead (Lonka & Westling, 2018, p. 178). Dewey's view on learning is that it should be relevant and practical, preferably than only theoretical and G. H. Mead's idea is to foster a cohesive world view instead of categorisations and dualist dichotomies between the mind and the body (Lonka & Westling, 2018, p. 178).

Phenomenon-based learning is often grounded in inquiry-based learning (see Hakkarainen, Lonka & Lipponen, 2004), in which learning and knowledge are constructed in collaboration and the learner has an active role. Furthermore, phenomenon-based learning is also based philosophically in phenomenology

(see e.g., Küpers, 2012; Merleau-Ponty, 2014; Wolff et al, 2019; Østergaard et al., 2008). SveaSUS (the research project) researchers use phenomenon-based learning based in phenomenology in the university course on which this study has been conducted (Wolff, 2022a, *in press*). However, the applied process of phenomenon-based learning have elements of the constructivist model presented by Lonka and Westling (2018). The process of phenomenon-based learning in both SveaSUS (see Wolff, 2022a, *in press*; Wolff, et al., 2019) and Lonka (2018) has common elements as problem-based learning and inquiry-based learning (see e.g., Hakkarainen et al., 2004). Thus, I will also refer to research based on constructivist phenomenon-based learning throughout this study, since they do not definitely exclude each other.

#### **2.2.4 What is phenomenon-based learning?**

Phenomenon-based learning is derived from the notion phenomenon, which has its roots in the philosophy of phenomenology (see e.g., Merleau-Ponty, 2012; 2014). The learning approach is complex and requires cognitive skills, whereas the process is embodied and emotional (Küpers, 2012, p. 2611). Furthermore, Küpers (2012) adds that learning within a phenomenon-based learning approach can be characterised as the ability to revise patterns of feeling, thinking, and acting while intentionally containing changes and developing new competencies and orientations (p. 2611). Learning can also be individual and/or collective performance and a dynamic process (Küpers, 2012, p. 2611). Vasileios Symeonidis and Johanna F. Schwartz discuss on the phenomenology of phenomenon-based learning:

Learning is always learning of something, for particular purposes and from someone. From a phenomenological perspective, learning as an experience implies that students must undergo experiences; they cannot construct them. And this situation gives rise to an element of uncertainty and ambivalence, which educators need to be prepared to encounter. (Symeonidis & Schwartz, 2016, p. 43)

The student might encounter experiences during the phenomenon-based learning process that they and the teacher cannot foresee or plan for. Thus, the experiences are an inevitable part of learning. Also, Østergaard et al. (2008)

emphasise that inclusion of the students in the learning process is important, since learning should not separate the student from their own experiences and life histories (p. 113).

Many of the problems and phenomena humans need to tangle with are often exceedingly difficult and complex (Lonka, Hietajärvi, Hohti, Nuorteva, Rainio, Sandström, Vaara & Westling, 2015, p. 34). Küpers (2012) means that “[f]rom a phenomenological perspective multidimensional processes of learning take place in a distinct way as compared to other approaches” (p. 2611). A central focus of this thesis and the course is *sustainability*, which a complex and interdisciplinary phenomenon (see e.g., Wolff et al., 2017, p. 2). In phenomenon-based learning the learner is supposed to go beyond one discipline and explore their way through a learning project (Lonka & Westling, 2018, p. 172). The approach is not an effortless process and there is not just one way to carry out phenomenon-based learning projects (Lonka & Westling, 2018, p. 179). Furthermore, the process is creative and can trigger reflections on one's values (see e.g., Wolff et al., 2019). Therefore, phenomenon-based learning could act as a catalysator for critical self-reflection.

Phenomenon-based learning can use collaborative creation, in which the new skills and knowledge are built on previous mental models and results in a more coherent mental model (see Lonka & Westling, 2018, p. 179; see also: Francis, Breland, Østergaard, Lieblein & Morse 2013; Küpers, 2012; Wolff et al., 2019). When working collaboratively the knowledge is composed socially scattered (see Hakkarainen et al., 2004, p. 182). That is, the various knowledge, experiences and observations within a group can be used mutually within the group (Lonka et al. 2015, p. 39). It is important that the participants define the tasks and roles to succeed in the working process (Lonka & Westling, 2018, p. 181). Collaborative work also has challenges. Because group work is independent and not directed by the teacher, the workload and responsibilities can be uneven distributed between the group members and enable freeloading (Lonka et al., 2015, p. 39). However, Lonka et. al (2015, p. 60) have stated that the appearances of the participant do not always state the degree of commitment, since the members can act in diverse ways, as listeners, discussants, or as leaders. Collaborative

work can also be considered to be difficult and a source of conflict (Litmanen, Lonka, Inkinen, Lipponen & Hakkarainen, 2012, p. 1094). Differences in opinions can still result in a compromise, which suits all participants in the group, as shown in earlier research on phenomenon-based learning on a university course (see Wolff et al., 2019, p. 131–133). It is important, that the learning process is continuously maintained and supported (Lonka et al., 2015, p. 39). The teacher has a vital role as a scaffolder and has the responsibility to take care of the goals during the learning process (Lonka & Westling, 2018, p. 180).

Phenomenon-based learning can be emotional for the learners. In their paper on learning something foreign/strange Hwang and Roth (2008) studied what emotions about something strange may launch. The study shows that the living body is central in the experience of the strange, and that empathy is central in the learning (Hwang & Roth, 2008, p. 956). Phenomenon-based learning can also involve emotional challenges. Earlier research show that the phenomenon-based learning process can evoke both positive and negative emotional experiences, and often associated to the process of the group work (see e.g., Litmanen et al., 2012, p. 1094). Therefore, an important aspect of phenomenon-based learning is learning how to tolerate difficult emotions such as ambiguity, uncertainty, confusion, and anxiety (Lonka & Westling, 2018, p. 188). Edge emotions (see Mälkki, 2010; Mälkki & Green, 2014 and chapter 2.3.2) have been typically reported during phenomenon-based learning projects (Lonka & Westling, 2018, p. 188). Edge emotions are a phenomenon in the critical reflective process and transformative learning (see Mälkki, 2010; Mälkki & Green, 2014), and thus phenomenon-based learning seems to be a suitable approach in relation to transformative learning and critical reflection.

### **2.2.5 Phenomenon-based learning in the Finnish curricula**

The Finnish national core curriculum for basic education accents the subject integrative learning and holism as important methods (Finnish National Board of Education, 2014). The focus lies within the curriculum on seven cross-cutting transversal competence areas. The areas are 1) thinking and learning to read, 2) cultural competence, interaction, and self-expression, 3) taking care of oneself

and managing daily life, 4) multiliteracy, 5) information and communications technology (ICT) competence, 6) working life competence and entrepreneurship, and 7) participation, involvement and building of a sustainable future (National Board of Education, 2014, section 3.3). Even though the public discussion of phenomenon-based learning often relies on the National curriculum for basic education, the concept of *phenomenon-based learning* is not mentioned at all in the Finnish or Swedish versions of the curriculum basic education (see National Board of Education, 2014). The word phenomenon (Finnish: *ilmiö*) is mentioned 224 times in the Finnish language version, and in the Swedish language version *fenomen(en)* (phenomenon or phenomena) 130 times, *fenomenbaserat/-d* (phenomenon-based) three times. However, the curriculum 2014 discusses Integrative instruction and multidisciplinary learning modules:

Integrative instruction is a vital part of a school culture that supports comprehensive basic education. The purpose of integrative instruction is to enable the pupils to see the relationships and interdependencies between the phenomena to be studied. It helps the pupils to link knowledge of and skills in various fields and, in interaction with others to structure them as meaningful entities. (Finnish National Board of Education, 2014, p. 52)

This citation is remarkably close to the definition of what phenomenon-based learning is in practice (see e.g., Lonka et al., 2015; Lonka & Westling, 2018; Østergaard et al., 2008). Phenomena are the premiss and the concept of integrative instruction should be integrated into the school culture, not only as a pedagogical approach. This is an example of how the concept of phenomenon-based learning (even though the name of the concept is different) is changing how teaching and learning within basic education is arranged in Finland.

### **2.3 Summary on background and theory**

Sustainability is a complex, interdisciplinary and transdisciplinary phenomenon with several dimensions, e.g., ecological, social, cultural, and economic, of which all need to be addressed. Even though there is a global will and Agenda 2030 (UN, n.d.) for working toward sustainability on all dimensions, there is still considerable work to do especially on the educational aspect. Within sustainability education, there is no consensus among researchers on what the

emphasis should be on. Interdisciplinary and transdisciplinary grips with room for tackling various emotions are important, and this thesis focuses on transformative learning (especially on critical reflection) and phenomenon-based learning as approaches and processes for learning on sustainability. Transformative learning is an adult education theory in which the learner undergo a process of deeper change in their attitudes and pre-suppositions. An important aspect of transformative learning is critical reflection, that is critical self-reflection of one's assumptions. phenomenon-based learning is an approach for complex and transdisciplinary phenomena, in which knowledge is created collaboratively, and the approach is adequate for evoking critical reflection and learn about sustainability.

### 3 Research task and research questions

This is a qualitative interpretative phenomenological study on the reflections on experiences that students have after taking part in a university course about sustainability through a phenomenon-based learning approach. The focus is on five interviews with educational sciences students, all of whom have participated in a multilingual university course about phenomenon-based learning, sustainability, and World Heritage at the University of Helsinki in 2021. The analysis has been undertaken about five students' phenomenological interviews with an interpretative phenomenological analysis (IPA), which is an idiographic, inductive, and deep analysis method (see Eatough & Smith, 2017; Smith, 2004).

The research questions for this thesis are the following:

- 1) How are the students reflecting on sustainability after their experiences from the course?
- 2) How are the students reflecting on phenomenon-based learning after their experiences from the course?

The thesis has been written as a part of the research project entitled *The Suomenlinna Project: Sustainable World Heritage learning through a phenomenon-based approach*. The project aims are to develop sustainability education based on a phenomenon-based approach (University of Helsinki, 2022). The project is being funded by The Swedish Cultural Foundation in Finland.

## 4 Research work

In this chapter I will first present the research strategy and design, and the philosophy of phenomenology, hermeneutics, and hermeneutical phenomenology are also briefly presented. Second, the context of the course is described. Third, I will report on material acquisition methods and what material has been used for the study. In the fourth sub-chapter, I describe the analysis method of the thesis, interpretative phenomenological analysis (IPA). Finally, research integrity and ethical issues are discussed.

### 4.1 Research strategy and -design

The design of the thesis is a qualitative study with a phenomenological and hermeneutic approach. The analysis method is a mixture of both phenomenology and hermeneutics; interpretative phenomenological analysis (IPA). The phenomenology considers gaining different experiences of the same course. In this chapter I will present the philosophy of *phenomenology*, *hermeneutics*, and *hermeneutic phenomenology* on which the thesis and analysis method are founded for a deeper understanding on the analysis method.

#### 4.1.1 Phenomenology

This study is foremost a phenomenological study since the interest lays at gaining information from the same course (event) but as different experiences, from the students. Phenomenology as a notion is from *phainomenon* (existing thing) and *logos* (knowledge) in the Greek language (Leijonhufvud, 2008, p.12). This is the foundation developed by the philosopher and mathematician Edmund Husserl (1859–1938) about the philosophy and movement of phenomenology. Max van Manen writes the following about phenomenology:

[P]henomenology does not offer us the possibility of effective theory with which we can now explain and/or control the world, but rather it offers us the possibility of plausible insights that bring us in more direct contact with the world. (van Manen, 1990, p. 9).

