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HELEN HASSLÖF

THE EDUCATIONAL CHALLENGE IN 'EDUCATION FOR SUSTAINABLE DEVELOPMENT'

Qualification, social change and the political

MALMÖ UNIVERSITY

**THE EDUCATIONAL CHALLENGE IN
'EDUCATION FOR SUSTAINABLE DEVELOPMENT'**

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Pedagogy is a mode of critical intervention, one that believes teachers have a responsibility to prepare students not merely for jobs, but for being in the world in ways that allow them to influence the larger political, ideological and economic forces that bear down on their lives. Schooling is an eminently political and moral practice, because it is both directive and actively legitimates what counts as knowledge, sanctions particular values and constructs particular forms of agency.

Henry A Giroux (2012) Truthout

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- II Hasslöf, H., & Malmberg, C. (2015). Critical Thinking as Room for Subjectification in Education for Sustainable Development. *Environmental Education Research*, 21(2), 239-255.
- III Hasslöf, H., Lundegård, I., & Malmberg, C. (*in review*). Students' qualification in ESD - epistemic gaps or composites of critical thinking? *Submitted 27 Nov 2014 to: International Journal of Science Education*
- IV Hasslöf, H., Lundegård, I., & Malmberg, C. (*manuscript*). Teachers as agents for social change? Subject positions from a transformative perspective of sustainability. *In process*.

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INTRODUCTION AND BACKGROUND

When I was eight years old, we had a “litter cabaret” at school. Together, we sang about how bad it is to throw garbage around. I still remember some lines:

Yuck, there's a tin thrown away
Yuck, who's done it, could you say?
Yuck, what kind of crook is doing such a thing?
Come along! We have to do something!

This was a perfect song in the late 1960s from a Swedish school context. “Keep Sweden Tidy” was a growing movement to spread awareness of environmental issues and, in particular, to stop littering. We were socialised to be polite, environmentally friendly and good pupils (at least in my personal retrospectives). Today, the perspectives have expanded and global issues are now a part of the classroom context. Environmental issues reveal complex relations, comprising what we address as *sustainability* issues and embracing questions about the relationship between society and nature from different perspectives. Education, in relation to issues of sustainability, is characterised by complexity, uncertainty and necessity (Jonsson, 2008; Scott & Gough, 2003; Van Poeck & Vandenaabee, 2012). These days, we need more than a litter cabaret at school.

For several years now I have worked with ecological issues, both as a biologist and as a teacher of outdoor education. My main in-

terest have been in issues which problematises our use of nature in the present day in relation to the past as well as the future. Issues surrounding how we use nature reveal conflicting and complex questions. Nevertheless, I feel that my earlier experiences as a biologist and teacher, where my interest in sustainability issues first took root, have sparked my interest further of these conflicting and complex questions in formal education.

Education for sustainable development (ESD) is an educational concept initiated in the late 1980s through the Brundtland Report (World Commission on Environmental and Development [WCED], 1987) as well as international conferences addressing global issues about peace, justice, economic development and the environment. The definition of *sustainable development* by the Brundtland Report is quite well known and often cited: "Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs". Through the following world summits, education has been stressed in the global concern to change our lifestyle for a more sustainable way to live on the planet. UNESCO (United Nations Educational Scientific and Cultural Organization) has been the international organisation working with the worldwide implementation of these ideas into education through the Decade of ESD 2005–2014 (Jickling & Wals, 2008; Stevenson, 2013). In November 2014, new declarations were formulated through the Global Action Plan (UNESCO, 2013) to continue where the previous decade ended.

Questions of sustainability, however, pose challenges to education. What does this perspective mean when considering the purpose of education? The relationship between knowledge, politics, and ethics is complex and sensitive, and one might ask how education should deal with questions embedded in political and ethical interpretations. In an educational context, this perspective in value-driven questions is considered challenging and is vulnerable to claims that it amounts to indoctrination (Ferreira, 2013; Jickling, 2001, 2003; Læssøe, 2010; Mogensen & Schnack, 2010; Sauvé, 2002). Therefore, these are questions and concepts which must be

continuously discussed and reformulated (Bonnett, 2002; Jickling & Wals, 2008; Stables & Scott, 2002).

In my thesis, I have turned to the actors in social practice that are set to realise the educational perspectives of ESD – the teachers. Through teachers’ meaning-making discussions of sustainability and ESD, my ambition is to contribute to the research field by adding empirically-based knowledge from a Swedish context and to problematise how teachers deal with a conflicting global perspective such as sustainable development from an educational context. It is worth noting that my use of the phrase “meaning-making discussion” falls in line with Lundegård’s (2007) usage, and it refers to an interchange of meaning through the struggle of interpretative prerogatives.

As alluded to in the title of this thesis, the interest focuses on the educational challenge of Education for Sustainable Development (ESD). This is in relation to the challenge for teachers of how to make meaning of ESD as an educational purpose in their practice. In part, it addresses the challenge in relation to existing educational aims when sustainability is seen as the overarching goal, but it also problematises the challenge of implementing such an ambiguous concept as sustainable development in an educational context.

To approach the reading of the following background through the issues in focus of this thesis, I will give an overview of the purposes, although this will also be further outlined in the section of “Purposes”. The thesis has three purposes and the results are presented in four articles. The first purpose is to investigate and describe the complexity of the concept of sustainable development from a conflict perspective and analyse how different perspectives develop in meaning-making discussions of sustainability in an educational context. This is elaborated in the first study (Article I). Building on this, my second (and main) purpose is to investigate how desirable aims of ESD are articulated and rearticulated to make particular meaning by teachers with experience in ESD practice. Environmental and sustainability education is characterised by conflicting aims and tensions of purposes. In my studies, I have focused on three main areas which appears particularly complex, namely: development of students as political subjects (Article II),

qualification (Article III), and social change (Article IV). In each of these areas, the functions of qualification, socialisation and subjectification (Biesta, 2009a) are relationally analysed to further problematise educational purposes. The third purpose amounts to make a methodological contribution. As previously stated, the purposes will be more thoroughly described in the section “Purposes”.

In the next section, I give a brief background of the traditions of environmental education in relation to the interest of this thesis. The glimpses of historical events that are interspersed in the text should be seen as examples of events that flit across in the media “noise” and are included to give a sense of the decade, working as memory hooks seen mainly from a Swedish media context (Bernes & Grundsten, 1991; Peterson, 2012). I have chosen to include these paragraphs in my text to reinforce how education and research takes place in a larger, contemporary cultural context. Therefore, how the purpose of education is formulated is a reflection of certain historical and societal contexts (Säljö, 2000). Hence, due to our view of society and development, societal and global challenges, and politics, different priorities will be formulated for the desired functions of education (Biesta, 2009a).

Through this background, I intend to give a picture of how educational views and traditions in relation to environmental issues have developed and been adopted in various approaches. Even if these traditions elaborated by Öhman (2003) seem to follow a progressive timescale, they should be viewed more as dominant tendencies through certain specific time periods, as well as mutual parts of contemporary environmental and sustainability education. This following section should be seen as a background to the discussion of the purpose of ESD and thereby serves to contextualise the issues which are in focus for my thesis.

Traditions of environmental education in a short retrospective

In the 1969, when I was singing at the “litter-cabaret” in primary school – and in the wake of Rachel Carson's *Silent Spring* (1962) – Sweden was the first country in the world to ban the pesticide DDT. The Beatles performed their famous rooftop concert and

later in the year, John Lennon returned his Order of the British Empire MBE (which he had received four years earlier) in protest of Britain's conduct in the Biafra War and the Vietnam War – and Neil A. Armstrong became the first man to walk on the moon. This was a time of glorified technical innovation; the time of an awakening interest in environmental education (EE) and a flourishing time for the peace movement due to the Vietnam War. Some of the environmental buzzwords of the 1970s were *nature conservation*, *biocides*, *acid rain* and *nuclear waste* (Bernes & Grundsten, 1991; Peterson, 2012).

Bill Stapp, an American biologist and one of the founders of *Environmental Education* (formerly *The Journal of Environmental Education*), formulated “The concept of environmental education”:

Environmental education is aimed at producing a citizenry that is *knowledgeable* concerning the bio-physical environment and its associated problems, aware of *how* to help solve these problems, and *motivated* to work towards their solution (1969, p. 30-31, emphasis as in original).

This definition was developed at a seminar at the University of Michigan and published in the first volume of the first edition in the autumn of 1969.

In Sweden, as in other countries, this was a time when environmental education (EE) was mainly founded on a *fact-based tradition* (Östman, 2003). With “fact-based tradition”, I refer to one of the selective traditions of environmental education elaborated by Öhman (2003, 2004). Selective traditions are due to selective processes in education that, over time, develop into teaching traditions (Williams, 1973 in Öhman, 2006a); in this case, they are based on the current view on environmental issues and the philosophical perspectives in education. In general, teachers in the fact-based tradition of EE primarily treat environmental problems as knowledge problems. Science is seen to provide the reliable objective foundation; knowledge as scientific facts and models is seen as having sole importance in the educational context. Through knowledge, educa-

tion prepares students to solve the problems of environmental issues. Essentialism is the prevailing educational philosophy.

In 1972, the ministers of education – with the dominance of the western world – gathered in Stockholm to formulate an agenda for a “worldwide” view of environmental education; The International Environmental Education Programme (IEEP), which has since had much influence as a reference document for further commissions and through the development by UNESCO. However, IEEP has also been the subject of criticism for acting as a mirror for affluent nations with a western cultural view (Gough, 1997). The first intergovernmental UNESCO conference on environmental education was organised in Tbilisi in 1977. The Tbilisi Declaration includes the first specific guidelines and goals for environmental education (UNESCO, 1978).

Upon entering the 1980s, we were still in the oil crisis and the Soviet Union had invaded Afghanistan as a part of the Cold War; acidification, deforestation, the ozone layer and chlorine bleaching were some of the central environmental rubrics (Bernes & Grundsten, 1991; Peterson, 2012). The HIV virus has now become a worldwide epidemic. In Sweden, Olof Palme is assassinated and the nuclear reactors at the Chernobyl nuclear power station goes into meltdown. This was also a time when organic food began to receive greater attention and, in 1989, the Berlin Wall falls.

The political discussions which followed of how society should deal with nuclear power illustrates how scientific knowledge is associated with values. These reveal how different conclusions could be drawn from the same knowledge base, and environmental problems came to be seen more as value-related issues. A new tradition was developed with an alternative view on knowledge, the *normative tradition of Environmental Education* (Öhman, 2003, 2004). In this interpretation, knowledge alone is seen as not enough to change people’s behaviour. The normative tradition is built on the belief that it is possible to derive norms from scientific facts. As a result, the answers to value-related environmental issues are established through experts and politicians in discussions and are presented in policy documents and syllabi. Teachers should teach students necessary environmentally friendly values and attitudes to at-

tempt to change the students' behaviour and, by this, support an environmentally-friendly transformation of society. The basis for *the normative tradition* is a causal link between knowledge of environmental problems, environmentally-friendly values and environmentally friendly behaviour. To promote the intended effects of education, the teaching process and the students' experiences are emphasised. Progressivism is beginning to make its entry.

Biodiversity, recycling, environmental certification and greenhouse gases are some of the environmental rubrics in focus during the 1990s (Peterson, 2012). The Soviet Union collapses in 1991 in the decade which is characterised by the rise of multiculturalism, capital markets, neoliberalism and revolutions in digital technology. The following year marks the official end of the Cold War. Dolly, the cloned sheep, sees the light of day. Nelson Mandela is elected president of South Africa while ethnic tensions and violence expands in the former Yugoslavia.

In 1992, the United Nations Conference on Environment and Development in Rio de Janeiro resulted in the publication of Agenda 21 (United Nations [UN], 1992), the guiding document for sustainable development through the twenty-first century. In paragraph 25 of this document, it is declared that peace, development and environmental protection are indivisibly connected. Chapter Thirty-six of Agenda 21 promotes the role of education. In this 500 page document, "education" is mentioned no less than 486 times (Wickenberg, 1999, p. 106). This is where the Decade for ESD (2005–2014) has its origin (UNESCO, 2005). These documents are built upon the concept of sustainable development in the way it was launched in the report "Our Common Future" (WCED, 1987, "The Brundtland Report") as development that "meets the needs of the present without compromising the ability of future generations to meet their own needs".

In the wake of the UN Conference in Rio, the *pluralistic approach of environmental education* is developed. The increasing uncertainty of environmental problems and the growing number of interpretations of the environmental debate influences the development of this tradition (Öhman, 2003). The environmental theme is broadened and interrelated with developments throughout soci-

ety. Environmental issues are viewed as moral and political problems and regarded as conflicts between human interests (Jensen & Schnack, 1997). Pluralism and critical conversation are the cornerstones of teaching, and education is heading towards being reconstructivist in character (Öhman, 2003). Education, in relation to issues of sustainability, is characterised by complexity, uncertainty and necessity (Scott & Gough, 2003; Van Poeck & Vandenabeele, 2012).

In 2005, the Decade for Education for Sustainable Development (DESD) was launched by the UN General Assembly (UNESCO, 2005). The formulation from the National Agency for Education in Sweden (2013) is an example of an intertextual formulation (c.f. Bakhtin, 1986) of how goals from international policy (i.e. UNESCO, 2005) of environmental perspectives are implemented into the national curriculum of education. The formulation conforms to the international policy declarations of ESD:

Environmental perspectives in education should provide students with insights so that they can not only contribute to preventing harmful environmental effects, but also develop a personal approach to overarching, global environmental issues. Education should illuminate how the functions of society and our ways of living and working can best be adapted to create sustainable development (The National Agency for Education. Curriculum for the Upper Secondary School. 2013, p. 6.).

This paragraph states that education “should” illuminate how students best “adapt” to create sustainable development in their ways of living and working. This normative perspective indicates an existing, predefined answer of how to act “to create sustainable development”. Furthermore, the knowledge provided is put forward to give students insight into “preventing harmful environmental effect [s]”. On the other hand, the formulation also puts forward the importance of encouraging students to “develop a personal approach” to global environmental issues.

These formulations are related to different approaches of education and reveal areas in tension concerning what we consider edu-

cational purposes. Questions of *qualification*, *social change* and possibilities for students to develop as *political subjects* are among the issues which are the result of educational discussions depending on how we look at purpose and function of education. Meanwhile, as sustainable development is subject to both a debate of its meaning and is questioned for its educational purpose, teachers are supposed to manage the integrated perspective of ESD with goals in the curriculum and assessment (Stevenson, 2013). Taking this into account, how teachers reason and make meaning about desirable aims in relation to ESD in light of their practice seems a fruitful and knowledgeable context for empirical research to problematise these perspectives. In the next section, the purposes of my research will be further outlined.

Purposes

As previously mentioned, environmental education has been a part of school education in Sweden, as in many other countries, since the 1960s. With the introduction of the UN Decade of ESD (UNESCO, 2005, 2012) and the work implemented by UNESCO during 2005–2014, sustainable development has been introduced in the global arena. This focus entails stressing environmental issues as societal and “human-made”, and to accents the mutual relationship between society, environment and economy in a global context. To make sustainable development an educational concern demands that we think about the purpose of education.

Education for Sustainable Development (ESD) has its educational focus in a balancing act as a transformative education; a transforming education in a complex area characterised by uncertainty and necessity. Furthermore, education *for* something reveals the idea of an existing, predefined citizenship for students to achieve (c.f. Biesta & Lawy, 2006; Fien, 2004). With this intention, ESD challenges us to reflect on its purpose in the complex and political sphere between a citizenship education *for* a defined purpose (or social order) and an education that enables the students to create new thoughts, identity and to find communality in a changing world.

ESD has been found as a complex area in tension, both through previous research and also through my readings of policy documents and traditions of environmental education. The educational tensions which relate to democratic processes of education, mainly embrace students' *qualification* in relation to ESD, *social change* in relation to "sustainable" living, and the possibilities for students to develop as *political subjects* in this educational context. These areas will be in focus for further elaboration in the studies of this thesis.

When orienting in this field of visions, theory and policy in areas of educational tension, it is interesting to turn to the educational practice, to the actors set to interpret and implement those visionary goals. In my thesis, I turn to the teachers. The analyses focus on the complexity of sustainable development, the possibilities for different and conflicting perspectives to develop in discussions, and how the aims (in areas as qualification, social change, and development of students as political subjects) are articulated and re-articulated to make meaning in teacher colleagues' discussions. I would like to clarify that when I use the term "political" in the text, I do this in line with how Mouffe (2000a) would bring in the political, which has been defined as "the dimension of antagonism that is inherent in human relations", which can take many forms and can emerge in different types of social relations (p. 15). Thus, the "political subject" is used as a relational concept (c.f. Lundegård & Wickman, 2012), where the becoming of a subject means to create new relations in the world due to interpersonal relationships. However, this is not to be confused with "politics", which seeks to organise and establish a certain order to deal with the dimensions of "the political" (Mouffe, 2000a).

