Education for sustainable development in social studies: a scoping review of results from Scandinavian educational research

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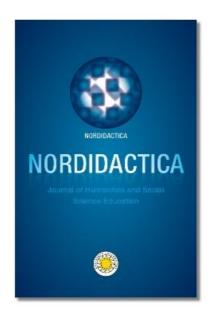# Education for sustainable development in social studies: a scoping review of results from Scandinavian educational research

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Abstract: In recent years, education for sustainable development (ESD) has been given increased attention, not only in the science and geography subjects, but all through the curricula. In the Norwegian context, ESD is implemented as an interdisciplinary theme in the newly revised curriculum, and similar changes are happening in countries all over the world. This ongoing shift has implications for both teachers and researchers, and raises the question: what do we know about ESD in social science didactics? The present study is a scoping literature review of Scandinavian research on ESD in social science didactics. The goal of the study was to give an overview of the research at present, as well as to scope out an agenda for further research. Using a range of inclusion and exclusion criteria, 25 studies were identified on the subject. The review shows, first and foremost, that the field is small, as well as predictably fragmented given the size of the sample. Some tendencies both in regards to themes and methods were identified. The majority of the sample studies used documents like curricula and textbooks as their data source. Thematically, teacher conceptions and attitudes towards ESD, often in comparison between subjects, were the most common objects of inquiry. Student or teaching-centred research was less prominent. The review shows a need for more research on ESD practices in social science classrooms and its implementation into teacher education.

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Introduction

Faced with the ever-growing magnitude of the consequences of unsustainable industries, economies and lifestyles, questions of sustainability become more dire. Following the Agenda 21 action plan, and the following UN decade of education for sustainable development (UNDESD), a key actor in the response to the need for a more sustainable global society is the education sector (United Nations Conference on Environment and Development, 1992; UNESCO, 2006). The UNDESD framework states that "The overall goal of the DESD is to integrate the values inherent in sustainable development into all aspects of learning to encourage changes in behavior that allows for a more sustainable and just society for all." (UNESCO, 2006, p. 1). Education has a pivotal role in giving young people the skills and knowledge needed to deal with the challenges of creating and upholding a sustainable society, and this responsibility has only increased in scope over the last years (Sinnes, 2015).

Several countries have taken measures to include a more holistic approach to sustainable development in their curriculum, addressing both ecological, economical and social aspects of the concept. One example is the recent curriculum revision in Norway. The revised curriculum puts sustainable development as an interdisciplinary theme across subjects (Utdanningsdirektoratet (Udir.), 2017). In line with the UNDESD, it states that sustainability concerns "issues relating to environment and climate, poverty and distribution of resources, conflict, health, equality, demographics and education", and that working with these issues, the students shall "develop skills to make them able to act ethically, and with environmental consciousness" (Udir., 2017, p. 13). This increased focus on sustainability in education is not a new development, but rather a continuation of one that has been in motion for several years, through a string of global initiatives targeting education for sustainable development (ESD) (Sinnes, 2015).

The social sciences are perhaps especially capable of taking on the task of educating sustainability conscious students. With public governance, citizenship and economy being central to the subjects' content, and its focus on skills like system thinking, the ties between ESD and the social science didactics field are strong (Sæther, 2019). Though there is a plentitude of research on ESD more broadly, social science didactics is still an emerging field (Kvamme & Sæther, 2019). In a systematic review of Norwegian social science didactics research, Skjæveland (2020) finds that 78 out of 99 included studies were published after 2010, illustrating a field of research that has grown in recent years. In the wake of the push towards a more holistic approach to ESD in education systems, the contributions of subject didactics research are necessary, both in implementing and evaluating it. How is sustainability taught in language classrooms? What are science teachers' conceptions of the term? And how is it conceptualized in social studies curricula? More specific questions yield more specific answers.

In this article, I will review a sample of the research on ESD in social science didactics in Scandinavian countries. Literature reviews may serve several purposes: they are helpful in summarizing knowledge, comparing studies and highlighting areas of a field that may be under-represented in the research (Arksey & O'Malley, 2005).

With the rise of ESD, and the research on it, a review of the research on the subject seems in place and can contribute to all the aforementioned purposes.