Phenomenology is a yet developing philosophy that considers the understanding of phenomena as it is available for those who experience it (Allwood & Erikson, 2017a, p. 91, van Manen, 1990, p. 10). The definition of phenomenon-based learning in the theory of this study is rooted in Merleau-Ponty's thoughts on phenomenology. Merleau-Ponty gave the phenomenological movement the dimension of the lived body, or embodiment (see e.g., Merleau-Ponty, 1999). Within phenomenology as a method the researcher is interested in the lifeworld of other peoples (Allwood & Erikson, 2017a, p. 97–98 ). It is fundamental to leave one's assumptions to one side before undertaking phenomenological analysis; this is called a phenomenological reduction or bracketing (Allwood & Erikson, 2017a, p. 93; Giorgi, Giorgi & Morley, 2017, p. 178). In this study the IPA method acknowledges the classic bracketing, but the researcher acknowledges the fore-understanding and attitudes before conducting analysis. In other words, it is enough for the researcher to acknowledge the assumptions.

#### **4.1.2 Hermeneutics**

The philosophy of hermeneutics is described as a philosophy of interpretation and how to understand and make meaning (Allwood & Erikson, 2017b, p. 109). Hermeneutics has its roots in interpretation in biblical exegesis (interpretation of texts in the Bible) thousands of years ago (Leijonhufvud, 2008, p. 13). Hermeneutics today is the philosophy of analysing texts, statements and such, the understanding of the message behind the utterance (Allwood & Erikson, 2017b, p. 109). Friedrich Schleiermacher (1768–1838) is seen as the father of the movement of hermeneutics, and he developed a model of hermeneutical understanding, which he called a hermeneutical circle. The model describes the relationship between the understanding of the detailed parts and the totality, or context. In other words, the hermeneutical understanding is that something can be written that means something else. This study is hermeneutic because of using an analysis method in which interpretation is used in addition to phenomenology.

### **4.1.3 Hermeneutic phenomenology**

In hermeneutic phenomenology interpretation is a part of the phenomenological process. Hermeneutic phenomenology, as a philosophy, is interested in the human world as we (humans) find it in all its aspects (van Manen, 1990, p. 19). Martin Heidegger, Husserl's famous student, claimed that interpretation was the true method of phenomenology (Giorgi et al., 2017, p. 180). Hermeneutic phenomenological methods have been based on Heidegger's views within philosophy and psychology (Giorgi et al., 2017, p. 180). Other representatives of hermeneutic phenomenology at the forefront are Gadamer and Ricoeur (van Manen, 2011). Max van Manen (1990) clarified hermeneutic phenomenology to human science research: doing hermeneutic phenomenology is attempting to "accomplish the impossible: to construct a full interpretive description of some aspect of the lifeworld, and yet to remain aware that lived life is always more complex than any explication of meaning can reveal" (van Manen, 1990, p. 18). It is impossible to do a complete phenomenological reduction and that full descriptions are unreachable (van Manen, 1990, p. 18). Even though both phenomenology and hermeneutics have been used in this study, the emphasis is on phenomenology, thus the study is a phenomenological and hermeneutic study.

## **4.2 Context**

Work on this thesis was conducted during and after a university course about phenomenon-based learning, sustainability, and World Heritage. The course was a multilingual presentation (Swedish, Finnish and English languages were used) and a voluntary course part of a sustainability module open for all students at the Faculty of Educational Sciences at the University of Helsinki. The participants in the course were primary teaching students, early childhood education teaching students, general and adult education students, and students from an international master's programme offered by the faculty.

The course was a multidisciplinary and place-conscious course, in which the place is emphasised (see e.g., Gruenewald, 2003). In this context the place-consciousness emphasises a specific place as a learning environment which is Suomenlinna, a historical site situated on eight islands in Helsinki, which is one of UNESCO's World Heritage sites. Hence, the course was supposed to take place there. However, due to the COVID-19 pandemic, the course was conducted fully as a hybrid online-course with a two-hour starting lecture, three full days with several shorter lectures, and two workshops with embodied exercises. The other workshop was driven by doing the exercises in nature, at Suomenlinna or at a nearby nature site that was convenient for the student. As activities in nature have been reported as being valuable to transformative learning processes (see Blake, Sterling & Goodson, 2013), this is an interesting premise for the interests in this study.

Work for the course included a course essay, three diary entries as a stream-of-consciousness as text, or in audio, or video format, and during the course a phenomenon-based digital storytelling group project. The students were divided into four random groups to make a digital Storytelling project. The digital Storytelling project covered audio-visual narrative methods and techniques to tell a story about each groups' own chosen phenomenon in relation to sustainability of interest and / or the other themes (World Heritage education) of the course. Because the course was open to all educational sciences students, the groups consisted of students with a range of study backgrounds, languages, and interests which made an interesting environment for the groupwork. One teacher experienced in digital Storytelling offered tutorials throughout the project.

### **4.3 The informants and material gathering**

The data collection method used in this thesis was the interview. The data comprised five interviews (N=5). The informants all participated in the course and were pseudonymised with gender-neutral names and no pronominals are used. The students represent all fields of studies that were represented on the course, but for research integrity the students will be referred as either educational

sciences students (Dani and Lo) or teaching students (Robin, Kim, and Ariel). See down the students' pseudonyms.

Student 1: Dani, educational sciences student

Student 2: Lo, educational sciences student

Student 3: Robin, teaching student

Student 4: Kim, teaching student

Student 5: Ariel, teaching student

The interviews were conducted as phenomenological interviews following the structure of a phenomenological interview as described by Bevan (2014), and they were held and recorded in Zoom (see Appendix 3 for the interview script in Swedish). The interview was introduced with a briefing and letting the informant ask questions if such occurred. This has the role of defining the purpose of the interview for the participant and to establish a safe environment for the interview (see Kvale & Brinkman, 2009, p. 128). In the interview the researcher should take a phenomenological attitude (the phenomenological reduction) throughout the interview (Bevan, 2014, p. 139). The researcher also should take different approaches throughout the interview and be an active listener (Bevan, 2014, p. 139).

The structure of the interview starts with 1) contextualisation, in which the researcher asks descriptive or narrative questions, 2) apprehending the phenomenon, in which the questions are descriptive and structural, and 3) clarifying the phenomenon, whereby the researcher varies the questions in relation to what the informant has said (Bevan, 2014, p. 139). The method Bevan (2014) describes is close to what Kvale and Brinkman (2009) describe as a semi-structured life world from the participants' own perspective (p. 27). The interviews came close to a normal everyday conversation, but the interview had an agenda as described earlier (see Kvale & Brinkman, 2009, p. 27). Before the actual interviews took place, I conducted a pilot interview for practice. The interviews were held in Swedish and Finnish. To protect the informants' integrity, I do not specify which interviews were held in which language. Only the audio was saved from the interviews.

The interviews were transcribed with InqScribe, a transcribing programme. In total I used transcripts of the interviews (70 pages, font: Helvetica, 12, and line spacing 1.5) in the analysis. The transcripts were coded and analysed with the NVivo programme. After coding I went through the reflective parts and distinguished the parts relevant to sustainability or phenomenon-based learning in each interview and later took a more holistic picture of themes. The analysis was done using interpretative phenomenological analysis (IPA) (Eatough & Smith, 2017; Smith, 2004; Smith, Flowers & Larkin, 2009).

#### **4.4 Interpretative phenomenological analysis**

A deeper interpretative phenomenological analysis (IPA) method was used on what the students are reflecting on. The stages of IPA are presented as well as how I did the analysis in this subchapter.

The philosopher Immanuel Kant (1724–1804) was the first to write about phenomena and he described them as how things appear to us. He meant that we never could understand the things inherently, only how they seem to us. Thus, a description of phenomena can always be seen as an interpretation. Interpretative phenomenological analysis (IPA) is an analysis method derived from both phenomenology and hermeneutics. Originally IPA is adopted as an approach to examine how people make sense of their major life experiences and the approach is concerned with exploring experiences in their own terms (Smith et al., 2009, p. 1). In this study I considered students' everyday experiences while studying in a course, but since there is an interest in critical reflection and the themes of the course are value-laden, IPA seemed adequate, as it is a method for detailed examination of human lives. IPA is an idiographic, inductive, and interrogative analysis method and it makes it possible to bring diverse levels of interpretation into the analysis (Smith, 2004, p. 39). Interpretations are, within IPA, attempts to understand how one has come to be situated in the world in the specific way one finds oneself. (Eatough & Smith, 2017, p. 195).

IPA is a hermeneutic phenomenological qualitative approach developed within psychology and a still developing method (Smith, 2004, p. 39). IPA is idiographic, and requires a small number of participants, in this study five (N=5). It is only possible to undertake detailed analysis in a small sample (Smith, 2004, p. 41). The idiography within IPA means that a “detailed examination of one case until some degree of closure or gestalt has been achieved” (Smith, 2004, p. 41) and then moving to the next case, and so on until all cases had been dealt with. After the analysis of each case was done, the cross-case analysis could be undertaken. Researchers using IPA are interested especially in understanding the lifeworlds of the participants, that is, what all knowledge is grounded in, both subjective and objective knowledge (Eatough & Smith, 2017, p. 196–197).

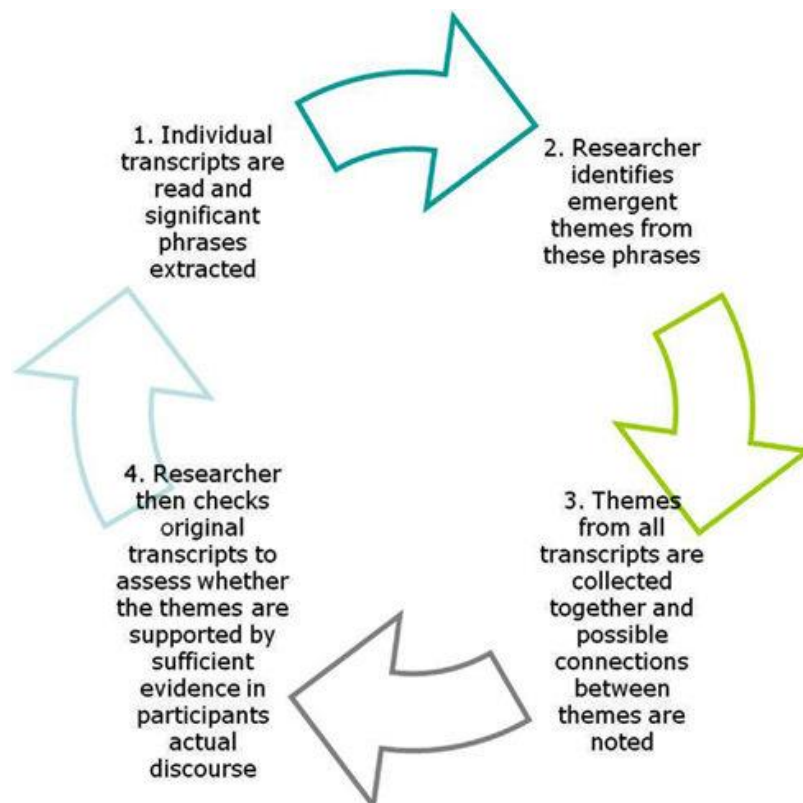
IPA is also inductive and interrogative (Smith, 2004, p. 43–44). When using IPA, the researcher uses techniques which are flexible to allow unanticipated themes to emerge during analysis (Smith, 2004, p. 43). Usually in phenomenological studies the researcher uses bracketing or *époché*, which means that the researcher brackets their consciousness (Giorgi et al., 2017, p. 178). Eatough and Smith (2017) write clearly about this:

IPA researchers acknowledge the inevitability of biases, preoccupations and assumptions when conducting research; they reflect on how these shape their research inquiries and, following Gadamer, they aim to engage with them fruitfully for the purpose of understanding. (Eatough & Smith, 2017, p. 195)

In other words, the researcher needs to take a questioning and dialectical stance to these fore-understandings and the material they are analysing (Eatough & Smith, 2017, p. 195). This means that I have taken my own position, fore-understandings and attitudes in consideration when conducting the analysis. The interrogative dimension of IPA refers to the aim of making contribution through illuminating already existing research (Smith, 2004, p. 43). The results of an IPA analysis should be discussed in relation to the literature, the results do thus not stand on their own (Smith, 2004, p. 44).