The three purposes of this thesis are elaborated and presented in four articles. Concerning the explicit research questions in regard to each study, I refer to the included articles.

The first purpose is to investigate and describe sustainable development from a conflict perspective in an educational context. This is elaborated by content and process analysis, starting by analysing the complexity and conflicting interfaces of the concept of sustainable development through scrutinising some general explanatory models of sustainable development (Barbier, 1987; Breiting,

Hedegaard, Mogensen, Nielsen, & Schnack, 2009; Breiting et. al., 2009; Herremans & Reid, 2002). How different perspectives of sustainability is developed in a discussion is then analysed. This is achieved through relating the conflicting perspective of sustainable development with analyses of speech function (Wertsch, 1998) in a discussion about sustainability in order to identify and analyse dialogic and univocal speech in the teachers' discussion. This is the concern for Article I: *Discussing Sustainable Development among Teachers: An Analysis from a Conflict Perspective*.

The second purpose is to empirically investigate how teachers articulate the meaning of their *desirable aims of ESD*, to problematise interrelations and struggling meanings of educational purposes of *qualification*, *social change* and the *development of students' as political subjects*. This is achieved through analysing teachers' meaning-making discussions of their social practice (i.e. discussions between in-service teachers) with methods inspired by discourse theory. This entails analysing articulations of:

- Teaching situations which enable space for the students to develop as *political subjects*. Article II: *Critical thinking as room for subjectification in Education for Sustainable Development*.
- *Qualification* in relation to educational aims in issues of sustainability, developed in Article III: *Students' qualification in ESD - epistemic gaps or composites of critical thinking?*
- Teachers' initiatives in relation to the desirable aims of students' actions for a "change" concerning issues of sustainability; this in order to identifying teachers' subject positions and the emerging educational *myth of social change*. Article IV: *Teachers as agents for social change? Subject positions from a transformative perspective of sustainability*.

The third purpose is to develop analytical methods where conflicting articulations of environmental issues and sustainability are taken into account, based on language and discourse theory for conducting empirical investigations of meaning-making. These methods are described and explained in the four articles included in this thesis and further presented in the chapter "Theoretical Influences".

Further outline of the thesis

In the next chapter, previous research in relation to the purposes of my thesis is described and discussed to situate the thesis. This background consists of research in relation to environmental and sustainability education focusing democratic processes, pluralism and conflicting perspectives. In the third chapter, I present the theoretical foundation. The methodology is elaborated with influences mainly from the theoretical frameworks of Bakhtin (c.f. 1981, 1986), Wertsch (c.f. 1991, 1998), Biesta (c.f. 2009a, 2011b), and Laclau and Mouffe (c.f. 2001), and the analytical procedure is discussed. After this chapter, the empirical context is outlined, including the presentation of data collection and ethical and methodological considerations.

Further follows a description of the interrelations of studies. In the concluding chapter, the results are summarised and discussed, and the overall conclusions and implications of this research is presented. The last part of the thesis consists of the four articles/manuscript which report the research that has been undertaken.

THIS THESIS IN RELATION TO PREVIOUS RESEARCH

Previous sections have dealt with the teaching traditions of environmental and sustainability *education* in a historical context. In contrast, this section will relate to previous *research*, starting from a historical background of environmental educational research in general to approach the more particular focus of the issues problematised in my dissertation. Research of particular interest for my studies relates to democratic processes in relation to environmental and sustainability education, focusing meaning-making of sustainability, approaches of pluralism, and conflicting perspectives. This serves as a foundation for my focus on teachers' meaning-making of the aims and purposes of ESD.

This background presents an active selection in relation to my research focus. The active choice is founded upon research studies, reviews and literature partly from the body of research constituting the traditions of the field of environmental and sustainability education. I have been introduced to the main part of this literature through the two graduate schools I have been involved in, the National Graduate School in Science and Technology Education Research (FontD) and as associated to the Graduate School in Education and Sustainable Development (GRESO). Seminars and research conferences have also served as qualitative venues to actual and new references within the field. Articles from scientific journals of importance for the field, such as the *Environmental Education Research*, databases as *ERIC* and *EBSCO* have also been valuable resources.

Before entering the more particular focus, the research traditions of environmental and sustainability education will be outlined as an additional background for discussing the aims and purposes of ESD, starting from the 1970's. The main references for the brief background of environmental education research comes from the research reviews of Hart and Nolan (1999), Rickinson (2001), Scott and Gough (2003, 2004), Östman (2003) and the International Handbook of Research on Environmental Education (Stevenson, Brody, Dillon & Wals, 2013).

Research traditions of environmental and sustainability education

As earlier mentioned, during the 1970s, fact-based education was the dominant teaching tradition in environmental education (EE); therefore, the students' learning outcomes are in focus in *environmental educational research* (Öhman, 2003). The research of misconceptions is the dominant perspective alongside studies of how students fulfil the educational aims and goals of environmental education. The aim is to produce knowledge to make the teaching more effective, as interpreted through a positivistic research tradition. Research of the knowledge-attitude-behaviour continuum (KAB) is gaining ground and the causal link of KAB is more or less taken for granted. The fact-based tradition of environmental education and the positivistic research tradition share the epistemological view of knowledge as being objective and based on true facts, discovered in relation to the "real world" (Öhman, 2003).

In the research community during the 1980s, a debate between proponents of qualitative versus quantitative methods grew, and knowledge was put forward as socially constructed (Hart & Nolan, 1999). The qualitative research of environmental education was progressing, and the studies of KAB partly changes focus, taking the approach of analysing how to understand the *processes* more than the outcome, thus underscoring the interrelations of KAB (Östman, 2003). Certain studies during this time began to focus on the students' socio-economic conditions, ethnicity and gender in relation to the school context. The research tradition thus opens up for interpretive analyses.

As KAB research expands, its complexity becomes accentuated, and during the 1990s, the former taken-for-granted causality is questioned. This is the beginning of a decade where environmental educational research expands, both in terms of volume, but also in terms of methodological approaches. Critical approaches and debates enter—primarily through feminist and postmodern research—and problematise the role of environmental education (Hart & Nolan, 1999). In the review “Learners and Learning in Environmental Education”, Rickinson (2001) talks about three established themes for international environmental research during 1993–1999: pupils’ knowledge about the environment, pupils’ attitudes and behaviour concerning the environment, and the effects of environmental education. Several studies show that students comprehend nature as something static which humans do not have any influence on. Nature is seen as something separate from society; it is either vulnerable or dangerous, or else a place for recreation.

Contemporary research in the twenty-first century in environmental and sustainability education puts forward *the complex and conflicting views* of sustainable questions. Education, in relation to issues of sustainability, is characterised by complexity, uncertainty and necessity (Jickling & Wals, 2008; Jonsson, 2008; Sauvé, 2005; Scott & Gough, 2003). The uncertainty and complexity of the future, and the many different cultural contexts elucidate the dynamics of these questions (c.f. Barrue & Albe, 2013; Beck, 1992). Sustainability is viewed from different perspectives: as social-environmental-economic-cultural, past-present-future, local-global and individual-public. Pluralism is often put forward as a means for handling “competing visions of the truth” and to take different opinions, knowledge and conflicting views into account in ESD to promote a democratic education (Breiting, Mayer & Mogensen, 2005; Breiting & Mogensen, 1999; Hart, 2004; Jensen & Schnack, 1997; Lundegård & Wickman, 2007; Scott & Gough, 2003; Öhman, 2006a). At the same time, pluralism and the concept of ESD are contested, as giving way for a neoliberal agenda. In this, it converts environmental questions into issues of *individual “choices”* and opening for interpretations of *sustainable development* as equal to prerequisites for a continuous *economic growth*, where

the eco-environmental questions functions as tools to guarantee the sustainability of nature as *natural resources* to exploit (Jickling & Wals, 2008; Sauvé & Berryman, 2005; Stables, 2001).

Since ESD is developed through international top-down concepts, it has also been considered challenging as vulnerable to claims that it amounts to indoctrination by promoting a “sustainable” way of living by experts (Jickling, 1992, 2001; Jickling & Wals, 2008; Læssøe, 2010; Sauvé, 2002). In this debate ESD is also questioned as an “educational slogan” (Jickling & Spork, 1998; Kyburz-Graber, Hofer, & Wolfensberger, 2006). The questions of whether a participatory approach in ESD opens up for an active and democratic education or, rather, if this might risk being an education of instrumental character are other voices from the ongoing debate about sustainable development in education. Accordingly, there is a debate concerning what ESD promotes in education (c.f. Bonnett, 2002; Fien, 2000; Fien & Trainer, 1993; Gough, 1997; Ideland & Malmberg, 2015; Jickling, 2001; Jickling & Wals, 2008; Læssøe, 2010; Payne, 2001; Sauvé, 2002, 2005). This debate mirrors differences rooted in what we value as purpose of education, of environmental education and sustainability and development, highlighting questions about democracy in education, qualification, pluralism and the political.

In the complexity of different views in relation to sustainability, education, and purpose, the next section more closely discusses areas in relation to the more particular research focus of my thesis. This will further entail educational processes in relation to *sustainability and democracy*. As previously mentioned, three areas are of particular interest as areas in educational tensions: development of students as political subjects, qualification and social change.

Beyond, I mostly use the term *ESD*. This is in relation to its use as an international policy concept or in line with the Swedish context in its corresponding term used in both school curricula and educational contexts, “Lärande för hållbar utveckling” (The Swedish National Agency for Education, 2011, 2013). However, I also use other concepts such as *environmental education* and *sustainability* when I include, or relate to, other contexts. My hope is that the difference in their usage will be clear from the context.

Critical debates and perspectives of educational purpose of ESD in relation to international policy documents, national school documents and interpretations in local practice are still rather-limited perspectives of educational research (Jickling & Wals, 2008; Læssøe, 2010; Læssøe, Feinstein & Blum, 2013; Östman, 2003).

The vision of ESD

Sustainable Development might be described as the vision of the ambiguous “love story” between society and nature, freedom and justice, and necessity and uncertainty. A complex love story, bringing conflicting aims to education by what might be characterised as dichotomies or paradoxes concerning: normativity vs pluralism, individual focus vs public concerns, consensus vs conflicts, and complexity vs rationality.

ESD has been a journey for a “good future”, with an emphasis on *education for change* (Wals, 2009). It has resulted in formulations of goals in international policy documents (e.g. UNESCO, 2005) as well as in national and local curricula. This has engaged national school boards, teachers’ everyday teaching and informal education (Björneloo, 2007; Leo & Wickenberg, 2013). However, there is a difference between the discourse from policy documents – with visions of a harmonious relationship between social, cultural, economic and environmental goals of sustainable development – and the conflicts of interest arising when facing the reality of our way of living (Sauvé, 2002; Scott & Gough, 2003).

To problematise democratic perspectives and approaches in relation to purposes reveals many areas in tension. Since this thesis has both empirical and methodological purposes, the review is comprised of theoretical discussions alongside the results of empirical studies. The following part of this chapter is intended to situate the thesis in relation to previous research and to work as a foundation to problematise the aims and purposes of ESD by focusing areas in tensions:

1. Individual learning and matter of public concerns, which is represented by areas in tension such as *citizenship* and *competences* and ESD as *content* to learn or *processes* of learning.

2. Consensus versus conflicts, about the tensions between *normativity* and *pluralistic approaches* of ESD, the “harmonious” consensus view of sustainable development, predefined or open-ended education and pluralistic approaches in relation to *conflicts*.

Individual learning and matters of public concern

Among the educational goals for sustainable development, we find issues surrounding the use of natural resources, climate change, justice, health, human rights and democracy. These issues concern how we live and organise our societies, and they reveal tension between the personal and the public which is embedded in sustainability issues:

Almost every ‘private’ decision has ‘public’ consequences and social conditions affect individuals’ freedom of choice (Van Poeck and Vandenabeele, 2012 p. 541).

The close link to citizenship highlights sustainability issues as concerns on the individual, as well as collective, level (Biesta & Lawy, 2006; Breiting & Mogensen, 1999; Jensen & Schnack, 1997; Mogensen & Schnack, 2010). However, in the international policy discourse of ESD, issues of sustainable development are identified as being mainly matters of competences and *individual learning*, where proper learning strategies are seen as a way to tackle those problems (Biesta, 2011a, b; Van Poeck & Vandenabeele, 2012). This approach has been discussed as reinforcing instrumental relationship of learning, citizenship and democracy.

Citizenship and competences

Citizenship could be seen as an educational perspective of ESD-approaches (Van Poeck & Vandenabeele, 2012). Recently, there has been a growing emphasis on increasing student participation as well as pluralistic approaches in education related to environment and sustainability (Læssøe, 2010; Rudsberg & Öhman, 2010; Öhman & Öhman, 2013). This is often described in terms of competences for an active citizenship. The growing emphasis on “em-

powering” students is directed at fostering citizens who are able to actively participate in democratic decision-making as an approach of education for sustainable development. This is regarded as a way to strengthen the participatory approach and, by this, the democracy in relation to education (Grooms, Sampson & Golden, 2014; Mogensen & Schnack, 2010).

However, according to Læssøe (2010), participatory approaches do not enhance a democratic and critical approach of actual or future sustainability issues *per se*. Læssøe discusses what Hajer (1995) defines as a contemporary hegemonic *ecological modernization discourse* of sustainable development. This discourse risks reducing issues of sustainability to a participation of consensus-based processes for promoting technological, problem-free solutions, thus reducing the critical and creative problem-solving processes and neglecting the political conflicting dimensions of sustainable questions.

According to Wals (2010), the current literature on competence-based education and learning is still deprived of a critical perspective. Wals argues for a more critical approach where he stresses that “competence is not something one possesses, but rather is a relational property that emerges in a context in interaction with others and the situation and/or the environment in which it takes place” (p. 149). In the same way, Biesta (2011b) argues in his article “The Ignorant Citizen”, and in departure from Mouffe and Rancière, that “the democratic citizen” is not a predefined identity that can simply be taught and learned, but emerges again and again in new ways from *engagement* with the experiment of democratic politics” (p. 152). This view emphasises democratic teaching as encounters which emphasise differences as possibilities for students to engage and learn from. In other words, teaching as a way to learn *from something* rather than to learn *for something*. Lawy and Biesta (2006) have actualised these differences as citizenship-as-practice. This reasoning is a way to shift the focus from competences that have to be acquired to a democratic nature of educational spaces and practices.

In Denmark, *action competence* has been a key concept since the 1980s (Breiting et al., 2009; Jensen & Schnack, 1997; Jickling &

Wals, 2008; Mogensen & Schnack, 2010). In an attempt to clarify the meaning of action competence in a time where “competence” has become a buzzword, Mogensen and Schnack (2010) emphasise the concept as *an educational ideal* of participatory and action-oriented teaching-learning to help students find an active role in finding democratic solutions to problems connected to sustainable development. The action-competence approach emphasises environmental problems as societal issues that involve *conflicting interests*, and it stresses the students’ development towards critical action. In the publication *Quality Criteria for ESD Schools* (Breiting, Mayer & Mogensen, 2005), the action-competence approach is concretised to facilitate critical discussions within the educational context and to support quality enhancement (rather than quality control).

ESD as content to learn or as processes of learning

In Björneloo’s (2007) studies of ESD (2007), three general educational themes emerge from the teachers’ descriptions of their interpretations of educational aims in relation to sustainable development in a Swedish school context. ESD is described as a *culture building*, an *ethical project*, and as *children’s individual sustainability*. The conclusion is founded on interviews with teachers from mainly primary school. The themes are connected to aims such as giving the students a holistic view of events happening around them to develop students’ responsibility and to empower students.

In the implementation work towards ESD, the international project ENSI (Environment and School Initiative) was initiated by OECD/CERI in 1986 (Stevenson & Robottom, 2013). The Swedish part of this project was conducted through action research in relation to teacher transformative processes which go from a more traditional environmental education based on natural science teaching to embracing the wider perspective of ESD (Axelsson, 1993, 1997). One of the main conclusions of this research shows how a change of the *teaching repertoires* will affect the *content repertoires*, while changing the content repertoire will not necessarily affect the teaching repertoires (Axelsson, 1997). These results put forward the importance of the *teaching process* in relation to

educational development, embracing teaching processes as embedded in students learning and accentuating participatory approaches. The action research approach is by itself – as a method – embodying the emphasis of participatory approaches of teaching as a socialisation of learning as an active *process to learn from*, rather than *predefined knowledge to learn for something*.