This review adds to several previous contributions. Aikens, McKenzie and Vaughter (2016) reviews environmental and sustainability education policy research, analyzing the methodological and thematic trends of a large sample of articles, Rousell and Cutter-Mackenzie-Knowles (2019) review research on climate change education, with the aim of identifying key areas for further research, and, in a narrative research synthesis, Håkansson et al. (2019) analyses ESD research in search of approaches to the political dimension of ESD.

Though there has been conducted reviews on ESD research previously, none have met this task within the frame of social science didactics, and further, not limited to the Scandinavian context. By limiting this review to didactical research, I aim to contribute to both the literature on ESD and social science didactics more broadly. To aid in structuring the reviewing process, the following research question was developed:

- What themes are explored in Scandinavian research on sustainability education in social science didactics and how?

With this question in mind, I aim to give an overview of the existing research in the field, and further, use this mapping to scope out an agenda for further research which may prove fruitful both for my own research, as well as for others. In the following, I will begin by outlining the context of the study, discussing the concept of ESD and its relation to the social studies subject(s). Next, I will give an account of the sampling process and method of analysis of the review. Further, I report on the distribution of the sample studies on a selection of methodological metrics and the results of a qualitative analysis. The final part of the article discusses the research question described above, before offering concluding remarks on the findings of the study and suggestions as to the way forward for the field.

Education for sustainable development and social studies

Following the "Brundtland definition", the concept of sustainable development refers to "development that meets the needs of the present without compromising the ability of future generations to meet their own needs" (World Commission on Environment and Development, 1987). The concept is often understood, whether rightfully so or not, through the three pillars of sustainability, the social, economic and environmental pillar (Purvis et al., 2019). The social pillar contains concepts like labor conditions, human rights and education, the economic pillar: poverty and wealth distribution, and the environmental pillar, intuitively, our shared environment and global climate.

While the broad literature on sustainability education offers many terms with both overlap and differences in content (e.g., environmental education, education for sustainable development, environmental and sustainability education, climate change

education), I have opted to use the term "education for sustainable development" consistently through the article. With regards to education, environmental and sustainability concerns have historically been framed within the science subjects, often conceptualized as environmental education, and focusing on ecology and natural mechanisms (Ballantyne, 1999; Birdsall, 2014; Breiting, 1994; Kvamme et al., 2019; Sætre, 2016). The UNDESD advocates for an increased focus on all aspects of sustainability, accentuating the importance of a holistic approach to the subject matter. Sustainability is, as mentioned above, not only concerned with greenhouse gases and plastic waste. Equally important is the distribution of wealth, both globally and locally, human use and over-use of natural resources, the limits of economic growth and the roles of social and democratic institutions in shaping our common future. The UNDESD framework requires educators to incorporate sustainability as a theme in all subjects, utilizing their different approaches, methods and analytical lenses in meeting the challenges of global sustainable development (UNESCO, 2006). As such, the shift towards holism in ESD offers overlap with topics central to social studies and highlights its relevance in the field.

Previous research finds three distinct teaching traditions in approaches to sustainability education: the fact-based, normative and pluralist traditions (Sandell et al., 2005; Sund & Wickman, 2011; Öhman, 2004; Öhman & Östman, 2019). In the first of these traditions, sustainability issues are seen as knowledge-based problems, and as such, its didactic implication lies with knowledge as well. This may be understood in tandem with the aforementioned environmental education typically found in geography and science classrooms and curricula. The normative tradition concerns itself with morality, and with facilitating values in students, while the pluralistic tradition sets out from a point of view that sustainability issues are uncertain and subject to change, which grounds the tradition in human and political questions of conflict (Öhman & Östman, 2019). The pluralist tradition in ESD share much of its literature with that of social science education generally, and democratic and citizenship education specifically, and illustrates the role and relevance of these types of subjects and topics in ESD.

Pluralism in this context is a broad term, which encompasses different approaches and schools of thought. Tryggvason and Öhman (2019) elaborates on two approaches to pluralistic sustainability education, deliberation and agonism. Deliberation as a concept stem among others from the works of Habermas, and outlines an ideal of consensus through rational and respectful discussion. This ideal and method has been adopted into democratic education as well (Englund, 2006; 2016). While objective consensus is hard to come by on any topic, a central idea in deliberation of "real world" political questions is that a decision must be reach, whether the discussion can be put to rest or not (Tryggvason & Öhman, 2019). Working with deliberation in the classroom may facilitate competence towards a collective will-formation (Englund, 2016). However, reaching consensus, or aiming for it, whether in political debate or classroom discussion, is impossible without the will to change perspective. Following this, a necessity for this approach is that the student is able to put forward only their arguments, without tying them to their identity (Tryggvason & Öhman, 2019).