In practice this means that I first went through each interview twice to establish analytical codes and themes and then I could determine how the themes were in

relation to each other (see **Error! Reference source not found.** The process presented in the figure shows what Smith et al. (2009) call mining for the possible meanings that can provide the wherewithal for the phenomenon of interest to shine. The process also helps in developing the interpretative layers. I have also used the concept of the gem (a part of the material that shines light on the phenomenon of interest). The gem is a valuable interpretative tool for IPA and illuminates and enhances the interpretation and understanding. The gem provides a means to grasp the participant's world (Smith, 2011 in Eatough & Smith, 2017, p. 201). What the gem meant for me while doing the analysis was that I realised during the first reading which parts of the students' experiences were particularly interesting in the light of the research questions, and I coded those parts as 'gems'. Later, the parts were coded under some of the themes established from the analysis. While analysing the material I extracted especially illuminating excerpts, from the interviews, that in the end were the keys for establishing the actual themes.



**Figure 3. The process of IPA (picture from: Lewis, Lloyd & Farrell, 2013, p. 4 (CC BY 3.0))**

## 4.5 Research integrity and ethical considerations

When conducting any research, ethical considerations must be at the top of the agenda. In this thesis the ethical questions relate closely to the data collection and also to reporting the results (Creswell, 2014, p. 37). This research has been undertaken with a commitment to TENK's, the Finnish National Board on Research Integrity's *Guide to Responsibly conduct of research and procedures for handling allegations of misconduct in Finland* (Finnish National Board on Research Integrity, 2012). I will discuss more about ethical and integrity matters in this sub-chapter, especially on the informants and finally, I will discuss data security.

When conducting research, the participants need to be informed about the purposes and procedures of the research project (see e.g., Kvale & Brinkman, 2009, p. 71). The research project was conducted as a collaboration between two projects: SveaSus and DIDIA – Multilingual Didactics and Dialogs. Other data were collected in addition to the five interviews for this thesis, for the projects. The participants were informed about the research projects, including my thesis, during the first course lecture, and they could ask questions. Information about the research purposes were combined into one information letter about the research (see Appendix 1) which was sent to all students taking part in the course. Taking part in the research was fully voluntary for all students. In addition to the information letter all students gave their written informed consent to participate in the research via an e-survey (see Appendix 2). In this survey students could inform of their availability for being interviewed.

Informed consent and permission before starting to collect data is a necessary ethical practice (Creswell, 2014, p. 187). A written agreement serves as protection for both the participant and the researcher (see Kvale & Brinkman, 2009, p. 71). However, the interviewed students' final consent to participate in the interview for this thesis was sought orally, before turning on the recording. Thus, there is no written or recorded research contract for these interviews, which can be regarded as a weakness integrity wise. This is an ethical consideration since there is no written confirmation about the participation in these interviews.

Thus, I have been extremely careful when handling the material and writing analysis reports. I have also been thorough about data security and confidentiality. This means I have stored the material in a way that only I have accessed the data, behind a password and the transcripts were anonymised before the analysis was conducted. The citations used in the thesis are anonymised if there has been some information that could cause recognition of the informant.

According to the General Data Protection Regulation (GDPR) a privacy notice statement is needed when conducting research in which personal information is collected as data (General Data Protection Regulation, Regulation 2016/679). The SveaSUS project has one of these privacy notices. Personal data that were collected in my own research was the voice of the participants, name and what university programme they were involved in. No one other than the author has access to the recordings, and they will be deleted after the thesis has been published. No personal identification information has been included in the thesis.

Confidentiality in this study means that the private data identifying the informants has not been disclosed (see Creswell, 2014, p. 187; Kvale & Brinkman, 2009, p. 72). No information such as age, gender or sex were collected. To ensure the participants' anonymity I refer to the participants with pseudonymised gender-neutral names and I do not specify what major subjects they are studying, other than if they are undertaking educational sciences or if they are aiming to become teachers. I also do not disclose what kind of teacher they will become. Further, by translating all citations to English I have ensured that the participants cannot be recognised by how they use language during the interview. I have also altered parts of the citations that could lead to the person in question being recognised, without changing the phenomena in the analysis.

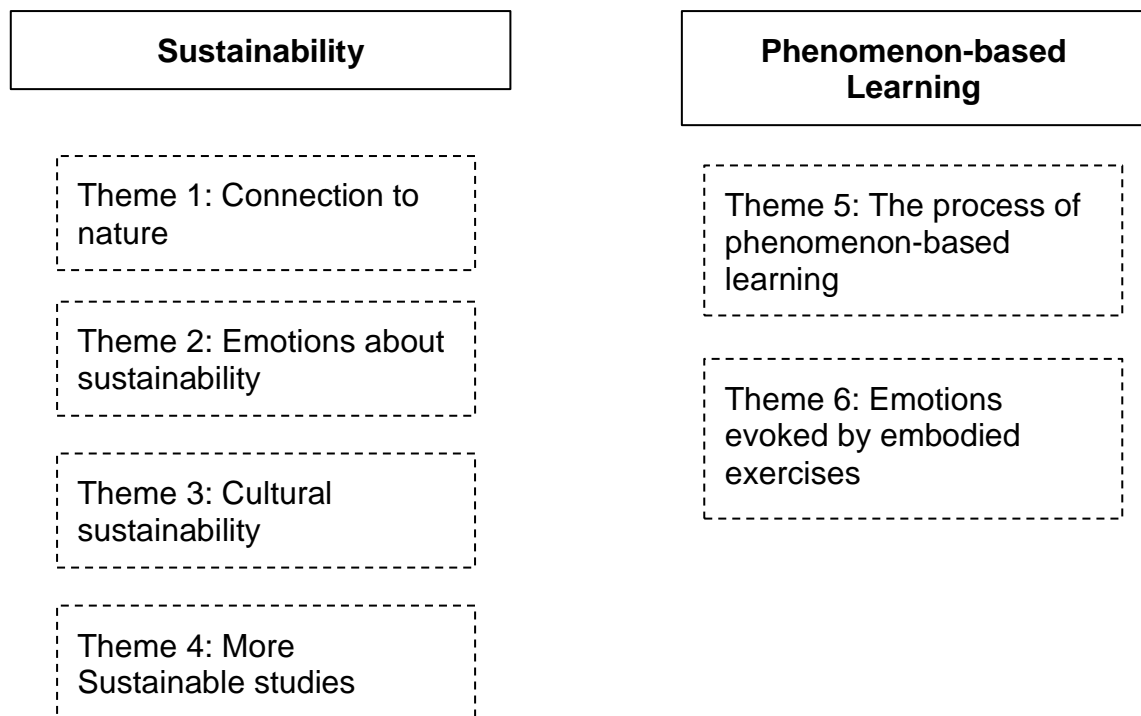
#### **4.6 Summary on the study**

The thesis is a qualitative hermeneutic phenomenological study which is grounded in the philosophies of phenomenology and hermeneutics. Phenomenology and hermeneutics, in other words interpretative

phenomenology, is grounded in both phenomenology and hermeneutics but has its emphasis in phenomenology as the main aim is to understand the lifeworlds and experiences of phenomena. The context of the research is an optional university course on sustainability and World Heritages through a phenomenon-based learning approach, that was conducted as an online course in the spring 2021. Five students (teaching students and other educational sciences students) who participated in the course took part in phenomenological interviews on their reflections about their experiences from the course. The material was analysed by using interpretative phenomenological analysis method. The integrity of the research participants considers ethical aspects as well as taking the data protection into account (see also Chapter 6 for validity of the conducted research).

## 5 Research results

This chapter presents the interpretative phenomenological analysis on the five students' reflections in the interviews. The chapter is divided into two subchapters, one about students' reflections on sustainability and one about reflections on phenomenon-based learning. The division is also thematically in line with the research questions. The IPA analysis resulted in six themes of which four relate to sustainability and two about phenomenon-based learning. The themes are 1) Connection to nature, 2) Emotions about sustainability, 3) Cultural sustainability, 4) Sustainable studies, 5) The process of Phenomenon-based learning, and 6) Emotions evoked by embodied exercises (see also Figure 3).



**Figure 4. The themes of IPA analysis**

The results of interpretative phenomenological analysis will be discussed in Chapter 7, whereas this chapter is about reporting the findings of the analysis.

## 5.1 Reflections on sustainability

The informants reflected variously on various aspects about sustainability. Four of the themes distinguished (see Fig. 3) related to sustainability. In this chapter, the themes and results of the analysis are presented with excerpts (translated into English) from the interviews with the students to make a more descriptive view for the reader.

### 5.1.1 Theme 1: Connection to Nature

Three informants reflected on the relationship to nature and how the course affected it. Lo and Ariel both reflected on how exercises during the course influenced a change in their relationship with the nearby nature. In the case of Lo, the change could be interpreted even as changing. One other student (Robin) also reflected much about the role of the nature on the course.

One of the clearest types of evidence of undergoing a change of perspective in their own reflection is the description of an experience Lo provided in their interview. There was a workshop with embodied exercises in the nature during the course, which was meant to be done either on Suomenlinna, or in the nature proximate to the students' homes. Lo did the exercises in their nearby nature. Lo explains that their relationship to the nature was improved during these exercises in a way that their attitude was shifted:

-- I abandoned the contempt attitude I had about the familiar nature close by and I started appreciating it like a fairly good nature site -- (Lo)

Lo did at first not feel a close connection to the nearby nature, did not even consider it as being nature and found the connection with the help of being mindful in an area Lo earlier despised. Lo seems to have experienced a change in attitude (*I abandoned the contempt attitude*), and thus, this might be considered as something close to what Mezirow would have called critical reflection.

Similarly, Ariel also experienced a closer connection to their nearby nature. However, Ariel did not describe having an open mind for the nearby nature since

Ariel had not lived there for a long time. Ariel described how the workshop was something new and tasks about getting connected to nature provided permission to take the time to find a closer connection to the nature in the area and find a connection:

-- the tasks connected me as a human being more to the nature I have here. -- I felt that I had a connection to this nature I have in the surroundings here I have cliffs and a forest and of course I have the wind and I have the sun, that I appreciate and experience more through these exercises -- (Ariel)

Ariel described having a deep meditative experience and even described experiencing a sense of belonging with the wind, the forest, and the cliffs. It seems that this is clearly something Ariel had wanted to do, and the course provided the time and permission for establishing the connection.

Ariel also reflected on how nature can enhance our wellbeing. Ariel describes the loneliness a human can experience which going to the nature can reduce. Ariel means that humans can find a connection to everything via nature, since everything is connected.