According to P. Sund, (2008; P. Sund & Wickman, 2008), socialisation is often regarded as an external fostering process, while learning (subject matter) is understood more as an inner, individual process. However, from a pragmatic perspective, P. Sund, argues for an understanding where the socialisation process is regarded as an integrated and mutual part of the teaching process through companion meanings (Roberts & Östman, 1998). Due to this, how issues of sustainability constitute value-laden content of education related to the actual teacher's companion meanings is emphasised through empirical studies (e.g. interviews with teachers) and regarded as important educational aspects which need to be critically examined in relation to an open, democratic school system. The pluralistic approach is stressed as a way towards a more open-ended and democratic education. Hence, this study also emphasises how content in teaching comprises the amalgam of fact-based knowledge and values.

Summarising remarks in relation to my research

To sum up, these different educational views in tension (i.e. individual learning versus a public approach, competences and content to learn versus processes to learn from) reflect different views of how students' learning and qualification is valued in relation to issues of sustainability, democracy and citizenship. How teachers handle this relation between individual matters and public concern in an educational context draws the attention towards democratic concerns and the political. It is a balance between different interpretations, aims, and purposes of education which also raises the issues of normativity and pluralism. This tension between the instrumental and emancipatory approaches of education in ESD is declared as an area that requires more attention by research (Læssøe, 2010; Wals, 2010).

The ambition of my research is to gain knowledge from *social practice* in order to examine how teachers articulate aims in educational areas of ESD and to problematise tensions and relational purpose. In relation to the discussion above, my aim is to empirically investigate teachers' articulations of how education or learning situations might leave room for students to develop as political subjects (Article II). This thesis is founded upon discourse theory, where social practices are considered as discourses constructed by ongoing *articulation*, giving meaning to the social context they are part of. It is through our use of language in different social contexts that we construct meaning from the world around us (Laclau & Mouffe, 2001). By using this framework, the research keeps the focus on the teachers' perspectives, to focus how the educational practice makes meaning.

Consensus vs conflicts: tensions through normativity, pluralism and relativism

Another area discussed in this research field is the tension of consensus or conflict in relation to pluralistic approaches of environmental and sustainability education. As mentioned, the policy documents of ESD (e.g. UNESCO, 2005) articulate the need for *harmonious relations* between the sustainability goals of social, cultural, economic, and environmental interests to envision sustainable development; a challenge, given the conflicts of interest that arise when one faces the complexity of our daily lives. The goal of a mutual "harmonisation" of such embedded diversity of values is not unproblematic, especially when embracing the vision to fulfil a better future *for all*. Nevertheless, decisions that *mutually affect* social, cultural, economic, and environmental dimensions of sustainability are an everyday concern (Van Poeck & Vandenaabee, 2012; Öhman & Öhman, 2012)

Furthermore, as earlier mentioned the direction of policy documents of ESD have been discussed, and questions raised, whether this education should promote particular ends (Jickling & Spork, 1998; Jickling & Wals, 2013). The initiative and mission of the United Nations Decade of Education for Sustainable Development

(2005-2014), enhanced by GAP (UNESCO, 2013), state the general goal as follows (UNESCO, 2005, p. 6):

The overall goal of the DESD is to integrate the principles, values and practices of sustainable development into all aspects of education and learning. This educational effort will encourage changes in behaviour that will create a more sustainable future in terms of environmental integrity, economic viability and a just society for present and future generations.

The policy formulations have been subject to lively debates in the research field addressing the problematic relationship between democracy, economy, ecology and sustainable development (Jickling, 2001, 2003; Jickling & Wals, 2008; Robottom, 2013; Scott & Gough, 2003). This leaves education in a kind of balancing act of a “global emergency discourse” for an education promoting social change towards more sustainable living and the problem of pinpointing such a universal behavioural change appropriate to democratic education. Contemporary debates from practitioners in relation to the purpose of ESD centres around whether the direction of this education is “implicit environmental advocacy or reasoned problem-solving, prescriptive behaviour change or sound science education, democratic decision-making or critical thinking about social transformation” (Fraser, Gupta & Krasny, 2014, p. 1). Hence, the debate concerns the normativity as well as the diversity of different perspectives and content in relation to ESD.

Science subjects have traditionally dominated as the cornerstones of a fact-based tradition of environmental education (Axelsson, 1997; Gough, 1997; Jensen & Schnack, 1997; Öhman, 2004; Östman, 2003). Although education might be more extensive today, the natural science perspective still has a privileged status in environmental and sustainability education. This is not surprising since there is much factual knowledge about science to learn to be able to practice an ecological system thinking (e.g. climate change). Science knowledge is important to understand certain perspectives of sustainability. However, system thinking in relation to sustain-

ability also includes societal systems as cultural, social and economic dimensions, which all are mutual and interrelated parts of our society and life styles (Sterling, 2001). In this meaning, sustainability is a genuine social, cultural and political issue (Scott & Gough, 2003). These interrelation have been highlighting the trans-disciplinary orientation of ESD, which is discussed as desirable but challenging transformation to most curricula (Borg, Gericke, Höglund & Bergman, 2014; Levinson, Douglas, Evans, Kirton, Koulouris, Turner & Finegold, 2001). Jensen and Schnack (1997) stress the dominance of scientism in environmental education, which focuses on the transfer of knowledge about environmental problems, ignoring their political dimensions. However, the *conflicting-interest* approach, which emphasises environmental issues as social conflicts between humans, has been developed as a part of the Danish action-competence approach in environmental and sustainability education (Jensen, 2004; Jensen & Schnack, 1997). These issues between conflict and consensus, normativity and pluralism are discussed in political policy contexts of sustainable development as well as in relation to the educational perspectives of ESD (e.g. Barbier, 1987; Breiting et al. 2009; Herremans & Reid, 2002; Jickling & Wals, 2008, 2013; Robottom, 2013; Sadler, 1990; Sauvé, 2002, 2005; UNESCO, 2005; Wals & Jickling, 2002). ESD can be perceived as a coin; one side represents the desire to encourage “sustainable thinking” by promoting harmonious relations between different interests of sustainability and thus moving towards consensus and sustainable social norms. On the other side is a desire to scrutinise the conflicting interests and the call for subjectivity (c.f. Todd, 2009; Wals, 2010).

Many practices of ESD are oriented towards a consensus, which has been criticised as an approach that risks marginalising the conflicting values implied in sustainable development (Laessoe, 2007, 2010; Sauvé, 2002; Öhman & Öhman, 2013). This risks neglecting the students’ possibilities to challenge knowledge, values and perceptions in relation to sustainability issues. Democracy always involves contrasting options, dilemmas and conflicts (Lundegård & Wickman, 2007, 2012; Mouffe, 1992, 2000b; Rudsberg & Öhman, 2010; Todd, 2009). The pluralistic tradition of ESD devel-

oped as an answer to this “democratic dilemma” (Breiting & Wickenberg, 2010; Rudsberg & Öhman, 2010). However, how this pluralistic and participatory approach will be achieved is not unproblematic; for instance, Öhman and Öhman (2013) conclude in their study of participatory approach in practice, that participatory approaches do not necessarily mean that knowledge becomes more diverse. Rudsberg and Öhman (2010) investigate the role of teachers’ actions for students’ meaning-making processes, in an empirical case study. This study focuses on the possibilities for a pluralistic approach to different (conflicting) perspectives and shows an example of how participatory approach to enhance a pluralistic view can function in practice. Four qualitatively different epistemological moves made by teachers were identified. The study based on a pragmatic theoretical foundation concludes how those epistemological moves of *generalising*, *specifying*, *comparing* and *testing* enhance an open-ended approach in communication about value-related sustainable issues. The result of this study implies an example where the role of the teacher is emphasised.

In relation to this discussion, the first study of my thesis elaborate on conflicting (and consensus) views in relation to sustainable development and ESD. The analyses work to uncover how conflicting perspectives of sustainability are embedded in and between some main explanatory models of sustainable development (Barbier, 1987; Breiting et al. 2009; Herremans & Reid, 2002; Sadler, 1990). Further, how perspectives develop in a discussion of sustainable development among teacher colleagues are analysed. Different perspectives (what is discussed) and the ways the language is used (how the utterances interact in the discussion) are analysed and problematised (Article I).

Predefined vs open-ended education

The Swedish National Agency for Education (2013) has a conforming formulation to the DESD policy, where education should illuminate how “our ways of living and working can best be adapted to create sustainable development” (ibid. p. 6) at the same time as students should “develop a personal approach to overarching, global environmental issues” (ibid. p. 6). Thus, educational

practice is presented with the challenge of facing education as pre-defined *as well as* being open-ended.

Osberg and Biesta (2010), to some extent, links to this discussion by their elaboration of pre-given educational end/s (or outcome/s) as open. According to Osberg and Biesta, a predefined end is what qualifies a curriculum as *educational*, which means that we know what we educate for. However, the key here is how we define this end and the way we handle the educational process, or learning process, to come to this pre-given end.

Osberg and Biesta (2010) puts forward the “complex” understanding of causality and process as an alternative to deterministic, linear and logic outcomes. In short, this change in logic carries an expansion of possible outcomes, an increasing level of order over time (as is the case with, for example, ecosystems). Such complex systems consists of dynamic processes of interrelations with no distinct boundaries. Since complex systems interrelate with other complex systems, it is difficult to calculate and trace back the particular interaction causing a specific outcome. To transfer this complex *thinking* to complex *learning* could be a way to think of a pluralistic approach of teaching in relation to for example sustainability issues. Instead of a particular, pre-specified outcome, the process opens for the “as-yet-unimagined” outcome. This implies thinking of the outcome as a preconceived purpose of invention, novelty and creativity prior to the linear causality of reproduction. Also, this changes the focus from the outcome as right or wrong to the process of learning by means of arranging and opening the teaching process for encounters where students have the possibilities to challenge and experiment with different alternative ways to face difference, values, logics and understandings.

In a world where there is no choice between equally suitable alternatives (because there is always only one ‘correct’ or ‘best’ alternative) there is no possibility for political and ethical judgement, and hence no possibility for democracy (Osberg & Biesta, 2010, p. 605)

In my understanding, I see this as a way to elaborate on a “defined” outcome – a purpose of education – which opens to face differences and strives for novelty; a process opening room for the subjectification process. These perspectives relate to some of the complex tensions in this field, in relation to outcome as predefined or open-ended. This as well relates to tensions in teaching approaches between the dimensions of socialisation, qualification and subjectification. The different aims and views of educational purpose is an issue in discussion and, in its trajectory, how to make students develop by teaching processes in environmental and sustainability education. Empirical analyses from experienced teachers might help us to problematise these areas and contribute to expand this rather limited field of research (c.f. Axelsson, 1997; P. Sund & Wickman, 2008). This is where my thesis has an interest in making a contribution through studies analysing teachers’ articulations of desirable aims of ESD.

In ESD and other educational contexts, deliberative discussions are upheld as one approach wherein different perspectives are supposed to be visualised and valued. However, as mentioned earlier, to make conflicting views and difference visible in discussions is not unproblematic (Rudsberg & Öhman, 2010).

There have been notes of caution against a pluralistic approach in environmental and sustainability issues in education. Wals (2010) stresses that the pluralistic tradition could be problematic if all learning outcomes are considered *equally valid*. According to Wals, this could even lead to an “anything goes” relativism because if conflicting views are always upheld to be equally right from different perspectives, and since “your view on sustainability is as true as mine and that *I would be wrong to critique yours*” (p.45), this will always keep us from legitimately criticising another person’s view. However, the question of relativism is built on the view of an objective reference of universal values.

This discussion also connect to how Mouffe (2000a, b) argues for a conflictual consensus – *facing and discussing the conflicting borders* that are the foundations of a pluralistic recognition. Mouffe (2000a) is also one of the critical voices questioning the rational and equal prerequisites upon which deliberative discussions

are founded. This is further developed in the next chapter “Theoretical Influences”, under the rubric “Agonistic Pluralism” and “Conflictual Consensus”. However, in this chapter, the discussion of pluralism is further developed in the struggle for its definition, realisation and legitimation of difference, since this is a central concept of the presented research. Further, the next section will take a closer view of pluralism through the work of Todd (2009).

Pluralism without conflict?

Can there be pluralism without conflict? This is a question Todd (2009) poses and discusses in her article with the same name. The first issue she fleshes out is how we define *pluralism*. A common way to deal with pluralism in educational contexts is through efforts in intercultural, multicultural and cosmopolitan educational projects. The aim is to deal with pluralism in ways of “diversity”, “multiplicity” and “difference”, and where democracy is seen as a dialogue of “recognition” across such variations to develop a more inclusive democracy (Todd, 2009, p. 51). Thus, democracy is seen to be pluralist in account of the variety of cultural traditions, ethnic groups, religious beliefs etc. and the vision of a recognition that leads to a democratic way to deal with conflicts for a more peaceful form of coexistence. The hortatory question Todd challenge us to reflect upon remains: is this what pluralism means for democracy?

In line with this questioning, pluralism could be seen through different lenses: a *mathematical view* (more than one human in the world or more than one perspective), the *social view* (a system for handling different interests, beliefs, traditions, values or ethnical belongings), the *discursive view* (the play of language that constitutes manifold subjectivities and a divided sense of self) or the *radical ontological view* (the human is itself a multiplicity, in which each unique subject comes into existence in the moment of being with others). Todd (2009) argues for the more radical view of pluralism, following in the footsteps of Arendt and Levinas. Accordingly:

...conflicts and contestations are not merely incidental to human plurality, nor are they mere expressions of the failure of recognition or dialogue; instead, they are inevitable consequences of the deep separation and non-exchangeability of subjective existence (Todd, 2009, p. 51).

The conclusion of such a definition is that relations are not about “overcoming” differences but rather, the existence of singularity in a shared world. The meaning of existence does not lie in individual or collective bodies, “but in the space of the ‘with’ that allows for singular subjects to emerge” (Todd, 2009, p. 55). Then, the understanding of conflicts is a part of the very constitution of subjectivity itself. Different values, interests and perspectives are mere effects of the conflicting aspects of facing radical singularity in all its plurality. This means that regarding certain forms of conflict as central to democracy is the way that we can deal with it beyond the usual desire simply to erase it (Mouffe, 1992; Todd, 2009; Todd & Säfström, 2008). In addition, the same line of reasoning is developed by Van Poeck and Vandenabeele (2012) in their argument for an openness to listen to other perspectives and to counter and respond *when those moments of divergent opinions emerge* in different encounters and situations. The emphasis is here:

...that conflicts are articulated rather than ‘resolved’ or avoided and that they are dealt with in political terms (power, hegemony, conflict) instead of in moral (good vs bad) or rational (right vs wrong terms) terms (Van Poeck & Vandenabeele, 2012, p. 548).

In an empirical study, Lundegård and Wickman (2012) show how students in a discussion of sustainability continuously position one another to make choices. Value judgements dealing with human conflicts of interests stand as the axis on which the dialog on sustainable development is revolves around. From a shared understanding they develop new and conflicting standpoints and experience difference, pluralism, and conflicting views. The way this study visualises how political subjects emerge in educational mo-

ments is something I bring with me to use in relation to my analyses of students' possibilities to develop as political subjects.

Summarising remarks in relation to my research

The emphasis of a conflict versus consensus approach is an interesting and continual discussion, pinpointing the question of purpose and view of functions of education. How to educate for dynamic awareness, responsiveness, urgent action, social change and political engagement framed in sustainability perspectives calls on a humble attitude towards those challenges. On the other hand, one might as well interpret this as a vitalising discussion to raise questions about purpose in education. Facing the bifurcation of conflict vs consensus, it is of interest to scrutinise how teachers reason in a school context where assessments and defined curriculum goals are to be clarified as matters of learning outcome (Articles II, III, IV). Hence, to get closer to how these challenges are constructed in social practice, the ambition of my research is to contribute with a perspective based on teachers' articulations, in order to problematise and discuss these tensions.

In the next chapter I will introduce the theoretical foundation for the studies in my thesis. This is outlined as encounters with theory, shaping lenses to interpret how to make meaning of the world from certain perspectives and the role of knowledge in relation to this understanding. Or, in other words, the ontological and epistemological foundations. Thereafter, I will present my methods which enabled me to bring about empirical data; data to be further analysed through the theoretical lenses and to elaborate for a further understanding.