Departing from the same outset, though reaching a different conclusion, another way to approach pluralistic sustainability education is agonism. Partly developed as a response to the deliberative approach, agonism is a central concept in the works of Mouffe, one which, contrary to deliberative approaches, puts emotion at the center of the equation. Agonism frames political emotions, that is, emotions directed towards political issues, as important and productive in a classroom setting (Tryggvason & Öhman, 2019). Giving these emotions a legitimate place in discussion may foster engagement in students, both within the frame of ESD and in broader citizenship education. Apart from this, the starkest contrast between this approach and deliberation as a didactic tool is that there is not a focus on reaching a consensus. Rather, agonistic approaches seek to let political conflict be played out democratically. In order for this to be possible, Mouffe argues, one must view their opponent as an agonistic adversary, rather than an antagonistic enemy (Mouffe, 2005). In practice, this means that the conflicts explored between students must be grounded in an understanding that a given issue of conflicts is one between what the participants want, rather than what they are (Tryggvason & Öhman, 2019).

Finally, another concept which may be discussed, if not within the pluralistic tradition directly, then at least related to it, is action competence (Jensen & Schnack, 1997; Lundegård & Wickman, 2007; Mogensen & Schnack, 2010; Sæther, 2019; Öhman & Östman, 2019). Jensen and Schnack (1997) describe action competence as being able and willing to act intentionally. Within the frame of subject didactics, the authors tie this concept to democratic and environmental education. Democratic education must give students the ability to participate, and "Education for democracy is thus also socialisation and qualification for the role of being a participant" (Jensen & Schnack, 1997, p. 165). This ideal, as it applies to sustainable development, can to some degree (though indirectly) be found in the Norwegian social studies curriculum, where students are tasked with "presenting measures for a more sustainable society" (Udir, 2019). Similarly, both Swedish and Danish social science curricula include, though perhaps more broadly, agency aspects into the teaching. The Swedish civics curriculum aims at giving students "understanding of what it means to be an active, responsible citizen in a rapidly changing society", and the Danish to give students "competencies to actively participate in democratic society" (Børne- og undervisningsministeriet, 2019, p. 17; Skolverket, 2018, p. 227, my translation).

The social science subject(s), its topics and its didactical lenses, as shown above, has both overlap with, and contributions to the broader field of ESD. This illustrates the need both for an overview of these contributions as well as, naturally, continuing research on them.

Methods

Sample

The present study may be labeled a scoping literature review, a literature review with the goal of documenting the knowledge on its subject thus far, and critically evaluating its gaps (Arksey & O'Malley, 2005; Jesson, et al., 2011). While a systematic review aims to give an account of, or aggregate, all existing research results on a topic, the scoping review is less rigorous in its approach, allowing for different goals, but also enabling a somewhat less reliable output (Jesson et al., 2011). With that in mind, it should be noted that though this study cannot and will not give a complete picture of the research in the field, that is neither its goal. However, as the niche this study concerns itself with is fairly narrow, I have, following the tradition of the systematic review, attempted to conduct the sampling as comprehensively as possible, as well as clear and transparent for the reader.

Searching for and including articles has been a process of elimination. Any literature review must have restrictions on what may or may not be included as material for it. The research question of this study, which I have outlined in the introduction, necessitates several.

First of all, the material of interest to this review is related to social science education. This means that research on ESD in e.g. science or language subjects, and more general, subject non-specific studies have been excluded. I have, however, included articles that compare attitudes, approaches, curricula, etcetera in the social sciences and other subjects. Contributions from the geography subject are included as well, as this is closely linked to, and in the Norwegian model incorporated into, social studies.

Secondly, the studies must be related to ESD. That means that more general social science didactics research, as well as research on ESD-related themes, like democracy education, has been excluded from the sample.

Finally, a few general restrictions were put in place: master theses were not included. In the interest of relevance, searches were also restricted to the last 20 years, meaning that studies published before the year 2001 have not been included. This dividing line was however redundant, as the earliest study included in the sample was published in 2007. Studies using data from early childhood education and care, as well as higher education, with the exception of research on teacher programs/pre-service teachers, were excluded as well. Finally, studies with an empirical context outside of the Scandinavian countries were excluded.