-- we are not all just humans in contact to each other but also with the whole nature the entire world that we are all one, and then we tried to see if one goes out in the nature so there you can feel like the nature and feel that we belong together, and that one can calm down there -- (Ariel)

Ariel summarizes their thoughts on how this is all related to taking care of nature:

-- of course, if we want to take care of ourselves and fellow human beings so why do we not want to take care of nature as well? -- (Ariel)

The interpretation of this excerpt is that this is how Ariel argues for the importance of ecological sustainability and its relationship with social sustainability and the wellbeing of humans. Ariel seemed to appreciate and have deep respect for nature and humanity and recognises the importance of taking care of nature. Ariel seems to have a deep relationship with nature and values taking care of it at an individual level, but also on a larger scale. Taking care of nature is an act of taking care of other humans.

Robin's experience of connection to nature differs somewhat from the other two students who described experiences. Robin had a strong experience from taking a walk as a part of the course. This student reflected on how the experience gave a completely new point of view on how to use outdoor education in future teaching work.

It is so nice that as a part of the course task you can go outside and walk. I thought it was on these first days I started to think about how well one feels outdoors and how I also should try to get the children outdoors more often. (Robin)

Robin experienced a reminder of something Robin seemed to have suppressed in a busy everyday life: how being outside positively affects one's wellbeing. Robin seemed to have realised on how to make time for being outdoors as a part of work. Although Robin says that "*I also should try to get the children outdoors more often*" it remains a little open whether the activity would be for the children, or in fact, also for Robin. Most probably Robin thinks being outdoors with children would be nice, leading to wellbeing enhancing the experience for both the teacher and the children. Robin returned many times to reflect on the experience of walking during the interview, which also reinforces the fact of having had a strong experience and realisation.

### **5.1.2 Theme 2: Emotions about sustainability**

Two students reflected on emotions regarding sustainability matters. Dani described feelings to be mixed around especially ecological sustainability and reflected on a phenomenon Dani called "shame culture". In contrast, Kim described feeling hopeful because of a more conscious youth, and that there is abundant research to be done on sustainability.

Dani was asked to talk about how Dani experienced how sustainability was taught in the course. Dani experienced it to be passable, but then continued by discussing the mixed feelings Dani have on how sustainability is discussed in general.

I have a little mixed feelings because always if someone else talks about sustainability - and that is something I ponder on a lot - but then with sustainability it feels like it anyway becomes a little a shame culture on how someone is right and someone is wrong and what the right way to live is. It was fine that the various aspects of sustainability were brought up. That there are other aspects of sustainability than only the ecological. (Dani)

It seems that Dani might be frustrated in the ongoing discourse on ecological sustainability and especially when it concerns tangible advice on how everyone should live their lives as sustainably as possible. Dani does not explicitly say if the 'shame culture' in the discussion on ecologic sustainability is something Dani regards as being negative, but the interpretation is that the shame culture might be what is causing less pleasant feelings for Dani, mentioning that it is *also* good to discuss the matters. The reflection also reveals contradictions since Dani discussed that it is important, but at the same time Dani regarded it as a part of this shame culture, that I interpret as what Dani regards as a negative side of the phenomenon. Dani also felt that the discussion orbits too much round ecological sustainability and wishes that there could be more discussion about social sustainability.

Kim reflected on their hopefulness about the future regarding the climate crisis during the interview. Kim especially discussed youth and about feelings that they could do things differently. Also, the fact that sustainability matters are being researched makes Kim hopeful.

I got more of such hopeful thoughts [during the course] and in some ways when one follows [what is happening in the world] it feels like the youth of today is more interested. [...] Then I think that there is quite much hope about that newer generations would act more sustainable. -- (Kim)

Interesting here is also that Kim's hope evolved from others taking care of the matter (youth and those who research). Kim reflects on how hopeful it is that a lot of research and work on sustainability is undertaken:

It was also hopeful when one thought about how much material and how much all sorts of things there is to be used. There are many dedicated people who research and study and writes articles and makes these you know, there are like a lot of materials. (Kim)

Kim mentioned earlier in the interview about having read a lot on sustainability. Kim is clearly conscious about the topic being of high interest within research and education. This implies that Kim regards sustainability matters as being important, and Kim is in the group interested in using the material that is created by researchers and other experts. Interestingly one observation here also is that Kim does not reflect further on how Kim might have an impact in these matters in their future work.

### **5.1.3 Theme 3: Cultural sustainability**

Two students talked about their experiences learning that sustainability is broader than only sustaining and protecting nature. This theme regarding the students' reflections on also sustaining places and buildings so that future generations and children also could experience them the same way as they had done themselves. Reflections also emerged about whether children experience Cultural Heritage the same way as oneself, with all the contextual and historical knowledge.

Robin experienced learning new things about cultural sustainability due to the World Heritage theme on the course:

-- maybe those forests and nature reserves should be saved and that they would be more important than buildings, but now I attained increased knowledge about how important it also is... [...] It is logical not to tear down and build new [buildings] so it is of course sustainable trying to sustain what can be sustained. (Robin)

Robin also thought that sustaining and taking care of buildings in addition to nature would be of importance. It seems that Robin has realised also that buildings are made of materials that come from nature, yet more that some buildings as those that are a part of Cultural Heritage and have a cultural value. Robin continues to reflect on how children might experience Cultural Heritage and the understanding gained as an adult:

Maybe this kind of understanding has first come in adulthood and that one wants to sustain and that one values [Cultural Heritage]. When one is younger, one might not think about it yet [...] that it would matter that much. (Robin)

The World Heritage education part of the course evoked critical reflections on the Cultural Heritage that Robin finds important due to knowing the history and cultural value might not be the case for children. Robin wonders whether the children can experience the same feelings and emotions around visiting a Cultural Heritage site as Robin. Robin has only learned about and understood having feelings about Cultural Heritage as an adult, which Robin reflects is a cause to think that the children might not understand and thus, not have the same emotions regarding the Heritage sites as Robin has. The interpretation here is that Robin might be uncertain about how to offer the same experience for the children. Robin seems to have gained some realisation about how important cultural sustainability is on a personal level for Robin and would also like to know if children can have the same experiences. Another interpretation could be that Robin might be uncertain on how Robin could provide children the same experiences so that they in some way can experience the same emotions.

Two other students also reflected on sustaining Cultural Heritage and how climate change might have an impact on them. Kim reflects on the importance of sustaining Suomenlinna so that it does not get worn out because of the number of visitors. Their reflection touches on both ecological and cultural sustainability because of Suomenlinna being a fortress on islands.

-- it is important that people know about that they [World Heritages] exist and that Suomenlinna as an example is not torn so that it would not exist anymore. And as we brought up in our video, this about climate change and how it gets warmer and how the water level rises. -- (Kim)

Kim refers to the digital Storytelling project Kim was a part of, where the group told a story about the island and how climate change could result in the sea level rising so that humans could no longer visit the island, because of the island not being visible anymore. Kim reflects on a larger (if not the largest) sustainability theme, climate change which affects everything, including the World Heritages. To sustain Cultural Heritage, climate change also needs to be tackled.

Also, Ariel reflected on preserving of the Cultural Heritage. Their reflections are more tangible and individual than Kim's; Ariel approached the theme on being a role model for children and not leaving garbage or anything else behind that does

not belong there, nor feeding animals that should not be fed. Ariel also emphasised that one should not take anything from the Cultural Heritage:

-- that you are taking care of something means that you do not litter or that you do not destroy and that you convey what it is about, what its history is, why it is there and how it should be taken care of and so on. I think it means to take care of and that you make sure that you do not destroy it and everything proximate --  
(Ariel)

Ariel means that all people and humans can be a part of taking care of the World Heritage and emphasises the tangible deeds while visiting. It is clear that Ariel's reflections about the matter are from a teacher perspective and continuity, which is a dimension in sustainability education: how can children sustain and take care of the environment.

#### **5.1.4 Theme 4: More sustainable studies**

One theme on sustainability that emerged from the informants' thoughts had to do with personal sustainability, and especially on wellbeing while studying. This was already touched on in the first theme on the connection to nature and how nature enhances wellbeing. Several students touched on the matter of demands on constantly performing.

When reflecting on the course compared to other courses at the university, Dani described it as being something completely different, which seemed like a pleasant thing.

I think this course itself has been something else and I think quite nice in that way that those who participated felt like we were together after all and did this course compared to other courses where one performs instead. (Dani)

Even though the course was mostly an online course (as were all the other courses that year) Dani experienced it as a feeling of togetherness with the other students in the course and did not only have to *only perform* throughout the course. It seems that the course might have been a way to stop and reflect on the situation as a student for Dani. Dani also reflected on why the course did not

feel as demanding as other courses, but because the course was ambiguous (as presented in theme 2), it gave room for experimenting and enjoying the moment.

This course did not feel like a course in which you participate just for reading the material and getting the best possible result out of yourself. Because it was quite indistinct, one must test oneself further and what to do, there was not a direct guideline where you should go, which seems to be this phenomenon-based learning, but it was quite nice in that way. (Dani)

Dani's experience of the course overall was that it was quite nice and relaxed and realized it was nice not to stress too much about the ambiguity. Here critical reflection might be visible because Dani had reflected earlier on how uncomfortable and vague the course and phenomenon-based learning felt. Dani clearly ends up in their reflection that even if it can be uncomfortable and indistinct, it might leave room for learning and being together in the situation instead of experiencing all too well-known pressure to perform.

Also, Ariel reflected on letting go of continuous performing when looking back on the video project that had a theme about not feeling enough in a time of limitless connections:

-- these feelings about maybe not being enough or when one does not really know where one belongs. But we are all in some way together now and everything is so accessible [...] and to feel one's roots and then the bad feelings goes away when one does not have to perform there [when being in nature] (Ariel)

Ariel means that nature is the place where the feelings of not being enough, or pointlessness disappears. The feeling of not being enough could also be interpreted as the feeling of social pressure to be something. Ariel touches on accessibility, which probably is a reference to social media and technology which makes everyone more available but does not itself fill any voids but might even be creating them.

Robin presented a different view of sustainability within the context of education. Robin defined it with two dimensions: the physical and the social. Social sustainability means sustainable solutions regarding mental wellbeing and

enhancing learning. The physical dimension regards matter about the actual learning goals of ecological sustainability.

I think there are two distinct dimensions on sustainability: the social, and the purely physical. [...] Here [about the social dimension] I think it is about sustainable solutions; how one learns and what is sustainable for the mind and learning and not so much about nature and ecology. And then with the physical dimension I think more about the classroom about the practicalities about how I teach in the canteen about food waste and how we recycle and sort, that covers more the physical sustainability whereas the psychological [dimension] is good for wellbeing. (Robin)

Robin seems to mean that education itself should be seen as a sustainable deed, because the school has an important task of taking care of the children's welfare and wellbeing.

Robin reflects further on wellbeing and sustainable studies. When writing about sustainable studies here, it refers to the studies being sustainable no matter what the studies are about. When reflecting on what the course offered, Robin discussed mindfulness, wellness, and embodiment, which are not included on other courses.

-- it is such an important part to be outside moving and how much it affects the brain and how one can study better. As a result of living in such a hectic world and we live so much in front of screens, it surely would be good to also think about studies and maybe these courses could be more reshaped so that they would take wellbeing more into consideration. That would be a sustainable solution. (Robin)

Robin refers especially again to their experience on the walk at the beginning of the course (*it is such an important part to be outside moving and how much it affects the brain and how one can study better*). Robin's reflections move toward the statement "*we live in a hectic world much in front of screens*". Robin reflects on the studies to take wellbeing more into consideration, interpreted as walks outside as a part of the course. The walk was an embodied experience and during the course taking place, all studies were conducted online, the embodiment might have triggered the thought of the opportunities to make more space for elements that enhance the wellbeing of the students. Robin means that this would be a *sustainable solution*.