THEORETICAL INFLUENCES

In search of analytical tools

When I studied ecology at university, there were times when we, as students, were frustrated about how difficult it was to pinpoint the exact and reliable answers of causal relationships in field studies and experiments. To detect “the actual factor of significance” to answer why a certain ecosystem or particular relationship between certain species and their environment act in certain ways was almost impossible. Because – it all depends – it is all about relationships. As we continued our studies, we found that this was actually the interesting part of ecological science. It was not possible to state the exact reasons or outcomes for our research questions. The dynamics and complexity of biological systems and their abiotic environment are an inter-relational universe where we were explorers trying to make hypotheses about relations, make them to become “good” studies by applying statistical and ecological methods and to be aware of the weaknesses and errors due to our methods. To be an ecologist, you have to think in systems, be aware of unexpected connections, and be humble towards complexity. This was before I was introduced to the social sciences.

To conduct research about education in relation to issues of sustainability is not a paved road; however, it is an educating endeavour. It took a long time before I could settle down to an approach where I felt comfortable with how to ask research questions – what I actually could and *should* try to answer, or, more accurately, try to get a wider understanding about. How I, in dialogue with theory, could understand things differently and open new doors of

discovering how the social world constructed meaning of society and our environment. At first, this seemed like something very different from my former ecological studies. However, after some time, I realised – it is about relations. To be a researcher in education you have to re-think systems, be aware of limitations in detecting connections, and be humble towards complexity.

Voices and discourses

In the studies of this thesis, I have chosen to use teachers' discussions with colleagues about sustainability and ESD as the point of departure for the empirical analyses. My interest is in problematising the complexity and purpose of ESD through teachers' reciprocal articulations of their practice. Analyses of how utterances become privileged and the way voices and speech functions are at play to make meaning is part of the analytical framework. How teachers as professionals – in their social practice – articulate meaning when discussing desirable aims and purpose with their colleagues is one of the main issues problematised in this thesis. This is done by analysing how those discussions open spaces for meaning-making and articulations of discourses. The empirical choice of group discussions make visible how meaning is dynamically developed through language in a relational context.

In the following chapter, I will elaborate on the theoretical influences and key concepts of main importance for my studies. My point of departure is grounded in a didactic research tradition which departs from socio-cultural theory, drawing towards a pragmatic and postmodern approach. Through Bakhtin (1981, 1986), we learn that human communicative processes and language are characterised by multivoicedness – a dialogicality of voices which even includes this thesis. To write a thesis is truly an elaboration and ventriloquation of multiple voices, some of them stronger than others. The references of main importance for my analyses and theoretical foundation are found in relation to Bakhtin's work of voices, utterances and speech communication (primarily of importance for study I) and Laclau and Mouffe (2001), through their elaboration on discourse theory (studies II, III and IV). The readings of Biesta (c.f. 2009a, 2011b) and Mouffe (c.f.

2000a, b) have also been significant as theoretical lenses to develop my analyses. In the next section, I describe my methodological elaboration through “encounters” with texts that derive from those main references.

In encounters with Bakhtin

Voices and utterances

A crucial contribution from Bakhtin implies the elaboration on how communication is “alive” and socially constructed. When we talk, think, read or discuss, we use language to make meaning. There is no meaning in the environment itself, Bakhtin (1986) states:

Meaning cannot (and does not wish to) change physical, material, and other phenomena; it cannot act as a material force. And it does not need to do this; it itself is stronger than any force, it changes the total contextual meaning of an event and reality without changing its actual (existential) composition one iota; everything remains as it was but acquires a completely different contextual meaning (the semantic transformation of existence). Each word of a text is transformed in a new context (p. 165).

In this process, the *utterance*, *voice* and *dialogicality* are just some of the many notions that are elaborated in Bakhtin’s work of how to understand and make meaning of text. *Text* as well as *voice* applies to written, as well as spoken, communication (as other coherent complex of signs, even the study of art, is embraced as *text* [Bakhtin, 1986]). However, unlike Saussure, to study how we use and construct language in our daily lives was the main focus for Bakhtin (Wertsch, 1991). Saussure differentiates between *language* and *parole*; the latter refers to spoken language, which was considered too unstable and freely constructed to be appropriate for linguistic analyses. It is from here that Bakhtin’s work starts to show how patterns of organisation derive from the notion of social spoken language. The individual speaker does not construct completely free forms of language, but is invoked in social language

that shapes what the speaker's "individual" voice can say (Wertch, 1991).

According to Bakhtin (1986), all communication is, by nature, dialogic; there is always a sender and always a receiver of an utterance. This means that all true communication involves at least two voices. Thus, the utterance is addressed and then adjusted by a sender and is interpreted by the receiver – this is the basic construct of *dialogicality*.

The utterances refers to "the *real unit* of speech communication" (Bakhtin, 1986, p. 71). This *real unit* is the form of concrete utterances of individual, speaking people and its boundaries are determined by a change of the speaking subject. How utterances are relationally constructed, used, and make meaning in the situated context is central in the analyses for understanding the social language or "language-game" (Wetsch, 1991). Even if the utterance is the unit of a speaking subject, any utterance "is a link in the chain of speech communication" (Bakhtin, 1986, p. 84). Each utterance is filled with echoes of other utterances in the communality of the sphere of speech communication. The words, utterances or language are never neutral "it is populated – overpopulated with the intentions of others" (Bakhtin, 1981, p. 294). In this way, all words have a "taste". "Each word tastes of the context and contexts in which it has lived its socially charged life" (p. 293). Thus, each utterance is composed of previous utterances and filled with *dialogic* overtones. It is polyphonic: "the word in language is half someone else's" (p. 293).

This awareness of socially-constructed speech communication can help us to analyse how meaning is socially constructed in language use. To analyse and understand an utterance means to orient oneself with respect to it and to find its appropriate place in the corresponding context. Another perspective of communication and dialogicality is how utterances are legitimised to be included in the chain of speech communication or else neglected. As Mouffe (1992, 2000a) explains, in agonistic pluralism (I refer back to this later in this text), utterances are legitimised when responded to with respect, despite differences in viewpoint. Since I am interested in how encounters and practices of communication can generate

new perspectives (Article I), I have a particular interest in this dialogic function of speech. To approach this, I depart from Bakhtin's elaboration on the struggle between the internally-persuasive discourse and the authoritative word, but I will bring in what I consider as more useful, functions of speech, to problematise the tension of *dialogic and univocal functions of speech* (Lotman, 1988 in Wertsch, 1991). A function of speech reveals how we use one another's utterances and whether we make them our own, populate them with our own interpretations or, rather, if they work more to transmit "conclusive" information, ignoring other attempts of interpretation.

Functions of speech

These functions should be seen as tendencies that mainly operate in dynamic tension with each other in a conversation. The dialogic function of speech represents a dialogue in which utterances are built upon without necessarily sharing the same definitions or opinions; instead, they are used as "thinking devices" i.e. tools for consequences. In contrast, the univocal function characteristically works mainly to transmit information. The authoritative discourse is related to the univocal function of speech: "The authoritative word demands that we acknowledge it, that we make it our own" (Bakhtin, 1981, p. 342).

Wertsch (1998) refers to the function of speech (based on Lotman, 1988) in a way I regard as useful to analyse how different views of sustainability have possibilities to develop in a discussion and social meaning-making. In Wertsch's (1998, p. 115) reference to Lotman (1988) the *Dialogic function* [of speech] tends towards dynamism, heterogeneity and conflict among voices. The focus is on how an interlocutor might use utterances to respond in such a way that new meanings are generated. In contrast, the *univocal function* [of speech] tends towards a single, shared homogeneous perspective. It functions to 'receive' meanings as the sender defines it, without any new action.

I regard the functions of speech as helpful for studying the conditions for alternative utterances to become tools for action – and if

an utterance is actually legitimised (reacted upon) in the discussion, in the first run.

In my studies language is central. In these analyses Bakhtin's theoretical framework of communication as socially constructed is the point of departure. In line with Bakhtin, I define an utterance not as limited to the extent of a linguistic unity but, rather, as a "link in the chain of speech communication" (Bakhtin, 1986, p. 84). The utterance is not to be seen as a solitary unit, but as a part of a meaning-making context. This means that my analysis is focused on the relationship between utterances. How to use the function of speech (Wertsch, 1998) as a framework to analyse how the discussion shows dialogic and authoritative/univocal moments is elaborated in my first study find in Article I of this thesis.

I will now continue to elaborate on language as prerequisites for meaning-making discussions by bringing in some thoughts by Mouffe (2000a). After this will follow an outline of how I make use of tools from discourse theory (Laclau & Mouffe, 2001) in relation to my studies (Article II-VI).

In encounters with Mouffe

Prerequisites of discussions

By referring to Wittgenstein, Mouffe (2000a) emphasises how language exists, is formulated, and is connected to different social practises, and therefore always embedded with values. In line with this, she gives rise to some critique of *deliberative discussions* in relation to Rawls' and Habermas' point of departure. The ideal of deliberation is generally described as an interaction where equal individuals exchange carefully weighed reasons and morally justified arguments. The argumentative process of deliberation should rely on logically structured arguments and the "common good". To what extent these prerequisites, could or *should* be fulfilled to make encounters democratic is one of the issues Mouffe problematize in her work. This argumentation will be further developed in the following section concerning *conflictual consensus* and *agonistic pluralism*. In relation to my studies, how some of Mouffe's main contentions embrace how the deliberative argumentations are built on what she sees as an illusion of an ability to separate pas-

sion and political tension in favour of the rationality and instrumental reasoning are of particular interest. In the rationalistic approaches the subject is abstracted from social and power relations, language, culture and the practices that make the individual possible, in other words, “what are the conditions of the democratic subject” (Mouffe 2000a, p. 10). Mouffe thus focus how hegemony and power have to be revealed and not foreclosed by grounding legitimacy on pure rationality.

ESD relates to SSI (Socio-scientific Issues) and citizenship education in the way that it often works to promote certain competences and skills (Sadler, 2004; Zeidler & Nichols, 2009). An example of this is to promote students to take an active part in deliberative discussions where students discuss, debate and reflect on sustainability issues (Rudsberg & Öhman, 2010). Further, to build scientific arguments and develop argumentation skills is a part of the Swedish curriculum (The Swedish National Agency for Education, 2011, 2013). In my thesis I am not in particular looking at deliberative discussions, although I use teachers’ discussions for my analyses (analysing teachers’ articulations). In this context *discussions* are upheld as ways to get to know multiple views and the political. In my first study (Article I), I analyse how functions of speech work in relation to a dialogic meaning-making. This to make visible how utterances might become legitimised and developed. The next studies (Article II-VI) are also based on group discussions among teacher colleagues. In these, I analyse how articulations in the meaning-making context formulate discursive meanings.

Agonistic pluralism and conflictual consensus

As discussed above the deliberative consensus is built on beliefs of the sovereignty of the rational argument and a consensus based on the “universal good” – an approach that Mouffe questions (Mouffe, 2000a, 1992). To her there is no universal or rational best argument in political disputes; rather, there are only different ethico-political interpretations. *Agonistic pluralism* strengthens the focus on the differences (the political including “passion”) by approaching the adversary as a respected “enemy”; not as an antagonist to overcome and persuade but as an agonist who may have le-

gitimate conflicting opinions. To view the most rational argument as the logical end of a democratic process in political debates is, according to Mouffe, a way to confirm hegemonic discourses. Mouffe underlines the significance of making conflicting views and interpretations visible and of legitimising them. The way Mouffe elaborates on agonistic pluralism and conflictual consensus – as consensus on the principles but disagreement about their interpretation – provides a way to understand how pluralistic views and opinions on an issue develop in social context. In the interest of this thesis, I find Mouffe’s approach fruitful for a better awareness of hegemonic discourses which could suppress views that diverge from the consensus order. Or, as Todd and Säfström (2008) put it when discussing how education might cultivate what Mouffe refers to as a *conflictual consensus*:

For the commonality here is not one founded on respect for the rational subject, nor is it found in our agreement with one another, but on the necessity of living with the tensions that are inherent to our pluralistic world (Todd & Säfström, 2008, p. 12).

Widening and adjusting the research track

From problematising the complexity of sustainable development as a concept in discussions of sustainability, the following studies widened the focus to elaborate on the complexity of the *educational* aims and purposes in tension. The results of my first study sparked my interest in getting a closer view of how meaning were dynamically constructed in social practice. The concepts of agonistic pluralism and conflictual consensus (Mouffe, 2000a) led me deeper into how discourses are constructed in a struggle. The ability to analyse the dynamic processes of how desirable aims of ESD emerged and developed differently in the teachers’ meaning-making, awakened my interest in the possibilities of discourse theory. The point of departure for my analyses, means to focus on how social practice relationally create discourses by processes of ongoing articulations in struggle. This will focus the competition for significance between different discourses. Therefore, the point

of departure for the forthcoming analyses was developed through an approach of discourse theory which takes inspiration from Laclau and Mouffe (2001).

Laclau and Mouffe's framework provides an analytical lens with meaning-making as a flow of significant units, to be arrested in particular meaning. Discourse are not represented by an outside perspective, but, articulated by the social practice it is part of, focusing the reciprocal struggle within this practice (Jørgensen & Phillips, 2002; Laclau & Maouffe, 2001). In the following text in this chapter, I will outline how I have been operationalising tools of discourse theory to be used in my analyses. In this elaboration, I emphasise ESD as a discourse in articulation. As such, ESD does not have an explicit articulation by a particular discourse; instead, there is a struggle between competing discourses trying to make their definition the centre.

ESD a discourse in articulation

ESD is a global discourse where many stakeholders are included to articulate its meaning, purpose and content (Bengtsson, 2014). The ambiguity of this concept's purpose and formulations reflects the ambivalence that this perspective brings to education. The balance between good intentions and its role in a democratic education is challenging (Jickling & Wals, 2008; Rudsberg & Öhman, 2010; Sterling, 2010; Van Poeck & Vandenabeele, 2012). This makes the formulations of the purpose and aims of ESD an ongoing discussion and a struggle of different interpretations. In the next section, I will present a background and some central concepts from discourse theory (Laclau & Mouffe, 2001) which are important for my analytical framework.

Discourse Theoretical foundation

In the theoretical departure for my analyses, I am aware of Laclau and Mouffe's (2001) wider societal and political focus and interest in theory development. The aim of this section is not to dwell on the deconstructionist approach that led to the formation of Marxist critical thought, but to try to adapt the analytical framework in tune with my analyses and to narrow the focus. Nevertheless, the

thesis is grounded in a discourse theory view of modern society, characterised by pluralism and ambiguity which are due to economic and cultural globalisation which has led to the dissolution of fixed positions, the exceeding of different boundaries, fragmentation, and individualisation. According to Laclau and Mouffe (2001), this means that today we must radicalise our thinking about society and democracy and put more emphasis on the individual. The individual *as political subject* is not to be understood as related to particular groups as for example class, sex or ethnicity; instead, Mouffe emphasises political subjectivity as fundamentally open and changing (Palinurus, 2007). I will return to the political subject later in the text. Aside from the main references of Laclau and Mouffe (2001) and Jørgensen and Phillips (2002), the work of Unemar Öst (2009) has served as an important model for how to interpret discourse theory as an analytical process. In my analyses, I pay attention to the teachers' utterances as different voices in dialogic meaning-making and analyse how different ESD discourses may be articulated.

To begin, social practices are considered as discourses constructed by ongoing *articulation*, giving meaning to the social context they are part of. It is through our use of language in different social contexts that we construct meaning from the world around us. This means that ESD does not have a particular meaning before it is articulated in the social practice it is part of. Language use is therefore central for the analyses. As language use is a dynamic situated practice, discourses are continuously reconstructed (Laclau & Mouffe, 2001). Hence, language use is regarded as dynamic processes where elements are articulated and re-articulated to make meaning in a relational context. In this way, elements are in an ongoing re-articulation to develop significant meaning in relation to each other. Laclau and Mouffe (2001) explicate articulations of discourse:

...we will call articulations any practice establishing a relation among elements such that their identity is modified as a result of the articulatory practice. The structured totality resulting from the articulatory practice, we will call discourse (p.105).

Articulation is thus a discursive practice which does not have a plan of constitution prior to, or outside, the dispersion of the articulated elements. In my reading, meaning-making discussions between teachers could be seen as a discursive practices with an exchange in which certain meaning emerges as significant, in other words, an *articulatory practice*.

From regarding language as a representation of reality and a mental representation of external objects, the language – through the linguistic turn – becomes constitutive for understanding the objects and the world. To Laclau and Mouffe (2001), every object is constituted as an object of discourse, although this has nothing to do with whether there is a world external to thoughts.

An earthquake or a falling brick is an event that certainly exists, in the sense that it occurs here and now, independently of my will. But whether their specificity as objects is constructed in terms of ‘natural phenomena’ or ‘expressions of the wrath of God’, depends upon the structuring of a discursive field (p. 108).