TABLE 1

Inclusion/exclusion criteria

Criterion	Inclusion	Exclusion
Database	ERIC, Web of Science, ORIA, Idunn	Others
Time frame	2001-2021	Earlier studies
Language	English, Norwegian, Swedish, Danish	Others
Focus/theme	ESD research within the frame of social science didactics	General ESD research, general social science didactics research
Data source	Any (Students, teachers, policy documents, textbooks, theoretical literature, video/observation etc.)	-

The source material for this article has been collected using four databases: ORIA, Idunn, Web of Science and Education Research Information Center (ERIC). The former two are Norwegian databases, with Idunn being useful mainly for finding Norwegian, as well as some Scandinavian research, and ORIA being a database of the books and articles that are available through Norwegian academic libraries, with research from all countries. Web of Science and ERIC are international databases as well, but I have, as has already been established, only collected studies from the Scandinavian countries. Lastly, I went through a hand-search of two major journals for didactic research in Scandinavia, Nordidactica and Acta Didactica Norden (previously Acta Didactica Norge), as well as the Nordic Journal of Comparative and International Education. All searches were conducted in the first half of 2021.

After some search attempts which ranged from too specific (only a handful of hits) to much too broad (thousands of hits), my search string consisted of the keywords "education for sustainable development", "sustainability", "social studies", "civic education", "social science education", "history" and "geography", in combination, formatted so that both the first and either of the four latter search terms must be included in the search results. To broaden the search results further, I translated the search terms to Norwegian, Swedish and Danish as well, and did each English search thrice, adding key words for the three Scandinavian countries for each of them. After searches and individual assessment of the articles, 25 studies fit the inclusion criteria, and these 25 studies constitute the data for the review.

Data analysis

In order to organize the data material, and to address the study's research question, an inductive thematic analysis was conducted (Braun & Clarke, 2006). The first stage of the analysis consisted of coding segments of the articles that related to its topic,

mainly found in the sections on theory and discussion. A semantic (or in vivo) approach
was used, meaning that the resulting codes were taken directly from the material, rather
than being interpreted further and labelled by the researcher (Braun & Clarke, 2006;
Creswell, 2013).

The second stage of the analysis consisted of grouping the emerging codes into
themes, allowing for insight into the broader patterns of the data. This process was
straight-forward in stages, as several articles employed the same or similar literature
and frameworks. Table 2 shows the resulting themes, as well as examples of the codes
that went into them.

TABLE 2

Overview of themes and codes

Theme	Code examples
Action competence and participation	Action competence, citizenship, democracy
Pluralism, discussion and conflict	Pluralism, deliberation, argumentation
Norm-critical perspectives	De-colonialism, critical race theory
Political and societal dimensions of SD	Political dimensions, economic dimensions, political emotions
Transdisciplinary, holistic and collaborative approaches	Transdisciplinary, teacher collaboration, holistic ESD
ESD in geography	Geography, geographical literacy

Finally, a more quantitative approach was taken in mapping out the methodological
characteristics of the sample studies,. In the findings section below, I recount the
distribution of the studies' publishing year, research design, data source and education
level of data sources (where applicable), as well as the above mentioned thematic
analysis.

Analysis and findings

Though there was some overlap between databases, the searches revealed significant
differences in results. While the Norwegian Idunn database gave few hits (<20), ORIA,
across all search words, yielded very high numbers (>1000). Of these, the
overwhelming majority did not fit my inclusion criteria. Many, despite the search string
used, belonged to other disciplines, like language or science, or approached ESD more
generally, and not specifically through a subject didactics lens. The ORIA database
yielded many MA-theses or other sources which had not been peer-reviewed. After
going through the results, 25 studies were identified and included in the sample.

TABLE 3

Distribution of studies by year

Year published	
2007	1
2010	2
2012	1
2013	2
2014	2
2015	1
2016	1
2017	1
2018	3
2019	4
2020	5
2021	2

In the sampling process, searches were limited to the last 20 years, operating with a cut-off point of 2001. Despite this, the earliest study that was eligible for inclusion was published in 2007, pointing to a new, but growing field of research. Though the sample is small and cannot be interpreted as accounting for the entire field, the weight of the included studies was published in the tail end of the decade, which is in line with Skjævelands (2020) findings. The number of studies drop somewhat in 2021. This coincides with the time frame of the sampling process, which was carried out in the first half of that year.