Robin also reflects on the opportunities distance studies can offer:

I think this [remote studies] should be continued with, of course not completely, the possibility to participate remotely especially in these kinds of courses that somewhat touch wellbeing [...] I think it would increase; it would be important for wellbeing. Students should be encouraged to go outside on a walk while listening to a lecture if there are no discussions or breakout rooms or writing something. (Robin)

Robin experienced nice moments when being able to eat breakfast on a terrace while listening to the lecture. Robin emphasised that the fact that the student could choose where they would participate in the lecture could enhance the wellbeing of the student. Robin also discussed how it was possible for teachers to encourage students to take a walk while they participate in the lecture, if no discussion is needed. It seems that these thoughts arose from the experience from the walk, which could be interpreted as an important change for Robin because of reflecting on how to make university study (especially online study) more supportive of students' wellbeing. The walk was an experience of wellbeing for Robin and evoked further reflections.

## **5.2 Reflections on the phenomenon-based learning**

Two of the themes distinguished fell under the second research question. Themes 5 and 6 are presented in this chapter with deeper analysis of the reflections and experiences of the students.

### **5.2.1 Theme 5: The process of Phenomenon-based learning**

An important theme in the course was the phenomenon-based learning project, which was held as a digital Storytelling project. The process of this learning project came up in several of the informants' reflections. The students also experienced the course in general to be a little vague and hard to grasp, especially at the beginning. In the interview, Dani discussed experiencing that not enough tangible information was given on what phenomenon-based learning is and how the process should take place. Dani drew the conclusion that in a way,

the whole course was an image of the ambiguity of phenomenon-based learning, but that in the end, all the pieces came together which made the process quite positive.

Three students reflected on how not all aspects of the group work process were successful. Kim and Ariel described the realisation of how different each participant of the group's lifeworlds might be, and how the digital surroundings made it harder to grasp at first. On the other hand, Lo reflected on learning about being a member of a group. Lo also withheld opinions to avoid conflicts. Dani and Kim also reflected on the importance of the role of the teacher within phenomenon-based learning.

Dani provided a short narrative description of the process of the course in experiencing how phenomenon-based learning was taught in the course. First Dani reflected on the experience of the course somehow lacking a common thread.

If phenomenon-based learning - and you get a big chunk of information during the first 20 minutes on what it – is, and after that, all kinds of vague topics around it, and you were supposed to read about it yourself on something there are no tangible theories on or that there is no right or wrong answer, but one needs to test oneself. Maybe that is also the answer on why the course looked like it did. (Dani)

Dani described having found a “*big chunk of information*” delivered at the beginning of the course but that after that everything felt ambiguous. This description seems to be Dani's interpretation of what phenomenon-based learning actually is. Dani explains about having the impression that phenomenon-based learning is supposed to be ambiguous and vague, with no right or wrong answers to it. Dani also expressed the view that a lot of responsibility to figure out what phenomenon-based learning is, was left to the students to read about themselves. What can be interpreted from this excerpt is that Dani clearly felt that no clear enough explanation of what phenomenon-based learning is nor how to use it was provided.

However, Dani also reflected on the role of the teacher in the process of Phenomenon-based learning and concluded that the

-- of course, when one reads more about phenomenon-based learning or these... It always happens in interaction between the teachers and pupils. (Dani)

When asked if Dani experienced that the construction of the course is a way to explain what Phenomenon-based learning is, Dani replied this:

-- if it [learning] should start from the student's perspective about the subject or that the students themselves... This digital storytelling gave us the opportunity to describe with the help of the teacher – and there comes the teacher perspective, that the teacher is the like a guide or someone who maybe not knows more but still can provide guidance towards the learning objectives. But then I don't know how much we discussed matters further and back between teachers and students or among students but, there arose some scenarios and then you were in the Breakout Rooms and wondered about what this really is. (Dani)

Dani seems to still being amid a reflective process on the role of the learner and the teacher within the process. Dani experienced that the students as learners could decide on what the storytelling project would be about, but that they really needed the help and guidance of the teacher. Then again, Dani experienced that there was not enough discussion with the teachers. It is unclear if Dani was referring to the teacher who guided the storytelling projects or all teacher of the course.

When reflecting on the process of phenomenon-based learning, Kim concentrated on the challenges within the group at first. Kim describes having a perceptible approach to projects. Within the group work Kim experienced stress when co-working with a person who by Kim's experience was much vaguer than Kim.

-- I could find it stressful and big at the beginning when we were in a group. One can perceive the same thing in such diverse ways and then always when we described more then we realised that [says with a different voice:] "okay, this is more like we think this and aah, yes, you say that, and I think this matter like this"  
-- (Kim)

Kim interpreted the situation on retrospection as an example in which different members' lifeworlds are colliding, that the differences came from the fact that

within the group they experienced the same things completely differently. Kim reflected even further on the differences between Kim and a group member.

All this background knowledge when we were thinking about the videos, everything they knew and when they told “Hey, it could be like this, or like this...” and all these names on persons I had never heard about because it is not required from new students. There was a lot new, and they did not either understand what I said, so... (Kim)

Kim’s experience was that their own and other group members’ knowledges differed. Kim did not understand and know about what the other student would say. Nevertheless, Kim added at the end, experiencing that the other student did not understand what Kim meant. The reason is that Kim means that being a new student, Kim would not know all the names the other student was talking about.

I learned that there is no need for detailed rules during the process [...] the teacher was very good [...] I mean that all these Zoom meetings we had with the teacher, and the teacher noticed that everyone are confused – “how will this become anything” – and the teacher had a lot of patience and was skilled. (Kim)

Kim experienced learning from the process on that, even if the process did not go the way Kim first imagined or wanted. Also, Kim reflects on how important the teacher’s guidance is during the process. It seems that the support of the teacher had a great impact on Kim’s experience and also resulted in a successful process.

Similar to Kim, Ariel also experienced challenges within the group work process. Ariel describes the group dynamics as being a challenge in the beginning of the process because of difficulties of making contact with one another on Zoom.

I would say that the groupwork was hard at the beginning because it was hard to have contact with each other because of not seeing each other. Then you cannot really see what the person thinks if I say something. [...] The visual part of the connection is missing if someone does not want to have the camera on. [...] I find my discomfort in that situation when I do not know if everyone is fine. (Ariel)

Since the course and group work took place online it is possible for the members to decide themselves whether they have the camera on or not. In this case, one group member did not have the video on. Ariel experienced this as difficult, since

the embodied and visual signals were missing. Ariel describes being uncomfortable because of not knowing if all the members were okay. Ariel seemed to need to know that everyone agreed or at least expressed themselves on what was discussed.

Lo made some interesting observations on how people behaved during the group work. Lo described having learning experiences about their own role and how to relate to other people's activities.

Maybe then an avoidance of conflicts appeared [for Lo] and then it also affected the product and what I thought about it. I was a little disappointed that it did not end up very good, that it was kind of half-done... (Lo)

Lo reflected on and analysed not wanting to express all Lo's thoughts or critics to avoid conflicts. This also resulted in Lo not being content about how the product became. Even if Lo took a smaller role, Lo clearly experienced the group process clearer and being able to reflect on it. Lo continued reflecting on how the group might have had a more successful group process:

It would have helped the situation if we could have established clear rules at the beginning, for instance, that it is OK to have different opinions and reflect about it (Lo)

Lo identified which part of the process was missing. Lo explained that they were not taught about how to work as a group with a phenomenon-based learning process. This resulted in the group not establishing a group spirit, and not brainstorming at the beginning of the process. Lo also felt that if the group had made clearer rules, the entire process might have been different. Lo's analysis shows that although neither the process nor the product seemed to have been successful from Lo's perspective, the experience provided Lo with learning about group work, especially when reflecting on the matter in relation to the course literature.

### 5.2.2 Theme 6: Emotions evoked by embodied exercises

In addition to emotions related to sustainability, the embodied exercises during the course woke many emotions in the students. Most students described their experiences as being uncomfortable, but when reflecting further on the matter they concluded that it was not necessarily a negative thing. Some students really enjoyed the embodied workshops. According to students' embodied learning or embodiment in general was also regarded as something there should be more of within academic studies and especially university teacher education.

Dani reflected a lot on doing the embodied exercises during the course and on the interview.

I know my body well enough to know that it works more like a machine to me than - of course as a way to express myself - but in a way which happens on my own initiative or my own free will. (Dani)

Dani explained that the embodied exercises felt useless. The main reason seems to be because Dani did not have a free choice how to move and what to do, nor did Dani get to take the initiative. However, even though Dani expressed much about their discomfort about the embodied exercises, at the end of the interview there was a switch in attitude about the tasks.

Maybe to deliberately place myself in situations in which I could experience discomfort and, in that way, become more comfortable in different situations that do not suit me. In that sense I think I maybe have learned most that things will resolve no matter how weird they feel. (Dani)

Dani clearly realised that it is useless nor negative to go through things that are not comfortable for oneself. This is a premise reflection, which happened during an interview and can be interpreted as Dani learning or realising the usefulness of something that at first seemed only uncomfortable and useless.

Robin described the embodied exercises being "very uncomfortable". Similar, to Dani, Robin still reflected on that after doing the exercise, it still felt good going through with it. However, the reason for discomfort differed from Dani's:

The weirdest was that it did not come as naturally to participate in the embodied exercises via Zoom, as it could have been if we had been in a gym or outdoors. But to jump around here at home, it was not the most comfortable experience. (Robin)

The weirdest about doing the embodied exercises was the fact that Dani was doing them via Zoom at home alone. Dani also compares that it would not have been as weird doing them outside or at a gym. Dani expressed that “jumping around home” made it less comfortable.

Also, Kim’s experiences were similar to Robin’s, that doing embodied exercises on Zoom makes oneself more conscious about oneself. Kim moved even further on the reflection about the self-consciousness theme. First, Kim also remarked that children love the types of tasks that there were in the course, and thus, Kim also thought the embodied exercises were fun.

When one gets older one becomes more aware of oneself and that one might do things the wrong way and someone might be looking at me and what if it goes wrong [...] Children are nice, and they are not that critical. (Kim)

Kim reflected on the fact that the older one gets, the more self-conscious one becomes and scared of making mistakes and someone watches when it happens. Then again, Kim sees the usefulness of throwing oneself into the tasks, to set an example for children.

When doing an embodied task during the last full day course, Kim experienced that closing their eyes helped to concentrate on doing the tasks.

Maybe one becomes more conscious if one sees oneself all the time. You see what you look like when you are playing a rock, a pinecone, a bow, or something... (Kim)

It seems that being on Zoom made the whole situation such that it was easier to be aware of oneself. Kim explains about seeing oneself on Zoom when doing the exercises, which made Kim even more conscious about how Kim looked. Closing the eyes made it easier, and the interpretation here is that seeing one's own picture (video) in Zoom in the exact same way everyone else sees oneself might

switch the concentration to how one looks instead of the embodied experience. It seems that Kim is the hardest audience for Kim. Without Zoom or a camera, one can't see oneself in the same way the others see one, thus, it might make it easier not to be so conscious about oneself all the time.

Kim also experienced realisations especially regarding the improvisation workshop.