The discursive field, constituted of possible “meaning-building formations” (elements) without relations to the actual discourse in formulation, constantly overflows every discourse with possible articulations from the openness of the social, thus implicating a constant possibility for new articulations. “New”, to be included as elements for formulating reciprocal meaning with related elements of the discourse in formulation. It is the multiple meanings, the *polysemy*, that disarticulates a discursive structure. Thus, the struggle between and within discourses is in focus (i.e. how the articulations develop to find conclusive meanings and “close” the discourse in relation to other discourses). Any discourse is constituted as an attempt to arrest the flow of differences in order to dominate the field of discursivity (Laclau & Mouffe, 2001, p. 112).

Nevertheless, a closed discourse should be seen only as temporarily closed and always in a dynamic articulation due to the particular context. On the other hand, even if everything seems to be in a constant struggle to be articulated between different dis-

courses, Laclau and Mouffe refer to the social practices as partly-structured, hence discourses could be hard to deconstruct. The point of departure is that discourses always could be reconstructed by new articulations, even if they do not have to be deconstructed. Discourses that have been articulated in the same way for a long time become invisible and, by this, they turn into hegemonic or *objective* discourses which are hard to contest.

The hegemonic tendencies could be understood as situations where a specific worldview is stressed as the true version to understand the world. Constructions of hegemonic tendencies are due to how different social groups, through language, try to accentuate a specific version of a worldview. Laclau and Mouffe's (2001) ambition strives towards making pluralism and ambiguity central for analyses. There is not *one single* basis to understand societal relations or the individual's position, it crucially depends upon its hegemonic articulation with other struggles and demands.

...if contingency and articulation are possible, this is because no discursive formation is a sutured totality and the transformation of the elements into moments is never complete (Laclau & Mouffe, 2001, p. 106).

To make meaning with inspiration from Discourse Theory

Through this theoretical lens, an awareness of hegemonic discourses as in, for example, authoritative texts of international and national policy documents and curricula, could be achieved (Bengtsson & Östman, 2013; Jørgensen & Phillips, 2002; Unemar Öst, 2009). It also works as a prism for my analyses in the narrower context, whereby teachers' articulations construct relational meaning in an articulatory struggle of interpretations. This analytical process enables me to problematise how articulations work in tension and struggle in a relational process and how hegemonic tendencies of purposes might be formulated or deconstructed. This choice emphasises pluralism and ambiguity and makes it possible to focus on different desirable aims and purposes in relation to teachers' meaning-making due to the social practices they are part of. The included studies' (Articles II–IV) starting point, from a dis-

course theory basis, entails an emphasis on language as fundamental to meaning-making, but is also an emphasis of the social as conflictual and built around the struggles between different interests and ideas. In the following section, I will give a description of some of the structuring functions used in my analyses. To develop the analytical tools and processes for my analyses I start from main references of: Laclau and Mouffe (2001), Jørgensen and Phillips (2002), Torfing (1999) and the work of Unemar Öst (2009).

Nodal point, element and moment

Every discourse will be formulated around a partly-fixed centre, a privileged discursive point. Tokens with this structuring function are called *nodal points* (Torfing, 1999). Nodal points are privileged tokens organising related tokens (i.e. moments) in a “chain of equivalence”. Jørgensen and Phillips (2002) give an illustrative example with “body” as a nodal point in the discourse of medicine. “Body” gives surrounding tokens/moments (e.g. “symptom”, “tissue” or “scalpel”) particular meaning by their use in relation to the nodal point, “body”. A nodal point is thus a privileged token around which the other tokens are dispersed and from which the other tokens gain a relational meaning (Torfing, 1999). In this way, the discourse is defined by its “nodal points” and “moments” which, when put together, constitute the crystallised discourse.

Elements are those tokens not yet articulated and not *crystallised* in the particular discourse. They are still in the struggle to make meaning. When in articulation, the elements occupy differentiated positions and derive their significance from how they relationally differ and resemble in specific ways. When the elements are articulated into more fixed meaning, they turn into *moments* of the discourse and the nodal point is thereby given its distinction in the discourse (Jørgensen & Phillips, 2002).

Figure 1. Illustration of antagonistic competing discourses

The figure illustrates elements, nodal points and articulations as they are elaborated in my study. The elements (utterances) are in articulation to formulate mutual meaning in relation to a particular nodal point (central meaning), likewise, the elements have partly different meanings in relation to each other. Meanwhile a different nodal point is in articulation. This reveals the antagonistic struggle when discourses share overdetermined elements in the articulatory process.

In my analyses (Fig 1), the teachers' utterances are seen as elements in articulation. How those elements articulate meaning in relation to a *nodal point* and how they develop meaning in relation to each other is the process that articulates the discourse. When the elements and nodal point are articulated in a way that the shared meaning reveals, the elements are declared into moments, the nodal point is given its particular meaning and the discourse becomes crystallised (c.f. Laclau & Mouffe, 2001). The discourse thereby formulates its meaning, for example, by formulating a particular meaning of critical thinking in relation to ESD. In my analyses, *critical thinking* is an example of a nodal point that is declared by the teachers' articulations of elements, such as "*promoting reflecting individuals*", "*evaluation of sources*" and "*wanting students to develop their own opinion*" (Article II).

However, as mentioned, the crystallisation into particular meaning is a struggling process since every nodal point is constituted within an intertextuality that overflows it and competes for an interpretative prerogative of the discourse (Fig.1 and 2). Antagonism is found where discourses are in a struggle and each position – within a system of difference – could be re-articulated (Laclau & Mouffe, 2001)

The first step in the analyses is a search for a repetitive centre or concept, which the teachers' utterances (elements) are mutually relating to in the meaning-making discussion. For example, *critical thinking* could be this centre (nodal point) in the discussion of desirable educational aims in relation to ESD.

The next step is to analyse how critical thinking gain its particular meaning in the actual context. This is achieved by a thorough examination of the utterances in articulation. The dynamic inter-relation of the articulations is analysed in relation to differences and similarities in the way they articulate meaning of critical thinking. The point of departure is that critical thinking as an expression has no inherent particular meaning. However, in the way that the teachers' utterances mutually articulate meaning in relation to critical thinking, the word gains meaning in the actual context. This dynamic process could be seen as the struggle between alternative meanings (of elements) in the process to define what critical thinking means in this particular context.

The third step entails when the different and mutual relations of meaning of critical thinking are articulated, and the discourse becomes crystallised and formulated. Elements turn into moments and the moments mutually articulates the particular meaning of the nodal point. However, since moments (articulated elements) always can be related to other central concepts (nodal points) in articulation – due to their overdetermination of meaning (polyphonic) – the crystallisation could always be re-articulated. This is what is illustrated as the antagonistic struggle between discourses in fig 1.

Figure 2. Analytical steps in relation to my analysis

Master signifier, subject position and myth

From a discourse theoretical point of view, *the subject* is always defined by its position in the discourse, constituting which actions that are desirable or not (Jørgensen & Phillips, 2002). This position is declared by elements in articulation, with the Master signifier as the signifier of central meaning articulated by specific desired guidelines for action. In the last study of this thesis (Article IV), teacher-specific positions are analysed by the teachers' articulatory practice, in line with previously described analytical processes (Fig. 2). However, the master signifier replaces the nodal point as the central signifier. For example, in this study, the "Teacher as a role model" is crystallised as the master signifier, and given its particular meaning by elements/moments such as "*teacher as guarantor of value systems*" and "*models as inspiration to change lifestyle*". This subject position is however challenged by struggling discourses *interpellating* (Torfinn, 1999) the teacher from other alternative positions. In this way, discourses interpellate individuals by addressing them in a way which constructs them as particular discursive subjectivities. The teacher as a subject is thus defined as *overdetermined*, due to subject positions of overlapping discourses in struggle. Therefore, due to discourses in struggle, the teacher is simultaneously positioned in different subject positions and thus able to identify themselves in different ways in a given situation (Jørgensen & Phillips, 2002; Laclau & Mouffe, 2001).

A *myth* is a term which describes new rooms of representation where it becomes possible to legitimate actions as natural, in the light of a new order. A myth emerges when a practice is found dislocated, which means when new prerequisites deconstruct the established order (Laclau, 1990). A new reconfiguration then strives to establish a new order. These analytical concepts are put into play in the last study of the thesis which analyses teachers' subject positions and educational myths of social change. This is in relation to how our contemporary way of living is declared as unsustainable in a complex and changing world. Nevertheless, education is also declared an important tool for social change and, in this position, searches for new configuration in its relation to sustainability (c.f. Scott & Gough, 2003).

Elaborating on discourse theory in this approach of analysing the constant struggle between definitions is useful in making the re-articulation of desirable aims and purpose of ESD discourses visible and possible to problematise. Hence, my choice of discourse theory provides the ability to analyse how utterances and articulations become privileged and provide an interpretative prerogative and, also, how the different articulations are legitimised, reinforced or counteract in the meaning-making process.

To relate the situated practice of teachers' meaning-making to the discussion of purposes of ESD, the three functions of education by Biesta (2009a) – qualification, socialisation and subjectification – is used as an analytical lens to problematise these results.

In encounters with Biesta

The purpose of education

When we engage in questions about the purpose of education, we also address questions of what is educationally *desirable*. Education and purpose is not simply a question of factual information and evaluation, but involves values and identity (Todd & Säfström, 2008), and this is relevant when it comes to sustainable development (Ideland & Malmberg, 2015; Lundegård & Wickman, 2012; Öhman, 2006a; Östman, 2010).

Biesta (2009a) has raised the question of purpose in education by emphasising three functions of education, referred to as the functions of qualification, socialisation and subjectification. These functions, which focus on the contribution education provides to society and the individuals, could be helpful in discussing educational purposes in a *qualitative* way. It enables us to reflect on *processes* and to view purpose as a composite question.

The three functions are seen to mutually affecting each other in education, but when we discuss our purpose of education (i.e. what makes up a desirable education it is important to distinguish the three functions. To reflect on education as functions of qualification, socialisation, and subjectification, processes is a way to reveal how teaching processes could work qualitatively differently. What seems to be a desirable teaching process could, in this way, be related to what outcomes this generates and what is desirable; for

example, how the most *effective way* to come to a pre-specified end might not always be the most desirable teaching approach if we think of all the three functions of education as desirable.

[to] provide opportunities for students to explore their own way of thinking, doing and being, can be more desirable, than those that effectively proceeds towards a pre-specified end (Biesta, 2009a, p. 36)

To problematise teachers' articulations about purpose, I found Biesta's three functions of education a fruitful analytical lens. This framework makes it possible to problematise educational purpose as a composite question and thus able to analyse intersections of struggling purposes. This includes tensions of teachers' obligations and engagements and views of what is a desirable ESD. Each of the functions of education will be presented in the next section.

Qualification, socialisation and subjectification as functions of education

According to Biesta (2009a), the *function of qualification* refers to how knowledge, skills and understanding allow students to "do something". It also refers to education's contribution to development and growth, as well as for political and cultural literacy. Through its *socialising function*, (Biesta, 2011b) education situates individuals into existing ways of doing and being. Socialisation serves to introduce newcomers into particular social practices and to become part of existing social orders. In other words, socialisation works to transmit particular norms and values. Socialisation has been formulated as a focus (among others) for analyses of teachers' socialisation content in relation to education in science and ESD, to make visible how content and values are inseparable (c.f. Almers, 2009; Ekborg, 2005; Lundegård, 2007; P. Sund, 2008; Wickman, 2006; Öhman, 2006a; Östman, 1995, 1999).

If qualification and socialisation could be seen as mainly engaged with outcomes of *pre-specified ends* of education, *subjectification* is a relational concept in another way (Biesta, 2009a, b, 2011a, b). It focuses on an awareness of an individual's uniqueness in relation

to “the Other” (Säfström, 2005; Todd & Säfström, 2008), approaching the more open-ended outcome. Subjectification in this interpretation focuses on an awareness of an individual’s uniqueness in relation to *the Other*, in the sense of constituting what one is not (Säfström, 2005). Bakhtin also elaborates on this process through the alteritous uncertainty (Bakhtin, 1986, p. 161). In relation to this, the function of subjectification can be understood as a counterbalance to socialisation (Biesta, 2011a). It could be seen as a process that allows students the possibilities to develop a more independent approach to education, wherein they have the opportunity to be addressed as a subject of responsibility for others in their own uniqueness as human beings and to be addressed as a political subject. This is something other than being a representative of a predefined order, with, for example, inherent human values. Subjectification focuses on the personal, responsible actions within a situation – a situation to *learn from* (without a predefined right answer) rather than to *learn for*. In this way, subjectification could also be interpreted as partly different from *identity*, which refers more to the question of identification *by someone* and/or identification *with something*, as in a third person perspective (Biesta in interview by Winter, 2011).

The functions of qualification and socialisation are probably the functions that we mainly associate with education when we discuss learning and the purpose of education, although there may be many approaches to discussing its qualitative aspects. These functions are more or less related to predefined and explicit aims of education. Subjectification, on the other hand, is not about learning predefined content or competence. It is a process in which teaching situations could leave room for it to “happen”, but we can never presuppose it will (Winter, 2011). It is a way to work with pluralism and antagonism in encounters to highlight *the political* as an inherent part of human relations (Lundegård & Wickman, 2012; Mouffe, 2000a; Todd, 2009). If we only focus on the democratic *order* and dismiss the establishment’s politics and maintenance of that order, we miss an important aspect of democratic politics (Mouffe, 2000b). In other words, if a “democratic”

education is limited to an instrumental view of the democratic order, we miss the students' development as political subjects.

The use of educational function as analytical tools in this thesis
Biesta (2009a) refers to *functions* of education which is not quite the same as, for example, *processes* or desirable *aims* which are elaborated in my analyses. To relate them more clearly in this context, I regard that the aims of teaching processes (how and what we educate) are related to a specific purpose of education (why we educate) that could be analysed as directed towards *different* functions of this education (the "outcome"). This enables an *overall reflection of purpose* of education. In this way, purpose is seen as an interplay of different functions. The context in which purpose is used in my analyses is in relation to the teachers' articulations in the situated practice they are part of and not as an intention.

Room for subjectification

To make subjectification to work as an analytic tool, I have constructed the analytical lens of *room for subjectification*. I define room for subjectification as a matter of promoting encounters or attending an awareness of education in a way that gives space to challenge existing orders, make conflicts visible to face and to leave possibilities for the students to explore their own relation to existing discourses. Subjectification is about the doing in an action – to act in the moment – the *saying* more than analysing the *said*. It is a way of exploring how to become a subject, a *political subject* (Lundegård & Wickman, 2012). The process of subjectification is thus something that teaching situations could create room for although it can never be expected as an outcome; therefore, I will phrase this analytical lens *room for subjectification*. In my analyses, this means to be aware of articulations of teaching situations or approaches which stresses the students' possibility to encounter room for subjectification.

The ambition of my analyses is not to clarify the 'real' meaning of Biesta's functions of education (2009a), but, rather, it is the process and struggle between different articulations focusing the conflicting intersections of particular areas of educational tension.

The teachers' articulations are analysed to problematise how aims may be articulated or rearticulated in relation to ESD. In this way, teachers' articulations can help us to better understand the struggling process of educational purposes in relation to sustainability. In article II-IV, these functions are used as relational analytical lenses to problematise purpose, in relation to the students' possibilities to develop as political subjects, qualification in relation to ESD and social change towards more "sustainable" living.

The particular and commonality

As discussed earlier, subjectification is a concept focusing on the individual response in mutual encounters. However, how *subjectification* might work in relation to Laclau and Mouffe's (2001) theoretical foundation of discourse theory may provoke some thoughts and questions. The question of subject and agency needs to be illuminated further.

Laclau and Mouffe's discourse theory is more or less elaborated from the Gramscian theory of hegemony (Palinurus, 2007). However, to emphasise the individual as the starting point for social analysis in the context of discourse theory could be seen as a way to affirm pluralism and ambiguity. There is not one basis for understanding the individual's position and societal relations; instead, the society and the individual are characterised by openness and ambiguity (Laclau & Mouffe, 2001).

The departure in this thesis much reflects the way Mouffe elaborates on citizenship. In an interview in Palinurus (2007), Mouffe reflect on a form of commonality which does not erase difference and which leaves room for differences and particularities – "a radical democratic conception" of citizenship. The idea of citizenship implies commonality; however, Mouffe stresses that although we are in it together, we are different, and there must be a way in which our particularities are taken into account in the common bond; thus, Mouffe approaches a pluralistic democracy. For example, liberty and equality can be interpreted in different ways and, according to Mouffe, a democratic society needs to have a debate and confrontation about those interpretations.