TABLE 4

Distribution of research design

Design	Data source	No. of studies
Qualitative	Student interviews	3
	Teacher interviews	5
	Observation/video	4
	Documents	7
Quantitative	Student survey	4
	Teacher survey	3
Theoretical		5

Table 4 shows the distribution of research methods used in the sample studies. Most of the studies employed qualitative approaches, with document analysis (e.g. Biström & Lundström, 2021; Eidsvik, 2020; Sæther, 2017) being the most commonly used method. Teacher interviews and theoretical contributions are prominent as well (e.g. Borg et al., 2012; Læssøe, 2010; Sund & Gericke, 2020; Sund et al., 2020; Tryggvason & Öhman, 2019). Some studies used a mixed approach, resulting in a higher sum in table 4 than in the study sample.

TABLE 5

Distribution of education level investigated in the sample

Level of education	No. of studies
Primary school	7
Lower secondary school	8
Upper secondary school	9
Higher education (teacher program)	1

Table 5 shows the distribution of the education levels researchers sourced data from in their sample. Secondary school data is prominent, with upper secondary school being the source of data for the most studies. Following is primary school data, and by far the smallest unit is studies researching teacher education programs. While it is not apparent in the table, a further nuance is that the bulk of the studies focused on primary school use documents as data, and teacher and student evidence is lacking, as opposed to many of the studies in secondary school.

The descriptive quantitative analyses of the sample studies point to a growing field of research which is relatively heterogenous in its approach, but with some overarching tendencies towards methods. Further, the thematic analysis reveals some common themes and theoretical outsets in the sample. Below, I will expand on the findings of the included studies and discuss them in light of the above analysis.

TABLE 6

Thematic analysis

Action competence, citizenship and participation	Biström & Lundström, 2021; Cheah & Huang, 2019; Mogensen & Schnack, 2010; Sæther, 2017
Pluralism, discussion and conflict	Christenson et al., 2014; Lundegård & Wickman, 2007; Læssøe, 2010; Rudsberg & Öhman, 2015; Tryggvason & Öhman, 2019; Öhman & Öhman; 2013
Norm-critical perspectives	Eriksen, 2018; Ideland & Malmberg, 2014
ESD in geography	Eidsvik, 2020; Sætre, 2016
Political and societal dimensions of SD	Berglund & Gericke, 2018; Håkansson & Östman, 2019; Ignell, et al., 2013; Tryggvason & Mårdh, 2019
Transdisciplinary, holistic and collaborative approaches	Borg et al., 2012; Demant-Poort & Berger, 2021; Jegstad & Ryen, 2020; Munkebye et al., 2020; Nordén, 2018; Sund et al., 2020; Sund & Gericke, 2020

Four studies within the sample had a focus on action competence, citizenship and participation in sustainability education. The studies differed both in methods, scope and findings. Through an analysis of Swedish textbooks in geography and biology, Biström and Lundström (2021) found that while sustainable development was present in textbooks from both disciplines, its presence was fragmented. While it was discussed to some extent through its different dimensions in geography, such perspectives were lacking in biology. One conclusion of the study was that the textbooks obscure the complexity of the topic, shying away from the conflicts that are at its core, and that these flaws limit the potential to facilitate action competence in sustainability education. Perhaps illuminating factors that may remedy this, Mogensen and Schnack (2010), in a theoretical contribution to the literature, explores action competence within the frame of bildung, and further, how action competence learning goals may be evaluated. Working from an understanding of action competence as an educational ideal, and in turn, a concept that is difficult to quantify, they argue for evaluating quality in teaching, rather than student comprehension. They argue that such indicators of quality should "focus on enhancement of teaching and learning; reflect the democratic values that ESD seeks to promote; be co-elaborated by the relevant stakeholders; and foment institutional as well as individual learning and, thereby, instantiate

the *Bildung* perspective embedded throughout this approach" (Mogensen & Schnack, 2010, p. 1).

Using ICCS survey data of students, teachers and school administrators, Cheah and Huang (2019) looked at how school environmental citizenship education practices affect students' environmental citizenship. This outcome measure was based on students' knowledge, attitudes and behaviors. They found that environmental citizenship education did indeed have a significant positive association with the outcome, suggesting that teacher, school leader and student attitudes and behaviors coincide, and that environmental consciousness in the education system does impacts students. However, in light of Mogensen and Schnack (2010) one may problematize the use of measures for citizenship attainment in students and inquire as to the usefulness of measuring action competence in this way.