-- it was not uncomfortable at all, nothing negative about it. It was just that I had never thought about teaching being so much improvisation. Now when I think about it then of course it is so, one can make plans but then also one must be ready to see what happens and improvise. (Kim)

Kim clearly learned how useful the skill of improvisation is as a pedagogical tool while teaching. Even though one plans everything, there might still be need for improvisation. This can be interpreted partly as a switch in Kim assumptions on how to work as a teacher, but then again it might also be just that Kim had not been offered knowledge on improvisation workshops during their studies before. This excerpt also shows something that could be interpreted as critical reflection on Kim's perception on what being a teacher is.

Not all students found the embodied exercises to be uncomfortable or to evoke mixed feelings. As presented in theme 1, Lo and Ariel experienced a connection to nearby nature thanks to one of the embodied workshops. Ariel also realised how important the embodied learning is, especially for children, and therefore also for adults.

I did not completely understand how important embodied learning actually is, how much there is to gain on, that we adults do not understand if we do not do it ourselves. Children learn with their bodies; they learn with trying and feeling and everything we [adults] do not do anymore. We have done it when we were little. We have forgotten that. Maybe that is what I have got out of here [the course], how much one can learn with the body and how much it pays off to be involved in what is being learned in that [embodied] part too (Ariel)

Ariel seems to have gone through a realisation about how different the lifeworlds of the children are, and how much they experience through embodiment and that some learning must be experienced through embodiment. Ariel reflected on how

adults do not live through embodiment anymore, and why adults might forget how important embodiment is for children. This is probably an important professional reflection by Ariel.

Lo reflected on the embodiment from a general education perspective:

-- it is very good that we were encouraged to do that [doing embodied exercises] because I think humans, the school system and education in general favour sitting still and thinking and speaking with the mouth. (Lo)

Lo analysed the embodied exercises as reminders that adults also have bodies and live through their bodies. Lo also saw that the school system (in Finland) favours those who sit still, think, and speak. The fact is that all of us have bodies and we cannot live without considering the bodies and Lo experienced a reminder of that.

### **5.3 Summary of research results**

Results of the interpretative phenomenological analysis show distinguished six themes in the interviews with the five students on sustainability and phenomenon-based learning.

Themes on sustainability were identified as:

- 1) *Connection to nature*, through which students reflected on the changes in their relationship with their nearby nature. There were differences between the experiences of the students, one having changed their attitude towards the nearby nature, others getting closer to nature.
- 2) *Emotions about sustainability*, through which the students discussed 'shame culture' and hope.
- 3) *Cultural sustainability*. Here, students reflected on how they had not thought about cultural sustainability before, how it relates to other sustainability issues, and on whether children are able to experience the same emotions about World Heritage sites as adults do.
- 4) *More sustainable studies*, in which phenomena about the pressure to perform is discussed and how the students experienced that the course

made it possible to study in a more sustainable way with its methods of going on walks, involving embodied learning and phenomenon-based learning.

The analysis also revealed two themes on phenomenon-based learning:

- 5) *The process of Phenomenon-based learning*, through which students reflected on how differences between the students and being on distance effects on the collaboration and how avoiding conflicts result in not being able to express one's thoughts.
- 6) *Emotions evoked by embodied exercises*, whereby students reflected on self-awareness, discomfort, and the joy in learning also through embodied experiences and not only by thinking.

I will discuss the themes more thoroughly in relation to earlier research and theory, in Chapter 7.

## 6 Trustworthiness

This chapter considers the trustworthiness of this study and assessment of what I have done throughout the process. There is an extensive discussion among qualitative researchers on assessing the quality of qualitative research (see Smith et al., 2009; Eskola & Suoranta, 1998, p. 151). The notions ‘validity’ and ‘reliability’ are important tools for quantitative research (Bryman, 2012, p. 389). However, discussing validity in qualitative studies is quite challenging, but possible if assimilating reliability and validity into qualitative research (Bryman, 2012, p. 389). Therefore, so are the used notions and their meanings negotiable within a qualitative research context (Eskola & Suoranta, 1998, p. 153). It is important that the terms and their meanings are discussed and defined before they are used to assessment (see Eskola & Suoranta, 1998, p. 153) and much is dependent on the emphasis of the researcher (Creswell, 2014, p. 309). Therefore, I am using the term *trustworthiness* introduced by Guba and Lincoln (1994) instead of the term ‘validity’ for assessing this study as well as the title of this chapter (see also Bryman, 2012, p. 390–393; Eskola & Suoranta, 1998, p. 152). I will apply Yardley’s (2000) characteristics of good qualitative research, when discussing the trustworthiness of this study and discuss with the methodology literature (see Smith, 2004). The characteristics are: 1) *sensitivity to context*, 2) *commitment and rigour*, 3) *transparency and coherence*, and 4) *Impact and importance* (see Yardley, 2000, p. 219).

### 6.1 Research context

When adapting phenomenology in studies it is desirable to have a wide-ranging background in the philosophy of the approach adopted (Yardley, 2000, p. 220). In this study I have invested a lot of time reading, understanding and writing, not only about earlier theories and research, but also about the philosophies of phenomenology and hermeneutics. My aim has been to ensure *fairness* (see Lincoln & Guba, 2000, p. 180) in my study, by making the stakeholders’ voices clear in my writing. Using citations and references are my most used tool for that. This is also an ethical issue and has been of foremost importance throughout the

thesis process. I have engaged in critical self-reflection during the process of this thesis. This means that I have made assessments and have made decisions on what parts are adequate in the thesis during the writing and analysis.

The language used in this written study is not the same as the languages used in the sociocultural context of the study conducted. The context was a university course in which three languages were used flexibly (Swedish, Finnish, and English) this has most certainly had an effect on the full process. Yardley (2000) addresses the importance of the researcher understanding the language, social interaction and culture of the context in which the phenomena are studied. As a university student who has been living and studying online courses in all three of these languages, experience to have a good understanding of the studying culture. The social interaction is different when studying online, mostly interacting with others when a discussion exercise has been given or via messaging. This sets a challenge for the students but also for the teachers and researchers. For example, when interviewing the students, the internet connection could become suddenly unstable and hearing the participant could be impossible.

The relationship between the researcher and the participant in the study might be essential (Yardley, 2000, p. 220). However, the relationships in interviews are not equal, and there is an asymmetrical power relationship between the participant and the interviewer (see Kvale & Brinkman, 2009, p. 76). An interesting setting here is that as a student I can be seen as being 'equal', but because I know where I want to lead the interview puts me in the authoritarian position. My several roles certainly have affected the research process. My three roles as a student, thesis author, and as a research assistant in both projects involved in the study conducted in the course might also have an impact in the research process. Due to this triple role, I have had more opportunities to affect how the study has been implemented in other parts too, than this thesis. However, the interviews conducted for the study reported in this thesis are only used by me. Therefore, I have had an opportunity to undertake research from a perspective suitable to this thesis and my own research interests. Because the material is only being used by me also raises an ethical issue about confidentiality (see more in Chapter 4.5 on this).

## 6.2 Methodology

Reflexivity and transparency are important dimensions when conducting qualitative studies and should be visible throughout the study (see Creswell, 2014; Yardley, 2000). I have tried to be transparent and explain throughout the thesis what the aims are and how the process has been conducted.

One important thing I want to address is the size of the sample. Since the analysis method is idiographic, a small sample is suitable for that method (see Eatough & Smith, 2017; Smith, 2004). At first, the plan for the thesis was to triangulate and use three separate data sets: interviews, 14 essays and transcriptions from recordings and discussions from the course. Five interviews is an adequate number, because of the analysis method, the original amount of material turned out to be too wide and difficult both methodologically and workload wise. Thus, I left out the essays and discussions as well as the analysis I did on them. However, the interviews were not very long and were as flexible (see e.g., Smith, 2004) as I wanted them to be. I also failed at some points to ask deeper questions during the interviews (see Bevan, 2014), which is explained by my inexperience. Even though a pilot interview was held, I could have done more practice on doing phenomenological interviews to get better at the anticipated active listening (see Bevan, 2014).

The phenomenological and hermeneutic approach should be reviewed with a critical grasp. Since the phenomenological interest of this study lies within the experiences and lifeworlds of the students who were interviewed, it is not easy to obtain the information without interpretations coming in between the experience and talking about the experience. As Max van Manen (1990, p. 9–10) states, there is no way to attain the actual experiences of informants, not even for themselves. What the informants said during interviews was their own verbal interpretation of their retrospective reflection on their experience from the course, and what thoughts and reflections the experiences evoked (see van Manen, 1990). Also, the researcher's interpretation and attitudes have an effect throughout the research process and analysis, even though being very conscious

about them (see Eatough & Smith, 2017; Smith et al., 2009; van Manen, 1990) That is, I as a student doing my first study using IPA might have a lot of attitudes and fore-understandings, I have yet not become conscious about even if actively trying.

IPA has been widely used within psychological research and within health psychology (see Eatough & Smith, 2017; Smith, 2004; Smith et al., 2009), which is not directly within the discipline of educational sciences. The approach is committed to research into “how people make sense of their major life experiences” (Smith et al., 2009, p. 1). I am aware that the original aims of IPA are not in line with the aims of this study, but even if IPA is popular within health psychology, it might also be used in other disciplines (see Smith, 2004). I also found the method to be appropriate for this study and material because of the idiographic and phenomenological dimensions when wanting to go deeper into the singular experiences of the participants. Jonathan A. Smith (2004, p. 46) noted that at an early stage of using IPA, doing superficial analysis that is “good enough” is acceptable. The “good enough” is what I have aimed at. There is also an ethical consideration in not being too insightful in the analysis, since the interpretations might not be fully correct when being drawn from an inexperienced student. As I also used the method in English (which is not my first language), it might have affected the depth of the analysis. The original research was conducted in Swedish and Finnish, thus there has been switching between several languages, and some information might have been lost in translation. Still, the translations have also had an anonymising aim for the integrity of the participants.

## 7 Discussion

My aim with this thesis was to study the reflections of five educational sciences students who participated in a university course about sustainability and World Heritage learning with a phenomenon-based learning approach. The background of the study can be found in sustainability policies and sustainability education. The thesis theory and research basis were grounded in transformative learning theory and a phenomenon-based learning approach. The interest was based on the reflections about sustainability and phenomenon-based learning the experiences on the course evoked and especially if critical reflection was evoked. The interpretative phenomenological analysis revealed six themes, of which four fell under reflections on sustainability and two under reflections on phenomenon-based learning. In the next chapter I will discuss the research findings with earlier theory and research and go deeper into the discussion on the methods used conducting the study. Finally, I will conclude the chapter, and thesis, with final words where I also provide further research proposals based on findings of this study.

### 7.1 Research findings

The aim with this study was to undertake research on how a phenomenon-based learning approach might awaken students' reflections and especially critical reflections about sustainability. The research questions were: 1) *What are the student's reflections on sustainability in the context of their experiences in the course?* and 2) *What are the students' reflections on phenomenon-based learning in the context of their experiences on the course?*

The results show six themes identified from the interviews of the five students on sustainability and phenomenon-based learning. The themes 1) connection to nature, 2) emotions about sustainability, 3) cultural sustainability, and 4) sustainable studies (themes on sustainability) answered the first research question. Additionally, two themes: 5) the process of Phenomenon-based

learning, and 6) emotions evoked by embodied exercises, answered the second research question. The results are well in line with earlier studies in the field.

A particular interest was based on if the phenomenon-based learning approach might evoke critical reflection. Although there were parts of the interviews which could be interpreted as critical reflection as in it is hard to distinguish whether any of the five participants were evoked to reflect critically alone due to experiences on the course they took part in, as defined by Mezirow (1981; 1991; 1998) and Kreber (2004). Transformative learning is not easy and teaching it might be very risky (Taylor, 2017). Nonetheless, there seems to have been signs of some critical reflections among the students, which is discussed below. I will discuss each of the distinguished theme of the analysis in relation to earlier research and theories.