This elaboration of the concept of citizenship is an approach that speaks for the way discourses are in constant struggle due to social practices which articulate meaning differently. Further, it also reflects the importance of making objective discourses visible and able to be contested with the scope to extend the political arena to more areas of social life.

Mouffe (2000a) would bring in *the political*, defined as “the dimension of antagonism that is inherent in human relations” (p. 15). As mentioned earlier, the individual as a political subject is not to be understood as related to particular groups such as, for example, class, sex or ethnicity; instead, Mouffe (1992) emphasises political subjectivity as fundamentally open and changing and is expressed in specific linguistic situations. There is not *one single* basis to understanding the individual’s position and their societal relations.

The individual has agency in this context by identifying and positioning herself to particular subject positions of different discourses in specific combinations. This is where the political subjectification is emerging/represented (Laclau & Mouffe, 2001). The prerequisite for this positioning is that there are different subject positions available, i.e. that discourses are in an antagonistic struggle. This expresses the overdetermination of the subject (i.e. a concept originally developed by Althusser, wherein the subject is in a situation where different identifying subject positions are mutually and simultaneously offered). If there are no competing positions, we have a hegemonic discourse, which is treated as an objective and “true” view of the world. To brake a hegemonic discourse, the “disruption” is key. Disruption, implies that new interpretations and views of the world are developed and emerge as antagonistic struggles with established hegemonic discourses. In this struggle, new positions are developed (Laclau & Mouffe, 2001). According to Laclau (1990), the agency of the subject becomes possible due to the constant reformulation of ongoing discourses and the overdetermination of subject positions in the field of discourse, opening spaces for the agency of the subject.

Rancière takes this one step further in his elaboration of radical democracy (Biesta, 2011b). In a situation of hegemonic discourses,

he emphasises that the radical moment of democracy is when new subjects brake a hegemonic discourse by articulating a position that has been ignored in the hegemonic discourse; for example, the subject of “women” in the political discourse before women had the right to vote. This claim could lead to the deconstruction of the hegemonic discourse into new discourses due to an articulation of equality. This is an example of a *new subject* coming into the world.

I interpret the function of subjectification in the educational context as a relational concept. In encounters, political subjects emerge in relation to *otherness* and, in this, become an agent. Plurality and differences are the driving forces, and as Mouffe stresses in much of her writing, accompanied with *a political passion* (Biesta, 2010, 2011b; Lundegård & Wickman, 2012; Mouffe, 2000a).

In my reading, I interpret Biesta’s elaboration of the *functions* of subjectification as developed through those theoretical elaborations to formulate the *process* of subjectification, which emphasises encounters with differences and, in this, the agency in the becoming of the *political subject*. In the next section, the political subject will be explained in relation to its use in my thesis.

Political subject

School aims to qualify students by knowledge, but as Biesta (2011a) reasons, to educate for democratic activity also amounts to an awareness of the possibility for students to develop as *political subjects* (Lundegård & Wickman, 2012; Todd, 2009). This does not imply that students “only” learn particular skills and competences for the future, but are provided opportunities to *practice* democracy, to engage “with the *experiment* of democracy, political agency and democratic subjectivity” (Biesta, 2011a, p. 33).

Mouffe (2000a) would bring in *the political*, defined as “the dimension of antagonism that is inherent in human relations” (p. 15). As mentioned earlier, individuals as political subjects is not to be understood as related to particular groups, for example, class, sex or ethnicity; instead, Mouffe (1992) emphasises political subjectivity as fundamentally open and changing and is expressed in specific linguistic situations.

Hence, as discussed above, the political subjectivity could be understood as bringing new political subjects into the world in the challenge of hegemonic discourses or by individual combinations of subject positions. A political understanding in relation to citizenship (or ESD) could be described as an understanding where plurality and differences are seen as the prerequisite of democratic processes and practices (Biesta, 2011b; Lundegård & Wickman, 2012; Mouffe, 2000a; Todd & Säfström, 2008).

Therefore, in line with this political understanding, “public places” (Biesta, 2011b) as political encounters between dissidents, might be encounters that invite the development of political subjects; “public spaces” in the sense of a “public domain” which refers not to a particular physical place, but, rather, a dimension of social life. This, as being understood in the sense of where encounters of collective needs face antagonism. Where antagonistic “enemies” could work to be transformed towards an approach of agonistic pluralism between *adversaries* (Mouffe, 2000a); an *adversary* as a “legitimated enemy” whose ideas we combat, but whose right to defend those ideas we do not put into question. Whether or not schools makes up such “public spaces”, is an interesting question. Some prerequisites, such as offering students the chance to participate in reflective conversations and processes, might be seen as a desired goal in relation to teaching. How those conversations and encounters are outlined and how the interlocutors’ utterances are seen as legitimised or not, is then crucial. However, do teachers articulate students as political subjects in relation to sustainability issues in teaching? And if so, for what purpose?

EMPIRICAL CONTEXT

In this section, I will describe how I proceeded to collect the empirical material of my thesis. The selection of schools and teachers are presented, as well as a brief presentation of the projects that the schools have been involved in during the empirical data collection. Further, the transcription of the material will be described as well as ethical and methodological considerations.

Data Collection

The empirical material of my thesis consists of audio recorded discussions among teacher colleagues discussing sustainable development and ESD. The material was recorded mainly in arrangements of focus groups (Article II-IV) and, also, in relation to the first study (Article I), during a literature seminar.

Empirical data in relation to study I

The general aim of the first study is to investigate and describe the complexity of the universal concept of sustainable development from a conflict perspective. How sustainability perspectives develop in a discussion among teachers in an educational context are analysed. The empirical material consists of teachers' discussions audio-recorded in connection with an in-service course. This course was part of a research and development project run by RCE Skåne (Regional Centre of Expertise on education for sustainable development of Scania) carried out in January 2008 – June 2010 with funds from Bank Foundation Skåne (Sparbanksstiftelsen Skåne). As a part of this project, in-service courses were developed by Malmö

University in cooperation with the city of Malmö, with an educational aim to enhance learning for sustainable development.

The courses were part-time, which the teachers conducted in parallel with their teaching in school. This enabled the teachers to reflect on their practice as an integrated part of the course process. To prepare for a literature seminar of the course, the participants all read the same book about climate change and the complex question of responsibility in relation to greenhouse gas emissions (Azar, 2008). Each participant prepared a question to discuss arising from personal interest concerning the literature and was to lead the debate of his or her own question, ensuring that everyone took part in the discussion. This arrangement made it possible to study the teachers' 'natural talk' about questions of sustainable development.

The empirical material of the first study was collected during one of these literature seminars, which took place at the later part of the first semester (out of two) of the course. Involvement in the research study and the teachers' agreement to participate were confirmed in advance. The teachers of this course were put into two seminar groups which made it possible to offer a seminar for those who did not wish to be included in the study.

The seminar group that was recorded for the study consisted of seven (four women and three men), secondary and upper secondary teachers, teaching in the subjects home economics, languages, social and natural science subjects. Accordingly, the seminar dealt with seven questions to discuss and lasted for two hours, including a twenty-minute break. The seven seminar questions followed one another in natural transition throughout the discussion as a whole, and each question was discussed for ten to fifteen minutes. My role at the seminar was that of an observer responsible for time-keeping and administration.

Empirical data in relation to study II–IV

The general purpose of these studies is to empirically investigate how the desirable aims of ESD are articulated by teachers and areas in educational tension are problematised to discuss purpose. In these studies, an approach of discourse theory has been developed

to analyse the discourses of the teachers' articulations (Jørgensen & Phillips, 2002; Laclau & Mouffe, 2001; Unemar Öst, 2009). Audio-recorded discussions from five groups of teacher colleagues discussing what they regard as desirable and important aims of ESD, constitute the empirical material. These discussions began with a question posed by me as researcher; about what they regarded as desirable and important aims in their work in relation to education for sustainable development, and if they might have missed some processes of importance during their latest project. I emphasised that I was not heading for some "best practice" but, rather, to take part in what they, as practicing teachers, regarded as important aims in relation to ESD, and what they, together as colleagues, considered important and desirable aims. During the rest of the discussion, my comments and questions were posed just to clarify statements or to bring the discussion back to its original theme. Each discussion lasted for about one hour and were conducted during the autumn semester of 2012.

The schools involved in these studies were secondary and upper secondary schools all located in southern Sweden. The seven schools were selected on the basis that they were certified as ESD/eco-schools or involved in projects of sustainability. The participants from these schools were teachers involved/or had been involved in projects of ESD, and all of the selected teachers expressed interest in this type of collegial discussion. Each focus group was set up with three to six teachers, resulting in twenty teachers from various schools in total. The participants were science and social science teachers.

The different group constellations

The discussions were set up and conducted with respect to the teachers' possibilities to jointly participate in relation to the school schedule:

- Group A: Five teachers from different secondary schools, working in a joint project (running for three years), with the aim of develop methods of education for sustainable development together with their students. The discussion took place

during their last term of the project during a joint project meeting. This meeting took place at a conference establishment. The participants of the focus group were informed in advance and all had agreed on participating in the joint conversation which lasted for about an hour. The seven participants were a mix of natural sciences teachers and social science teachers.

- Group B: Three teacher colleagues working at the same secondary school from the same project as group A. The discussion was conducted at the teachers' school. This group also consisted of teachers that taught in natural science as well as social studies.
- Group C: Six teacher colleagues from a secondary school that earlier had been part of ESD programs. The discussion was conducted at the teachers' school. All of the teachers were natural science teachers.
- Groups D and E: Two groups each consisting of three teacher colleagues from an eco-certified upper secondary school. The discussions were conducted at the teachers' school. One of the groups consisted of teachers of social studies and the other group was a mix of natural sciences teachers and social science.

Transcription process

The recorded audio files from the seminar and the focus groups have been transcribed. The conversation was written down as accurately as possible (verbatim transcription), including writing down the conversation as spoken language without grammatical corrections. This means that the discussions have been transcribed as a whole, but without a detailed transcription system, where, for example, breaks and nuances of the language are marked in detail with time and symbols. In relation to the aim of the thesis, this has not been considered relevant for the analyses. The aim of the studies is to analyse content and speech function (Article I) and how utterances as elements in articulations formulate discursive meaning through discourse analytical tools (Article II-IV).

To make the analytical processes available for the reader, representational utterances and elements are presented in the articles. The excerpts in the articles have been translated from Swedish into English. During this process, the goal was to translate the spoken language as reliably as possible. For this translation, I have enlisted professional help where questions regarding the translation have been discussed.

Ethical considerations

When conducting the studies of this dissertation and in the processes of collecting and storing the empirical material, the Swedish Research Council's ethical guidelines (2011) have been carefully considered and followed. All teachers included in the studies have been informed in advance about the study and the prerequisites for such research. The information also included a brief presentation of me as a PhD student, and I explained my interest to take part of their discussion as teacher colleagues, as a way for me to listen to their reasoning with each other as a group. Concerning the focus groups (Article II–IV), I also explained that their discussions were a part of other empirical data (five discussions) of my ongoing research of ESD. I emphasised that my aim was to primarily be a listener, so that my silence would not be read as disinterest, but rather, to give them time to discuss with each other. In the case of the course seminar, there were two groups for them to choose between, with one serving as an alternative for those who possibly felt uncomfortable with the audio-recording.

The problem with a qualitative study is achieving the right balance between detailed information about the study conditions and the transparency of the study. When those alternatives have been in conflict, I have given priority to the teachers' right of anonymity. Hence, the participants' names are fictitious in the transcripts and schools and projects have not been named. All research material has been stored in line with the ethical guidelines of the Swedish Research Council (2011). In the next section, I consider issues regarding credibility (trustworthiness) and transferability.

Methodological considerations

In this section, I give additional consideration to questions of trustworthiness and transferability in relation to qualitative studies. Qualitative studies are mostly interested in research issues that can give a more thorough and complex understanding of, for example, processes, meaning-making or particular phenomenon. Thus, the empirical material of qualitative studies serves a different function than to give brief information of generalisations of trends or coordination between different variables. Those generalisations are better answered by statistical samples. However qualitative studies often give detailed analyses of particular data material which contributes with knowledge to be understood as transferable to other familiar situations for the reader. The knowledge may thus allow a further or new understanding of similar situations.

Transferability is achieved when readers feel as though the story of the research overlaps with their own situation and they intuitively transfer the research to their own action (Tracy, 2010, p. 845).

For instance, a teacher or researcher who reads research studies concerning students in a particular teaching situations, may apply or transfer these situations to their own work situation, to understand this in a new way. Qualitative research, in this way, may identify and problematise situations to be recognised and considered in relation to everyday lives (Larsson, 2009). Here, even though the details are not exactly the same, through its familiarity the results could be transferable to the readers' prior experiences and future situations. In this way, my studies transferability relates to a pragmatic tradition of understanding, which means how it makes use in practice (Lundegård, 2007; P. Sund, 2008; Öhman 2006a). This implies that transferability is possible through the readers' perspective through a frame of *familiarity* (Öhman, 2006a).

Questions of transferability also refers to how the results of a theoretical understanding are relevant to different situations (Kvale, 1997). The theoretical foundation in my thesis is grounded

in an understanding of language use in line with Bakhtin (1981, 1986) and a discourse theoretical framework of how discourses construct meaning through articulatory practices (Jørgensen & Phillips, 2002; Laclau & Mouffe, 2001). This implies that my results should be considered in regard to these theoretical frameworks, where teachers' perspectives are articulated to construct meaning due to their social practice. Discourse theory does not reproduce any objective reality, but instead, understands reality through discourse (Torring, 1999).

Trustworthiness (or credibility) refers to how the researcher conducts the data collection and analysis. In qualitative research, this implies transparency when describing data collection and its use in the analytical process. The data collection, methods and analytical process have to be thoroughly described and be plausible and persuasive (Kvale, 1997; Tracy, 2010).

In the studies of this thesis, I have, as earlier described, been using language and teachers' meaning-making discussions as empirical foundation. This empirical data is used to elaborate ESD from a conflict perspective (Article I) and also to analyse teachers' desirable aims of ESD to problematise educational purpose (Article II–IV). In my first study (Article I), the data collection took place during a literature seminar where my role was explicit as a listener and timekeeper, and along these lines, I did not pose any questions or comments during the teachers' discussions. This empirical data was used as a case study, analysing how the teachers used each other's utterances to construct meaning, as links in a chain of speech communication (Bakhtin, 1986).

In Article II–IV, the teachers' articulations of the desirable aims of ESD is analysed through discourse analytical tools. To make it possible to approach meaning-making processes, the empirical data consists of teachers in discussions with colleagues, discussing together in a group. This, in turn, enables the analysis of what they mutually consider to be their desired aims in relation to ESD. My role as a researcher during these discussions might be seen as a part of the result, by way of initiating the discussion and also by keeping the discussion "on track". This type of data collection is always a balancing act in between the desire to analyse the teachers' mu-

tual conversation relating to a specific issue and the researcher as an undesirable part of these formulations. Hence, my questions after initiating the discussion were kept to a minimum, as comments and questions posed simply to clarify statements or to bring the discussion back to its original theme (c.f. Kvale, 1997). However, the choice of group discussions made it possible to analyse the teachers' reciprocal meaning-making, in a way that I consider more fruitful than in the case of, for example, individual interviews. Instead of posing questions for each individual to answer, the participants spoke to each other and discussed different experiences and views. The basic idea is that the group will elaborate and reason in a way that would be harder to access in an interview situation (Morgan, 1997). Article II–IV are based on the same empirical material. In this way, it has been possible to approach the empirical data from three different perspectives to problematise the interrelations of different dimensions of purposes in education.

In the section of this thesis entitled “Theoretical Influences”, the analyses of the studies are described as carefully as possible in order to give the reader a transparent understanding of the analytical process. The report of the results and analyses in the articles included in the thesis is intended to provide a detailed description and representation of how the analyses are made in relation to the empirical material.

Selection in relation to the empirical analyses

When analysing qualitative empirical data, there are always considerations of selection involved in the analytical processes. These selective processes have to be considered through the guidance of the analytical framework. The analytical framework has to be chosen in a way that gives good possibilities for answering the stated research questions; hence, the selective processes already begins when collecting the empirical data. For example, with Article II–IV, using teachers' discussions was a choice I made to be able to elaborate on teachers' meaning-making of the desirable aims of ESD. Discourse theoretical tools were then operationalised to elaborate on any conflicting aims and struggling discourses of meanings in the articulatory practice of teachers' reciprocal discus-

sions (Article II–IV). In my elaboration, I also use theoretical frameworks considering the importance of conflicts and differences in relation to democracy (Laclau & Mouffe, 2001; Mouffe, 2000 a, b; Todd, 2009). Theoretical concepts have been used to problematise the articulations in the empirical material, such as by Mouffe’s elaboration on conflictual consensus (Mouffe, 2000a) and Biesta’s functions of education (Biesta, 2009a).