#### *Connection to nature*

Learning during the course was *inter alia* embodied and emotional (see Küpers, 2012). The reflections of the participants revealed that embodied experiences launched changes in students' relations with nature and being outdoors. Folke et al. (2016) remarked that a bigger emphasis should be set on the biosphere when discussing sustainability. In this theme, nature has had a major role for the students and in their reflections; they identified the importance of taking care of nature, since nature takes care of us. In other words, the social and biosphere dimensions are intertwined (see Folke et al., 2016). Furthermore Taylor (2007, p. 11) remarked that critical reflection seems to be based on experience. The experience of doing embodied exercise in proximate nature seems to have evoked questioning contempt attitude and resulted in what Mezirow (1991) calls *premise reflection*, that is, questioning our presuppositions (see Kreber, 2004, p. 31). One student reported *abandoning the contempt attitude*, which leads to the conclusion that transformative learning in a superficial level could have happened. There seems to be a deepening in respect for the nature during the course. Respect and the relation to nature are important within sustainability education (see e.g., Wolff et al., 2017). Therefore, can this finding be concluded as an important result from a perspective of sustainability education, even though it seems to be somewhat superficial.

### *Emotions about sustainability*

Emotions were an often-emerging cross-cutting theme in the analysis results. In the material the students experience of emotions emerged in relation to sustainability matters when discussing embodied exercises and during the phenomenon-based learning group work. Emotions are inevitable in sustainability education (see e.g., Pihkala, 2017), and the results of the analysis showed that this was also the case in this context. However, most reflections on emotions were not connected to sustainability but to the process of phenomenon-based learning and embodied exercises. Nevertheless, two students reflected on emotions regarding sustainability, of which hope was addressed. Indeed, hope is important within sustainability education, as long as the relationship between hope and tragedy is well thought through (see Pihkala, 2017). Mixed emotions such as frustration about the “shame culture on ecological sustainability” seemed to have their foundation in experiences outside the course and general societal discussions. As Østergaard et al. emphasised (2008), it is important that learning process should not separate the learner from their own experiences and background.

### *Cultural sustainability and sustainable studies*

I will discuss these two themes together since they show several dimensions of sustainability and are thus intertwined. Sustainability is a complex phenomenon, and it has several dimensions: ecological, economic, social, and cultural (UNESCO, 2021). All four dimensions can be distinguished in these two themes both directly and indirectly. Systemic thinking also can be found in the reflections, that is, realisations e.g., that ecological and cultural sustainability are intertwined (see Folke et al., 2016). In theme 3 the reflections touch cultural sustainability but also ecological. In theme 4, sustainable studies social, ecological, and indirectly economical sustainability dimensions are clearly visible in the students' reflections.

The students had general reflections on what cultural sustainability might be in general and at a tangible level. Students' reflections show a holistic sustainability view, in which ecological and cultural sustainability are intertwined (see Folke et

al., 2016). Even though the students' thoughts are on quite different dimensions, they clearly draw an understanding that sustainability is about humans taking care of nature and thus also taking care of Cultural Heritage. Reflections on one's own values emerged also in this theme. One student clearly stated that they realised that it is also important to sustain e.g., buildings as well as nature, suggesting reflections on their own values. Similar results of students reflecting on their own values has been earlier detected during a Phenomenon-based learning project (see Wolff et al., 2019).

The theme of sustainable studies touches directly on social and ecological sustainability, and indirectly economic sustainability (see UNESCO, 2021). One student touches social and ecological sustainability, when reflecting on how to take care of oneself in a time of limitless connections (and limitless amount of performing). An interesting dimension in the reflections are about the possibilities of wellbeing and togetherness during the course, even though being on a distance. One student's reflections throughout the interview show a process of self-reflection, from having ambiguous feelings at the beginning of the course to acceptance and feelings of togetherness, although the distance studies have made socialising more difficult. Thus, this could be interpreted as critical reflection (see Mezirow, 1991, 1998; Taylor, 2007).

The reflections about integrating wellness into studying brings forward economic sustainability. The reason these three students reflect on these matters are social and economic sustainability intertwined. They all describe with different words of how life is an ongoing performance to get things done, probably because of students needing to study for an examination and getting hired in a salary paying job. What if students could just focus on their studying and have space for thinking and learning without it having a negative effect on their wellbeing? Therefore, here the economic and social sustainability again are intertwined (see UNESCO, 2021; Folke et al., 2016). One student also gave words for how education is as *sustainability* (see O'Neil, 2018). Education itself needs to be sustainable and can be an act of sustainability (see also UN DESA, 2020).

### *The process of Phenomenon-based learning*

Different and even difficult emotions are a part of critical reflection in transformative learning (see e.g., Mälkki 2010; Mälkki & Green, 2014). Within sustainability education, several difficult and even uncomfortable feelings are inevitable (see e.g., Ojala, 2019; Pihkala, 2017; 2018; 2020). Also, when reaching critical reflection between the liminality of reflective modes the learner faces discomfort and can need the support of a teacher or peers (see Mälkki & Green, 2014).

The process of the phenomenon-based learning group work was reflected on by many informants as a partly difficult experience, especially at the beginning of the process. Even though the students reflected and also analysed the situation, it seems that the hardest factors were emotional experiences and the collaboration between the participants in the group. The results of the student's experiencing the phenomenon-based learning as indistinct was in line with earlier research, also in which students reported on negative experiences, mostly related to the collaborative dimension (see Litmanen et al., 2012). One student also reflected on how the group process could have worked better, by defining the rules of the group at the beginning of the process. Lonka & Westling (2018) also emphasised this, and it might have been that the student had read more about phenomenon-based learning between the end of the group work and the interview.

One realisation that emerged was that everything went well, despite the ambiguous and difficult feelings. Learning to tolerate the difficult feelings is also an important part of phenomenon-based learning (Lonka & Westling, 2018). There seemed to be acceptance of letting things be ambiguous and tolerating the situation. This could be interpreted as liminality (Mälkki & Green, 2014), when being in between not knowing and knowing or also as general uncomfortable emotions that are reported as usual within phenomenon-based learning processes (see Litmanen et al., 2012). This seems to be the premise reflection and a change in perception (see Mezirow, 1991, 1998).

Conflicts have been shown in earlier research to be a part in the phenomenon-based learning group work process (see Litmanen et al., 2012). Nevertheless,

only the fear of conflicts and probably uncomfortable emotions rising in such situation were reported. Also, the remote dimension set challenges for collaboration. A fundamental obstacle seemed to be the fact that if the camera was not on during the collaboration, there was no way to read or see the participant. Even if there was no way to see the other, the appearances of the participant do not always state the degree of commitment (Lonka et al, 2015, p. 60), and in that case, the student did not express any mistrust, but discomfort in not knowing how all the group members were. The role of the teacher is central as a scaffolder to the students (see Lonka et al., 2015; Lonka & Westling, 2018). The students also reported the teacher's support as an important aspect for the group work to succeed and be completed. This study reinforces the awareness of the need of a teacher or other person to support, encourage, and challenge the students during phenomenon-based learning.

#### *Emotions evoked by embodied exercises*

Students reported on various emotional experiences when doing the embodied exercises in the course. As Küpers (2012) writes, among other things, learning is emotional and embodied for the learner. The living body was centred in the students' experiences (see Hwang & Roth, 2008, p. 956). Some students reported that the embodied tasks were pleasant, and some that it caused discomfort. An interesting phenomenon was the self-consciousness that meeting via Zoom evoked. The embodied aspect clearly enhanced learning in different ways and offered experiences and emotional experiences that might result in critical reflection and realisations. The students needed to undergo the experiences, instead of constricting them (see Symeonidis & Schwartz, 2016, p. 43), and this clearly showed the phenomenology of learning. The course provided the students with embodied and emotional experiences that resulted in different reflections and realisations.

## **7.2 Discussion about research ethics and integrity**

The theoretical background of the study has a few weaknesses. The theoretical background of phenomenon-based learning has proved challenging due to a

limited amount of research on the approach. Research with theoretical background in phenomenology is especially hard to find. Transformative learning is also a quite complex theory, which is still developing. Furthermore, this thesis concentrated on reflections of students from several study backgrounds. They all are educational sciences students, but a remarkable difference between them is that some are training to become teachers (in early childhood pedagogy and primary schools) and others are not. The variety of the main subjects of the students was not intended when planning this study. In fact, the study was supposed to concentrate on primary teaching students, but because of the course was open for all educational sciences students, only a small portion of the sample were primary teaching students. Thus, the aim of the thesis to make a research contribution on primary students' reflections especially as future teachers was not possible and changed. This change in the research process has affected the background, theory, aim and certainly the results.

My own role as a class-teaching student also affected how I viewed the process and the material. The role can be viewed as something that influenced the interviews and my understanding of the students' lifeworlds. In accordance with IPA, I worked throughout the process with my own presumptions and attitudes, especially when analysing the participants' reflections and experiences (see Eatough & Smith, 2017), for which I often had great empathy. Also, the informants might have felt different when the interviewer was also a student, in a similar position to themselves, and on what and how much they shared compared to discussing the topic with an experienced researcher. As a student, with lifeworld of a university student, I might also have a different viewpoint on the material and make specific interpretations, since I might share some of the lifeworld experiences that come with being a student living during a pandemic and reflecting on sustainability matters. However, Eatough and Smith (2017), referring to Ricoeur (1970), wrote about the hermeneutic stance of empathy in the analysis process. Therefore, the student role might have helped me throughout the analysis.

The study was conducted during the COVID-19 pandemic, and all the restrictions it has caused have affected the results holistically. As the course was mostly

online, the students did not meet face-to-face with each other, spontaneous discussions and reflections between students could not occur in the same way that they would if the students were in the same place. From this aspect, two questions are raised: Would the students' reflections be different about the course matters if they had more room to discuss with each other during the course? Likewise, what would the lifeworlds of the students have been if distance education had not been involved? The interviews were also conducted via Zoom, so I could see the informant, but nevertheless, it was hard to see all expressions and body language, which acted as a challenge for the interaction. The distance dimension thus affected conducting the interviews.

Lastly in this part of the discussion, the choice of analysis method could be debated. The students' reflections on sustainability and phenomenon-based learning being the interest in the research questions, a phenomenological analysis method seemed adequate. This is especially because the sample was quite small, and the interest laid in the individual student's experiences an idiographic interpretative phenomenological analysis method was reasonable. However, other qualitative analysis methods could also have proved sufficient in regard to the research aim. Methods such as thematic analysis or content analysis, more common analysis methods within the educational sciences, could also have generated similar results and provided a tool to approach critical reflection. Nonetheless, these analysis methods would have not been as adequate in meeting the aim of going deep into the experiences of the informants. In that regard this work has been exploratory in using IPA as a method of analysis. In the case of more interviews, other analysis methods might have been more suitable.

Transformative learning and critical reflections were also within the scope of this study. Earlier research has shown that research (assessment and evaluation) on critical reflection has a range of challenges (Taylor, 2017, p. 77). Doing the analysis with IPA, which is an inductive analysis, I have not really been able to search and analyse critical reflection in the best possible ways. Thus, IPA has not always been the most suitable analysis method in this regard. Nonetheless, conclusions on critical reflections from the results can be drawn, which were

discussed earlier in this chapter. This thesis focused on a microprocess of transformative learning rather than trying to understand it as an entirety (see Taylor, 2007). To conclude, in the light of the material and research results, there is no way to know if the reflections of the students are actually evoked due to their experiences in the course, or if they have been enhanced from earlier experiences, or if some of their experiences with the course later would result in transformative learning. Therefore, transformative learning and critical reflection seem to be something that is difficult to distinguish with the analysis method chosen.