The empirical data of the five different discussions have been re-currently studied in close readings. The readings have served to, firstly, get an overview of the material as a whole to be more selectively approached through the selective lenses of particular theoretical concepts. The analytical work was thus conducted in an iterative process. This means to go back and forth between the empirical material and the theoretical concepts in an abductive approach of analytical process. The last selection makes fair representations of the empirical data to be presented as transcripts in order to present the analyses for the reader. For a closer presentation, I refer to the chapter of “Theoretical Influences”, and the included articles.

THE RELATIONS BETWEEN THE STUDIES

My contribution to the articles

All the articles in this thesis are written with co-authors (i.e. supervisors). In relation to the dissertation, it is therefore of interest to clarify my contribution. The process has been different for the different articles, but, as first author I have been responsible for most of the work and research ideas. This implies research design, empirical work, transcription, analyses and writing. However, during this work I have correspondingly discussed and evaluated the work together with my supervisors.

- Article I is written by the first author and the co-authors (Margaret Ekborg, Claes Malmberg) who have during this work contributed with comments and viewpoints to develop the research design and the text of the article.
- Article II has been developed in collaboration with one of my supervisors (co-author Claes Malmberg). During this study, we have jointly discussed and evaluated – by the first author proposed – analysis and article ideas. The co-author has also contributed to parts of the text and made comments to develop the text.
- Article III (co-authors Iann Lundegård, Claes Malmberg) is based on the analytical methods that were developed in article II. In this third article, the authors have jointly discussed and evaluated the first author's draft of the analyses and manuscript, which has then been further developed in cooperation. In relation to this work, Iann Lundegård is the second author.

- Article IV was carried out in similar way to article three.

All the studies have been presented at a number of national and international scientific conferences, seminars and network meetings by the first author, where comments and viewpoints have contributed to the development of the articles. Likewise, the review processes prior to publication have been valuable in developing the final versions.

Peer-reviewed presentations at conferences: IOSTE Bled 2010 and La Medina 2012. Eridob Braga 2010. NordSed Reykjavik 2012. EERA-ECER Istanbul 2013 and Porto 2014, GRESO: Umeå 2012.

Presentations at Graduate school conferences with Scientific board: FontD Norrköping 2009, 2010, 2011. GRESO Uppsala 2010, 2011

Presentations at seminars and network meetings: SISEME Malmö continuously. ENSI Bern 2008 and Leuven 2009. CPSSE Aalborg 2013 and Stockholm 2014.

The relations between the four studies

This thesis elaborates Education for Sustainable Development (ESD) from a conflict perspective and problematises certain educational areas of sustainability in relation to purpose of education. ESD has been the target of extensive interpretation and discussion, as has the concept of sustainable development itself. Sustainable development, as a concept, is by necessity complex, dealing with integrated dimensions of environmental, social-cultural and economic sustainability. It involves a diverse range of embedded values and ideologies, and calls for engagement in value-related and political issues related to the environment, equality and lifestyle.

The first study of the thesis, “*Discussing sustainable development among teachers: An analysis from a conflict perspective*”, problematises the complexity of the concept of sustainable development. In the first step, main, generalised explanatory models of sustainable development are analysed through a conflict perspective. The conflicting interests of sustainability within and between the different models were identified as a *conflictual consensus*

(Mouffe, 2000a). By combining the conflicting dynamics of sustainable development with dialogic and univocal functions of speech (Wertsch, 1998), a *Conflict Reflection Tool* (CRT) was developed. This CRT was applied to analyse teachers' discussions during a literature seminar at an in-service course of ESD concerning climate change. When a dialogic speech genre was identified conflicting views emerged and were re-valued due to the interplay between dimensions of sustainability and societal levels of conflict. In contrast, when fact-based science related utterances were used, a univocal speech function was identified, and the discussion was thus closed for conflicting perspectives to emerge.

The results of the first study sparked my further interest in how meaning is dynamically constructed in social contexts. The CRT also visualised the complexity of sustainability and deepened my awareness of differences as an educational focus. This knowledge generated my interest in more thoroughly examining the *tensions of purpose* in ESD. The concepts of agonistic pluralism and conflictual consensus (Mouffe, 2000a) led my interest even further, to investigate how discourse theory might work as analytical tool (Laclau & Mouffe, 2001). From problematising the complexity and conflicting perspectives of sustainable development, the other studies focus on educational tensions in teachers' articulations of the desirable aims and purposes in ESD.

Analytical tools from discourse theory (Laclau & Mouffe, 2001) made it possible to analyse the dynamic processes of how discourses construct meaning in ongoing articulations. Teachers' articulations of the desirable aims of ESD were thus analysed. Since ESD is developed through international policy, there is a need for more knowledge about its function in social practice (Jickling, 2003; Jickling and Wals, 2008; Læssøe, 2010).

The main focus of the second study, "Critical thinking as room for subjectification in Education for Sustainable development", was to analyse how teachers might articulate teaching situations as opportunities for students to develop as political subjects among articulated aims. The results show how this was articulated through the emerging discourse of *critical thinking as room for subjectification*. However, this discourse was articulated in struggle with the aims of

qualification and socialisation, i.e. challenged by elements articulating a more scientific and rational worldview. These results opened up for new questions concerning qualification in relation to ESD.

In an “age of measurement” (Biesta, 2009a; Wals & Jickling, 2002) where qualification is a hot topic on the political agenda, it is of interest to ask what *qualification* might implicate in relation to ESD. The results of the third study, “*Students’ Qualification in Education for Sustainable Development – Epistemic gaps or composites of critical thinking?*”, shows three discourses of qualification. Of these three, *scientific reasoning* and *awareness of complexity* are articulated as contrasting epistemological discourses of qualification. However, in the third discourse, *qualification as critical thinking*, these different epistemological views are articulated as intertwined as different perspectives to view sustainability.

In the last study, “*Teachers as agents for social change? Subject positions from a transformative perspective of sustainability*”, the focus is on teachers’ subject positions and emerging “myths of social change”.

The results show the teachers as overdetermined due to contemporaneous subject positions of overlapping discourses due to educational aims in struggle. Thus, in a given teaching situation, teachers could identify themselves with different available positions: *the rational subject* as a neutral conductor, the *responsible subject* as a role model or *the reconstructing subject* as a reconstructor. This position depends on how socialisation towards sustainable lifestyles, and political and ethical perspectives are identified in relation to educational aims (Biesta, 2009b, 2011b). Thus the myth of “social change” in ESD has implications on how to acknowledge “social change” as mainly being a process to empower students for the “right” choices or to uphold “social change” as a way for students to explore new interpretations of a more sustainable living, i.e. to develop as political subjects (cf. Lundegård & Wickman, 2012).

The results and conclusions of these studies will be further discussed in the next section of “Summary and discussion of the result”. How this research can make a contribution to educational practice and the research field will also be presented.

SUMMARY AND DISCUSSION OF RESULTS

Education as a dislocated practice

Because educational purposes have mainly considered qualification and literacy from a more “traditional” point of view, (i.e. to qualify students for the labour market, challenge them to develop as individuals and socialise them as citizens), we now face an emerging issue challenging these purposes of education – the world’s sustainability. As declared by UNESCO (2013), this is about a “worldwide” commitment to social change and how to change direction to “save the world” from an unsustainable development of societies. The goals can be characterised as urgent and uncertain, intertwined with ethical and political issues. ESD is expected to blend in with what can be considered “ordinary” school subjects and to exist alongside these established, predefined learning goals which are assessed for every subject, thus any struggling aims are left for the teachers to sort out in everyday school practice. Thus, when contemporary living is declared as unsustainable in a complex and changing world, new prerequisites emerge for education. International negotiations of climate change and policy formulations are the subjects of conflicting discussions, however, education is consistently identified as an important tool for change.

From a discourse theoretical view, this could be described as the educational system becoming dislocated or destabilised (Laclau, 1990; Laclau & Mouffe, 2001). This condition appears when the normal order is altered and no longer corresponds with the prevailing conditions. In this state, new articulations develop to stabilise

this new order. As a result, such times of destabilisation open up and make way for new reconfigurations.

Therefore, ESD as an overarching aim of education creates and accentuates educational tensions. These tensions have been discussed in earlier sections of this thesis through previous research, the background of policy documents, and traditions of environmental education. From these educational tensions, I have focused on three main areas which appears particular complex. These areas are closely related to democratic processes of education, embracing: a) students' *qualification* in relation to ESD, b) education for *social change* in relation to a "sustainable" living and c) the possibilities for students to develop as *political subjects* in this educational context. These areas are problematised in three of my empirical studies through analysis of teachers' (re)articulations of desirable aims in relation to their educational practice and ESD.

This problematisation has been achieved through operationalising analytical tools from discourse theory (Laclau & Mouffe, 2001), enabling me to analyse the struggling processes of how teachers make meaning by the (re)articulations of their educational aims. Each of these areas in educational tension have been further analysed to discuss purpose through the lens of Biesta's (2009a) framework of educational functions (i.e. qualification, socialisation and subjectification as *relational* aims of educational purpose). However, before I discuss the results and conclusions from these three analyses (of article II-IV), I will first go closer into the concept of sustainable development as a universal concept in an educational context through the research of my first study (Article I).

Discussing sustainable development among teachers: An analysis from a conflict perspective (Article I)

One aim of my research, which is highlighted in this article, is to elaborate on the universal concept of sustainable development from a conflict perspective. The vision of a harmonious relationship between social, cultural, economic and environmental dimensions for sustainable development –often put forward in policy documents – is a challenge due to conflicts of interest that arise when facing the realities of our way of living (Breiting & Mogen-

sen, 1999; Sauvé, 2002; Stables & Scott, 2002). Moreover, a consensus end as the main goal in discussions of sustainability risks to overshadowing the diversity of other visions, perspectives and possibilities, and to serve as a criteria of what constitutes the “truth” (Jickling & Wals, 2008; Sauvé, 2002; Öhman & Öhman, 2012). The challenge of these harmonious, theoretical consensus visions facing the conflicting interests in practice has served as the starting point for exploring conflicting perspectives of the concept of sustainable development. This exploration was achieved through the development of content and process analyses of a discussion of sustainability among teachers which took place at an in-service course of ESD. The analyses thus focus both on content and language use (Hasslöf, Ekborg & Malmberg, 2014).

Hence, the complexity of conflicting intersections between certain, main general explanatory models of sustainable development were analysed (Barbier, 1987; Breiting et al., 2009; Herremans & Reid, 2002; Sadler, 1990), resulting in the development of an analytical tool – the Conflict Reflection Tool (CRT). The CRT makes it possible to problematise conflicting dynamics of the concept of sustainable development. These dynamic conflicts are thus revealed to show how sustainability interests are both context dependent regarding content (economic, social-cultural, and environmental dimensions) and addressing different societal levels of human conflicts. This conflict perspective is analysed through a teacher discussion of sustainability. Accordingly, the CRT also shows the dynamic effects of language use in meaning-making through the functions of speech (Lotman, 1988; Wertsch, 1998). Thus, the CRT makes it possible to problematise dynamic intersections of conflicts in discussions of sustainability issues regarding both content and language perspectives.

Different theoretical frameworks

The CRT helps study relations between different models of sustainable development, and thereby, the complexity and conflicting intersections of sustainable development. The different models are all founded upon interests of sustainable development, but from different points of view. They centre upon economic sustainable

development (Barbier, 1987), ecologic sustainable development (Sadler, 1990) and levels of societal conflicts of interests (Breiting et al., 2009). To relationally visualise these models might be worth considering: are they possible to compare? What is possible to mutually consider and what might be in conflict? Why compare? However, these models are as well visualisations of conflicting perspectives of sustainability which we recurrently face in everyday life and in educational contexts in relation to sustainability (Jickling & Wals, 2013). The CRT helps analyse a *conflictual consensus* of sustainable development (c.f. Mouffe, 2000a). A conflictual consensus briefly means to acknowledge the conflicting parts of a mutual goal; therefore, by visualising the different models' relations, it becomes possible to problematise the complexity of sustainable development and analyse how a discussion develops through conflicting dimensions. As a result, it problematises the complexity of what is seen as "sustainable". In my study (Article I), the topic of the import of fruit can be found as it is viewed through the lens of sustainable development and CRT, and it can be regarded as an example of how values and interests are recognised in relation to different perspectives through the discussion. The CRT visualises the interrelation of the conflicting intersections. This is shown in the case when the teachers are discussing the pros and cons concerning the consumption of locally grown fruit. The discussion undulates between economic, social and environmental perspectives and we can see that consumption is valued differently depending on perspective. Additionally, differences in valuing whether to import fruits or not also undulates depending on which societal level the conflicts are viewed from. A factual science discourse posed in a univocal speech genre risks foreclosing the discussion of alternative arguments. However, discussions of sustainability which stress conflictual intersections could be a way to view the outcome of sustainability discussions as open-ended, to be further valued to recognise different conflicting interests as relational and context dependent, challenging a universal consensus view.

The question of relativism and normativity

This conflict perspective on sustainability actualises the question formulated by Wals (2010, p. 144): “...when all these perspectives are considered, do all outcomes contribute to sustainability equally when all have been considered, or are some better than others?” These questions might be posed in relation to open-ended outcomes with diverse perspectives; however, the question of relativism is built on the view of an objective reference of universal values. The aim to view a discussion of sustainability through the CRT is to recognise the *conflicting intersections*, to give them attention as being in conflict and, by this, possibilities for being normatively discussed in relation to a particular context. To discuss conflicts of these overlapping intersections between different dimensions, thus means to recognise the political (c.f. Mouffe, 2000a). To emphasise sustainability as a normative concept reveals a particular value or opinion not “as good as another”, but of particular value in the context it is part of (c.f. Rorty, 1980). Hence, universal concepts such as sustainable development in this study are articulated into particular values by normative practice, that is, to be discussed in a context that makes particular meaning (c.f. L. Sund, 2014; L. Sund, & Öhman 2014; Van Poeck, Goeminne & Vandenabeele, 2014). To stress sustainability as a normative concept, thus highlights the recognition of the democratic process in education and focuses the political. Additionally, the focus on the dialogic versus univocal speech genre in this study, shows a way to recognise how to make visible hegemonic (authoritative) discourses. Visible, and thereby more possible to challenge.

From Sustainable Development to Education for Sustainable Development

The knowledge gained from this first study, concerning conflicting perspectives in the teachers’ discussions of sustainability, generated additional interest to focus sustainable development as *educational* focus. How do teachers approach this ambiguous concept of sustainable development as educational aim in relation to the overall purpose of education? In what way does a perspective such as sustainable development (re)articulate the meaning of educational

aims, and what are the challenges in educational tensions? The CRT worked as a stepstone to reveal the tensions in a discussion of *sustainability*. However, now my focus shifts in order to analyse the tensions in teachers' meaning-making of the *desirable educational aims* of ESD and thereby problematise *educational purposes*. These concerns formed the basis of the following three studies. Desirable aims in teachers' discussions are thus analysed with a particular focus on *students' qualification*, *social change* and students' possibilities to develop as *political subjects* as educational areas in tensions in relation to ESD. I begin my analyses with teacher colleagues' discussions as a way to problematise how desirable aims in relation to their experiences in educational school practices are articulated to make reciprocal meaning. This is achieved through analytical tools and theories from discourse theory (Laclau & Mouffe, 2001). Building on previous research, these studies contribute with empirical analyses from teachers' perspectives to problematise aims and purposes in relation to ESD. Furthermore, I will discuss the results from these three studies, starting with the possibilities for students to develop as political subjects (Article 1). This reconnects to the previous discussion of "political subject"; a political understanding I described in line with Mouffe (2000a, b) as an understanding where plurality and differences are the prerequisites of democratic processes and practices. Hence, one way to invite students into democratic processes in education could be to provide "public spaces" in the sense of encounters where differences can be elaborated and students addressed as political subjects (Biesta, 2011a, b; Lundegård & Wickman, 2012; Todd & Säfström, 2008). But how are the students' possibilities to develop as political subjects articulated when teachers discuss what they see as important in ESD?

Critical thinking as room for subjectification in Education for Sustainable Development (Article II)

This study analyses the struggling meanings in teachers' meaning-making discussions of what they regard as important in ESD. The particular aim was to analyse how teachers' articulate teaching situations where students are "invited" to be addressed as political

subjects. However, before discussing this further, I will make some comments on how the struggling meanings of the desirable aims and educational concepts was possible to analyse.