### **7.3 Final discussion and ideas for further research**

The thesis provided a glance and deeper understanding of what reflections are evoked on sustainability through a phenomenon-based learning approach, which was also the aim of the study. The results of the study were in line with earlier research, and they showed what to emphasise and what to consider when planning and implementing a phenomenon-based learning approach on sustainability in future education, and what might evoke the students' critical reflection. Regarding the dimension of critical reflection, this study revealed some cases of critical reflection; changes in attitudes and self-reflective processes with outcomes in change. However, any clear evidence on whether the phenomenon-based approach evoked such a process in the participants cannot be concluded from the results. Nevertheless, the new aspect this study brings relates to the online dimension; the students took part in the phenomenon-based learning process remotely via online tools, such as Zoom and WhatsApp. Even if the remote dimension was an aim of the study, it showed similar results in the learning processes as earlier studies had shown, regardless of whether it was online, or not.

In the light of the results, essential phenomena to consider with studies on sustainability seem to be emphasising the role of nature, emotions, the transdisciplinary dimension of sustainability, and to aim for studying that not only are about sustainability but that studies also are sustainable themselves. Central

phenomena that go further with phenomenon-based learning as a learning approach in itself are the role of the teacher, and with an emphasis on the process including collaboration skills and tackling difficult emotions. Also, the dimension of online studies revealed the phenomenon of self-consciousness, difficulties of contact with others and other technical challenges. Online studies can also provide opportunities regarding students' wellbeing and more sustainable solutions.

Regarding future research ideas, an interesting phenomenon that arose from this study was that difficult and uncomfortable emotions were evoked during learning processes, especially in reference to the process of phenomenon-based learning and on sustainability. Here two dimensions can be distinguished: the role of the teacher as a role model, co-learner and support when emotions arise for the learner, and also teachers' abilities to meet their own uncomfortable emotions. Thus, a teaching student's own uncomfortable emotions when considering sustainability could be of interest to research, since they need to be able to discuss them and consider the emotional dimension in their future teaching jobs. There is a need for deeper understanding of emotions on major societal phenomena such as sustainability or climate change, and how to process them (see also Ojala, 2019). Another research proposal should consider empirical work on the process of phenomenon-based learning with theoretical base in phenomenology. There have been few studies on this, and it would be desirable to have the alternative processes discussed between the proponents (the constructivist and phenomenological).

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## **Appendices**

## Information on participation in research

### SveaSus and Sveaborg/DIDIA



#### Context

In the context of the course [the name of the course has been deleted to protect the integrity of participants], research material will be produced for the research projects SveaSus (<http://bit.ly/SveaSus>) and the subproject Sveaborg within the research project DIDIA (<https://www2.helsinki.fi/en/researchgroups/diversity-multilingualism-and-social-justice-in-education/projects/didia-multilingual-didactics-and-dialogs>).

#### The themes of the projects

*SveaSus*: The basic aim of SveaSus is to theoretically and methodologically develop teaching and learning that promote sustainability. Within the project eight teacher educators give lectures and supervise student teachers and on-duty teachers in sustainability education and phenomenon-based learning in a purposeful, dynamic, and complex learner centred way. Simoultaneously, the SveaSus project promotes understanding and knowledge about sustainability education and learning in and about World Heritage Centers and how to work multilingual in learning situations.

*Sveaborg/DIDIA*: To analyse the meaning of a common interdisciplinary locally anchored project for a multilingual group of student teachers about lingual attitudes and linguistic competencies.

#### How is the research material produced?

The research material is produced in the following ways:

- A survey on use of language and lingual attitudes
- Observation and recordings of the course's Zoom meetings
- Collection of the students' coursework (written, audio and audiovisual)
- Interviews (individual and focus groups)

NB! The course participants commit not to record or share any content of the course in any form (e.g., on social medias).

#### The research material will be used in the following ways:

##### *Purpose*

All researchers (including doctoral-, masters- and/or bachelor thesis writers) related to SveaSus and Sveaborg/DIDIA are allowed to use the material collected during the course. The material can be used three years after the projects have ended (max. until 31.5.2026) for research directly related to the aims of the projects, and if the SveaSus project leader gives permission. The aim of the research is not to assess the students' learning. The research material collected during the course is analysed after the course has finished.

##### *Pseudonymisation:*

- No names or other identification information will be included when reporting the scientific results in theses or other contexts where the results are presented.

- If the researchers present individual images and clips from the recordings during research presentations, no names will be visible.
- The written course assignments are pseudonymised before they are used in research.
- The survey on use of language and lingual attitudes is anonymously collected.
- The reporting of the scientific results may include transcribed citations from the participants, but they are reported in a way that no individual can be recognised from the material.
- As a student, you have the right to use a pseudonymous screen name (alias) on the course sessions.

### **Use of the material**

The material is included in the research projects SveaSus and Sveaborg/DIDIA at the University of Helsinki. This means that researchers, postgraduates, masters- or bachelor theses writers who are included in the research projects can analyse parts of the material.

For the full usage of the material, it would be valuable for us if we might show clips of the recordings on research or educational contexts.

You have the right to cancel your participation on any occasion. Eventual cancelling of your research participation does not relate to the implementation or assessment of the course.

### **Briefly about Research Ethics**

The research projects SveaSus and Sveaborg/DIDIA are implemented according to the laws and regulations for data protection in Finland and the EU. All personal data in the research will be processed confidentially and the participants will not be recognisable in the publications of the projects. The data is stored in accordance with the national regulations for secure storing of research data. You can read more about the projects research ethics and data protection notices: SveaSus: <https://www2.helsinki.fi/en/researchgroups/diversity-multilingualism-and-social-justice-in-education/projects/sveasus-sustainable-world-heritage-learning-through-a-phenomenon-based-approach> and DIDIA: <https://www2.helsinki.fi/en/researchgroups/diversity-multilingualism-and-social-justice-in-education/projects/didia-multilingual-didactics-and-dialogs>

The research results are published in scientific journals, theses and in popular form, and they are presented on conferences and seminars.

Kindly **inform about your consent to participate in the research** by filling this form: [link to the form]

## APPENDIX 2

### Consent on participation in the research

#### The information on the participant

---

First name and surname \*

E-mail address (your -helsinki.fi -e-mail) \*

#### Consent

---

Kindly inform of your consent by ticking the alternatives below. Note, that it is very important that you tick of all alternatives that concerns you! \*

- I participate in the research by filling in the survey on use of language and lingual attitudes
- I participate in the research by giving my consent on that my coursework is collected and used in aims of research.
- I participate in the research by giving my consent to do recordings where I am included.
- I am available for participations in research interviews.
- I do not participate in the research. (Leave the other options empty!)

#### About the video recordings.

---

About the video recordings. Please choose one. \*

- I give my consent on that the recordings can be used in research and educational contexts. (This means that we might show singular well-chosen cuts from the material on conferences, training or in-service-training in educational context)
- I give my consent on that the recording can only be used in research aims.

## APPENDIX 3

### Intervjuguide

Materialinsamling för Emma Heikkiläs pro Gradu avhandling.

*Målet/syftet med intervjuerna:* Att med hjälp av intervju stimulera informanten till att berätta om eller (kritiskt) reflektera om hållbarhet och se om fenomenbaserat lärande påverkat dessa upplevelser. Uppbyggd enligt artikeln: Bevan, M. T. (2014). A Method of Phenomenological Interviewing. *Qualitative Health Research*, 24(1), 136–144. <https://doi.org/10.1177/1049732313519710>

*Tidsestimering för en intervju:* 30–40 minuter

#### MANUSKRIFT FÖR DET SOM SKER FÖRE INBANDNINGEN

---

- Presentera dig själv
- Berätta för informanten om målsättningen med intervjun
  - Jag forskar i hur studerande reflekterar om hållbarhet och speciellt i samband med denna kurs om fenomenbaserat lärande. Jag önskar få höra av dig hur just du tänker om olika frågor.
  - Jag kommer sträva efter att vara så neutral jag kan i intervjun, och det kan kanske upplevas som att jag är kall och o-empatisk, men skälet är bara att jag inte vill påverka vad du specifikt lyfter.
- Försäkra informanten om att forskningsprocessen följer de forskningsetiska principerna
  1. Berätta: intervjun bandas och be om samtycke för detta
  2. Berätta: allt material kommer att behandlas konfidentiellt och pseudonymiseras och att informanten har rätt att avbryta eller välja att inte svara på frågor som ställs under vilket skede som helst under intervjun
  3. Berätta: Påverkar inget angående kursen
  4. Berätta: det är endast jag som forskare som behandlar det insamlade materialet
  5. Kommer spara endast ljudet.
  6. Vi siktar på 30 minuter
- Fråga informanten om något blev oklart/ifall det finns frågor
- Påbörja bandningen (via Zoom).

### INTERVJUN

#### BAKGRUNDSINFORMATION

*Allra först frågar jag bakgrundsfrågor som hjälper mig då jag återkommer till materialet att koppla det till rätt informant. Alla uppgifter som gör dig igenkännlig pseudonymiseras.*

1. Namn?
2. Vad studerar du / Möjligtvis bi-ämne (behörigheter i annat än klasslärare eller småbarnspedagogik)?
3. Hur länge har du studerat? (om informanten inte nämner det)
4. Har du jobbat som lärare?

#### CONTEXTUALIZATION

### Descriptive/Narrative Context questions

*E.g. "Tell me about..." "Tell me how you came to be..."*

*Nu ställer jag några mer allmänna frågor som anknyter till kontexten och inte till egentliga teman på kursen.*

1. Berätta om för mig varför du valde att studera småbarnspedagogik.
2. Berätta om varför du deltog på kursen *Fenomenbaserat lärande på Sveaborg: Hållbarhet och världsarv*.
3. Berätta mer om...
4. Kursen betonade platsbaserad pedagogik på Sveaborg, men på grund av de rådande restriktionerna hölls kursen på distans. Berätta om hur du upplevde att gå kursen, då den hölls helt på distans.

### **APPREHENDING THE PHENOMENON**

Descriptive and Structural Questions of Modes of Appearing

*E.g. "Tell me about your typical day in..." or "Tell me what you do to ..."*

5. Berätta om vad du upplever att kursen erbjöd dig om fenomenbaserat lärande?
6. Berätta om hur du upplever att hållbarhet behandlades på kursen.
7. Berätta om hur du upplever att världsarv kopplar till hållbarhet?
8. Berätta om hur du upplevde det kroppsliga lärande på kursen?
9. Berätta om ifall kursen väckt några nya tankar.
  - a. Var det något som behandlades, som fick dig att faktiskt tänka om något eller som kändes rent obekvämt?
  - b. Gav kursen dig sådana upplevelser du inte haft tidigare?
10. Gav den här kursen några upplevelser, som andra kurser vid universitetet inte gett dig?
  - a. Berätta mera ...?
11. Berätta hur du upplever hållbarhet behandlas på din utbildning allmänt sett.

### **CLARIFYING THE PHENOMENON (KAN KOMMA I MITTEN PÅ INTERVJUN)**

Imaginative Variation: Varying of structure Question

*E.g. Describe how the unit experience would change if a doctor was present at all times.*