Discourse theoretical tools in areas of educational tension

In the three remaining studies of this thesis, I have used analytical tools from discourse theory to analyse struggling meaning (in the section “Theoretical Influences” of this thesis and in the Articles II-IV there is a closer presentation of the analytical process). This makes it possible to analyse how struggling discourses of particular meaning in relation to desirable aims are articulated when teachers discuss sustainability in an educational perspective. Analyses of floating signifiers – words with no inherent particular meaning per se – could, in this way, be contextualised in educational practice to make meaning in the actual context. In this way, it was possible to analyse how the use of common words and concepts in educational contexts have polyphonic values in relation to how they are relationally used. Polyphonic refers to how voices – or words – have many simultaneous voices, for example, of what is seen as true or how to give a word its particular meaning (Bakhtin, 1981).

Critical thinking as room for subjectification

Focusing on the second study (Article II), critical thinking is recurrently articulated as a desirable aim of ESD. The teachers articulate critical thinking in relation to situations where students are encouraged to question and problematise taken-for-granted norms (Hasslöf & Malmberg, 2015). Further, critical thinking is articulated as an approach which allows room for students to explore their views in relation to others, and in relation to different perspectives, interpretations and values. Thereby, a possible *political space* is articulated; political in relation to how students have possibilities to experience democracy in the way Mouffe (2000a, p. 5) refer to as encounters with a “dimension of antagonism that is inherent in human relations”.

The results show example of how teachers articulate desirable room for subjectification in relation to *teaching situations*, wherein students are “invited” to be addressed as political subjects. Exam-

ples of elements in articulation are units of meaning as “...the students should be reflective individuals... not just take everything for granted” (p. 8), “...to question even authority...” (p. 9), “I do not think we can cast all the students into the same mould, and we shouldn’t...you have different views on sustainable development... we notice this when they have discussions” (p. 8). These utterances are examples of elements articulating these situations. Hence, teachers articulate a discourse where critical thinking is contextualised as to invite “room for subjectification”. This could be seen as an additional perspective, of teachers’ articulations to the study by Lundegård and Wickman (2012) which shows how students can create political subjects in reciprocal discussions.

Although, even if room for subjectification could be seen as a possibility for subjectivity, it is not the same as being a guaranteed outcome. This is a process whereby teaching situations could leave room for to “happen”, but we can never presuppose that it will happen.

Different qualitative meanings of critical thinking

The results of this study also show how teaching situations could limit the possibilities of room for subjectification. If room for subjectification could be seen as teaching situations where the students are addressed as political subjects, there are other discourses challenging this “room”. These tendencies are shown when critical thinking is related to a fact-based science discourse of qualification. Critical thinking is then articulated in a more positivistic, rational discourse where logical reasoning is prioritised as scientific rationality with predefined outcomes. For example, qualification in particular science content was assumed as a prerequisite before discussing issues of sustainability. Critical thinking is, in this way, related to competence as being able to scientifically scrutinise sustainability issues. Hereby, limiting the room for subjectification by marking arguments of ethical or political character as irrelevant in the sustainability context and not desirable in relation to the teaching situation. This could carry a view where the ability to think in new ways in relation to sustainability issues could be limited by favouring reproduction of our knowledge systems. To conclude, the

results show how critical thinking is given different qualitative meaning, that is, how room for subjectification is recognised in relation to what extent the science discourse is given a hegemonic status.

Different branches of education?

Previous studies have shown how issues of environmental education could be hard to fit into a world of schooling with predefined learning goals, control and assessments (Stevenson, 2007a). In a similar way, environmental education and science education are described as increasingly distant, and the question is if environmental education and science education, should be different branches of education or develop towards a more symbiotic relationship (Wals, Brody, Dillon & Stevenson, 2014). Accordingly, the question to ask is if environmental and sustainability education and science education in the same curriculum aims at contradictions in purpose. However, focusing students' *qualification* more particularly, in teachers' meaning-making of the desirable aims in ESD reveals a slightly different perspective. This will be discussed in the next section, in relation to Article III.

Students' qualification in ESD – Epistemic gaps or composites of critical thinking? (Article III)

The third article focuses on how teachers in discussions with colleagues articulate qualification in relation to the desirable aims of ESD (Hasslöf, Lundegård & Malmberg, *in review*). Qualification is put in relation to socialisation and subjectification to be able to analyse purposes as a composite question. Here, three discourses of qualification are identified: the discourse of *qualification as scientific reasoning*, *awareness of complexity* and *critical thinking*.

Epistemic gaps

A fact-based science discourse is confirmed (in relation to Article II) as a discourse of rational reasoning and articulated as the discourse of qualification as scientific reasoning. Nevertheless, struggling articulations of qualification meanwhile articulate issues as open-ended, knowledge as changing, and different views as part of

sustainability. The discourse of qualification as an *awareness of complexity* formulates issues as changeable and context dependent, advocating an approach of qualification as an act of listening and “searching” to become open-minded and aware of complexity. Accordingly, these two discourses, in a way, confirms the gap identified between science and environmental and sustainability education (c.f. Gough, 2002; Scott & Gough, 2003; Stevenson, Brody, Dillon & Wals, 2013; Van Poeck & Vandenabeele, 2012).

Epistemologies as composite tools of critical thinking

In relation to how teachers articulate the desirable aims of students’ actions, that is, to deal with sustainable issues in society, the gap between pre-defined science knowledge to “learn” and the more complex learning process with open-ended outcomes comes together (i.e. discourses of different epistemological views) in the discourse of *qualification as critical thinking* in relation to ESD. Here, qualification as critical thinking, formulates a desired way for students to act as educated students, where scientific reasoning through awareness of complexity is seen as one of many perspectives to value issues of sustainability.

Hence, the results of this study shows how an epistemic gap in “theory” by the teachers, is articulated in a way that makes “matters of facts” into “matters of concern” (c.f. Latour 2004, 2010; Van Poeck, Goeminne & Vandenabeele, 2014; Öhman, 2006b) by using the two epistemologies as composite tools of critical thinking. The discourse of awareness of complexity opens up for ethical and political values and thereby calls for a more “passionate” engagement of sustainability issues (c.f. Mouffe, 2000a, b). The results of this study shows how qualification in relation to ESD, in this way, serve as a bifurcation of epistemological gaps. That is, how the more positivistic scientific reasoning, together with a postmodern awareness of complexity, makes a composite as qualification of critical thinking. As a composite discourse, this is articulated as a socialisation of students’ preferable actions of critical thinking in societal contexts of sustainability. These perspectives of composite discourses and possibilities of making matter of facts

into matter of concerns reveals a diverse area of future questions for coming research.

The results of these studies show how the teacher as a subject due to simultaneously existing discourses, is interpellated into struggling teacher-specific positions. The teacher position is accordingly fragmented, and the teacher thus declared as an overdetermined subject (Jørgensen & Phillips, 2002; Laclau & Mouffe, 2001). This is the focus of the last article of this thesis, which elaborates on teachers' subject positions in relation to ESD discourses that approach *social change*.

Teachers as agents for social change? Subject positions from a transformative perspective of sustainability (Article IV)

The results of the last study show how different discourses offers teacher-specific subject positions in relation to different epistemological approaches, desirable educational aims, and preferable guidelines (Hasslöf, Lundegård & Malmberg, *manuscript*). These (subject positions) are the outcomes of struggling divides in relation to how the educational myths of social change relate to a “more sustainable” way of living, and are represented in the articulations.

The teacher is simultaneously identified in three struggling positions: as the rational subject (guiding teachers' action towards being a neutral conductor), as the responsible subject (as a role model), or as the reconstructing subject (with the teacher as a reconstructor). The discourse articulating the teacher-position as a rational subject is articulating the teacher as a conductor represented by an educational myth of social change towards sustainability through schooling of predefined knowledge systems to learn in a world of choices; a world where scientific reasoning will make up the educational tool for sustainable choices towards a more sustainable living. A “neutral” position, but nevertheless, together with the contrasting subject position as the responsible subject, jointly articulates an education mainly as individual learning, that is, to learn for a sustainable living through predefined competences and knowledge (c.f. Van Poeck & Vandenabeele, 2012).

However, the discourse articulating the teacher position as *the responsible subject* situates the teacher as being a kind of role model, although the teacher is positioned in a more explicit normative position, while at the same time emphasising an awareness of decisions as context dependent and humans as inconsequential due to conflicting interests (an overdetermination in itself). Within this subject position, the educational myth of social change is emerging – as the socialisation of students, an educational guide in a changing world of conflicts and contradictions. Role models could serve as ideal visions of sustainability and give students inspiration and hope for on-going change towards a “right” way, i.e. a more sustainable world. The last of the teacher-specific-positions is the *reconstructing subject position*, which identifies the teacher as a reconstructor. This position is situated in a contrasting position to the others, as representing social change from an educational position articulating a reformulation of sustainability in a society of political and ethical engagement (as myth). Through this position and educational myth, the guidelines for teachers’ actions recognise sustainability as a matter of public concern, specifying learning as encounters for students to learn from, to get to know and be aware of difference, and develop as political subjects.

If the teacher as neutral conductor and role model in the first discourses mainly underline qualification and socialisation, the third discourse with the teacher as a reconstructing subject rather accentuates the possibility for the student’s subjectification process (c.f. Biesta, 2009b, 2011a, b). These simultaneously existing discourses articulate in different ways how to acknowledge “social change” and sustainability, as mainly being mainly a process to empower students for “right” choices or to uphold “social change” as a way for students to explore new interpretations of a more sustainable living. In this way, the results show how teachers are offered to move between different epistemological approaches in relation to issues of sustainability partly due to contradicting purpose revealed as struggling discourses and emerging educational myths of social change. Whether this is an option of “choice” for the teachers is due to how teachers are interpellated (i.e. which dis-

course to address the subject) in different educational contexts and remains a question to be further elaborated by future research.

Previous research relating to social change in relation to environmental and sustainability education mainly focuses on students' behavioural change and competences in relation to "sustainable behaviour" (Mogensen & Schnack, 2010). This study contributes with another perspective, framing social change from teachers' articulations and focusing teachers' subject positions and educational myths.

In the next section, I will give a more conclusive perspective of how the research of this thesis contributes to the present research field and educational practice.

Contribution of this thesis

Based on the results and discussion presented above, I will proceed with some central conclusions and discuss in what way this thesis contributes to the present research field. The overall ambition of this thesis has been to problematise ESD from a conflict perspective and elaborate complex educational areas of ESD in relation to the purposes of education. Environmental and sustainability education brings with it contested concepts which develop and change over time and thereby calls to be continually recreated in relation to education (Jickling, 2003; Jickling & Wals, 2008, 2013; Jickling & Spork, 1998). How the meanings of the visions and purposes must also be developed by teachers themselves to make meaning in the particular context are arguments stated by previous research (Stevenson, 2006, 2007b). In my research, teachers' articulations of the desired aims of ESD have been analysed and problematised in relation to purposes and particular meaning, and in this way, the results make a contribution of new perspectives and empirical knowledge from practitioners of ESD. In my studies, I have tried to carefully listen to the teachers' reciprocal discussions to be able to give a teacher perspective in an area often impregnated with policy and theoretical perspectives.

Problematising intersections of educational tensions in ESD

Educational purposes and goals always combine the relationship between society, institutions and the individual. This relationship is a balancing act. On one hand, there is the question of whether specific curriculum content educates the individual to become a responsible citizen in a defined order, relating mainly to issues of reproduction of qualification and socialisation. On the other hand, is the individual, being offered an education which enables him/her to develop as a political subject and find an identity in a pluralistic and changing world mainly through subjectification processes (Biesta, 2009b). It is in these struggles of educational purposes that my empirical studies should be seen as a perspective-generating contribution which problematises teachers' articulations of the desired aims and purposes of ESD. A further ambition of my research has been to contextualise a practical understanding of theoretical concepts through empirical studies.

A theoretical contribution, contextualising theoretical concepts

Through the research of the different studies, theoretical concepts with no inherent meaning *per se*. (i.e. floating signifiers) have been contextualised through the teachers' articulatory practices. For instance, the empirical analyses carried out in this thesis illustrate how critical thinking has been articulated by teachers as having *different qualitative meaning* in relation to different epistemological approaches and purposes of ESD.

Further, the way in which *room for subjectification* has been used as an analytical lens in empirical contexts has made visible teachers' articulations of teaching situations wherein students' are addressed as political subjects.

Another result shows how alternative perspectives were articulated to approach *socialisation*. In relation to Biesta's (2009a, b) framework of functions of education, socialisation mainly embraces how education situates individuals into existing ways of doing and being. The results from the studies of this thesis shows how the teachers also articulate how to socialise the students into a discourse which invites students to challenge existing orders (Article II, IV).

As a result, the empirical analyses contribute with *contextualised perspectives of understanding theoretical concepts*.

An empirical contribution

The way theoretical functions of education are used as analytical lenses of teachers' articulations, has made it possible to problematise the purpose of education as a composite question (Biesta, 2009a). Teachers' articulations were analysed – through qualification, socialisation and room for subjectification – to be problematised in relation to purpose. This resulted in problematising the struggling processes of meaning-making in relation to the desirable aims, meaning of concepts, epistemological views, teachers' subject positions and educational myths of social change. In this way the thesis makes a contribution of *new empirical knowledge* to the research field.

A methodological contribution

Through the development of the CRT (Article I), this thesis contributes with a method to analyse conflicting perspectives in relation to sustainable development in an educational context.

Likewise, in relation to ESD, through the development of analytical methods from discourse theory, it has been possible to analyse and problematise teachers' meaning-making discussions as articulatory practices in dynamic struggle (described in Article II-IV, and the chapter "Theoretical Influences" of this thesis).

In the analyses, I have used Mouffe's framework both as political theory and as point of departure for the discourse theoretical analyses.

Accordingly, through the development of analytical methods and tools, this thesis has the ambition to make a *methodological contribution*.

Contribution to educational practice

The studies carried out in this thesis bring new perspectives and knowledge to educational practice. My hope is that this thesis will add to the understanding of meaning-making as relational processes, and how the purposes of environmental and sustainability

education are a composite question of desirable aims in struggle. The articulation of discourses of reconstruction and awareness of complexity formulates possibilities for students to encounter sustainability in more open-ended learning processes in addition to the more traditional purpose of reproducing predefined knowledge. Through the emerging results of room for subjectification as possible educational moments and the visualisation of educational myths of social change in relation to teachers as overdetermined subjects, this thesis adds further understanding of the political and democratic dimensions of ESD.

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PART II: ARTICLES

- I. Hasslöf, H., Malmberg, C., & Ekborg, M. (2014). Discussing Sustainable Development among Teachers: An Analysis from a Conflict Perspective. *International Journal of Environmental and Science Education*, 9(1), 41-57.
- II. Hasslöf, H., & Malmberg, C. (2015). Critical Thinking as Room for Subjectification in Education for Sustainable Development. *Environmental Education Research*, 21(2), 239-255.
- III. Hasslöf, H., Lundegård, I., & Malmberg, C. (*in review*). Students' qualification in ESD - epistemic gaps or composites of critical thinking? *Submitted 27 Nov 2014 to: International Journal of Science Education*.
- IV. Hasslöf, H., Lundegård, I., & Malmberg, C. (*manuscript*). Teachers as agents for social change? Subject positions from a transformative perspective of sustainability. *In process*

Papers

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1. Margareta Enghag (2004): MINIPROJECTS AND CONTEXT RICH PROBLEMS – Case studies with qualitative analysis of motivation, learner ownership and competence in small group work in physics. (licentiate thesis) Linköping University
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4. Margareta Enghag (2007): Two dimensions of Student Ownership of Learning during Small-Group Work with Miniprojects and context rich Problems in Physics. ISSN: 1651-4238, ISBN: 91-85485-31-4. (Doctoral Dissertation) Mälardalen University
5. Maria Åström (2007): Integrated and Subject-specific. An empirical exploration of Science education in Swedish compulsory schools. (Licentiate thesis) Linköping university
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What happens with the aims and purposes of education when sustainability issues of complexity, uncertainty, risk and necessity are to be handled in educational practises? In this thesis Helen Hasslöf analyses how secondary and upper secondary school teachers discuss aims and purposes of their teaching practices in the light of sustainable development as an overarching perspective. Conflicting aims are problematised to discuss purposes of education. The included articles thus elaborate on students' possibilities to develop as political subjects, how to value what is seen as qualification of Education for Sustainable Development (ESD), and emerging myths of social change in relation to sustainability. Furthermore, the concept of sustainable development is elaborated from a conflict perspective in an educational setting. Theories and ideas from Bakhtin, Wertsch, Biesta and Laclau & Mouffe are important theoretical foundations. Analytical methods, inspired by discourse theory, are developed to be used for analysis of teachers' meaning-making discussions.

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