A similar framing with a differing result is found in Sæther (2017), who analyzed the written end results of an ESD-centered social studies project in a Norwegian upper secondary class. The analysis was focused around the students' reflections on the project. The project focused on the need and ability to change into a more sustainable lifestyle and included having the students make changes in their own life to accommodate this need. Sæther (2017) found that the students to a high degree centered their reflections around individual actions, but somewhat paradoxically did not reflect on connections between their own lifestyle and their global consequences. Further, reflections on collective action and structural change were lacking in the data material, suggesting that projects such as the one carried out may need to soften its focus on individual change to promote a wider perspective on the challenges of sustainable living, integrating the importance of political structures and policy.

A slightly larger portion of the sample were mapped under the theme of pluralism, discussion and conflict. Studying the role of conflict in discussions on sustainability topics, Lundegård and Wickman (2007) interviewed high school students, with a focus on conflicts of interest. Employing the works of Dewey and Wittgenstein, and focusing on Wittgensteins concept of "language games", they found that conflict in the dialogue, and further, on a broader human level, was not only constantly arising, but also necessary for the dialogue to move forward. Drawing on these findings, they argue that value judgement is a prerequisite for dialogue and discussion in ESD. Christenson et al. (2014) used a student survey to investigate differences in argumentation regarding socioscientific issues (one of which being climate change) of social science and science majors. The authors found that upper secondary school students majoring in social studies used knowledge in their argumentation on climate change to a larger degree than science majors, while the science majors were more prone to arguments oriented towards their values. Across the topics discussed by the students, the social science students employed more arguments, and the authors note the possible relation to the use of discussion of issues in the social science subjects. In a video case study with a somewhat narrower research question, Rudsberg and Öhman (2015) investigated the role of knowledge in discussions of sustainability topics. They found, somewhat similarly to Christenson et al. (2014), that knowledge played a central role in the students' recorded discussions, had diverse functions and that the students employed

knowledge from several disciplines in their argumentation. In yet another similar video study of student discussions, Öhman and Öhman (2013) followed an ESD project which integrated civics, geography and language classes, and which had the goals of making the students "be able to take an active part in international civic society debates" (2013, p. 331). The authors investigated how the projects participatory approach to ESD played out. Findings suggested that the discussions were consensus-oriented, and it is concluded that participation does not necessarily facilitate more diverse knowledge, but rather, runs the risk of avoiding ideological conflict altogether.

Tryggvason and Öhman (2019) provide a theoretical ground for approaching conflict oriented pluralist sustainability education. They outline and discuss two approaches, deliberation and agonism. Drawing on the work of Habermas and Mouffe (as well as other contributors of both literatures), they present merits and disadvantages of both approaches, pointing to their similar outset, but the differing views on the end goals of discussion, and on the possibility and role of consensus. A point of critique of the deliberative approaches in the contribution is that a lack of emotional investment in students, and a search for consensus, may foster less engagement and critical discussion, which may aid in understanding the findings of Öhman and Öhman (2013)

Using three empirical cases in non-formal education settings as a frame of discussion, Læssøe (2010) argues that participatory approaches to ESD may suffer from becoming abstract ideals. He warns against symbolic participation but notes that genuine participation may prove problematic as well, by facilitating given discourses and neglecting others. As long as genuine participation is created through a given lense, others will be left out. Læssøe offers "ecological modernization" as an example of this, arguing that a hegemonic technology optimism in Northern Europe has limited the possibility of discussing material growth and social justice in SD and ESD. He therefore argues for a historical and socio-cultural approach to participation in ESD, outlining dilemmas, dissensus and deliberation as key parts of this approach.

Two of the included studies concerned themselves with norm-critical perspectives. Ideland and Malmberg (2014) found in analyses of textbooks in social science, geography and science that the teaching materials fostered a divide between "us" and "them", through upholding dichotomies of, among others, "helping/helped" and "ignorance/morality". Similarly, through a narrative analysis, Eriksen (2018) found that "narratives constructed through lectures and learning materials can be rather monolithic and claim universalism for themselves" (2018, p. 36), advocating for more room for decolonialism in ESD.

While some of the comparative studies described in this review include geography in their sample, only two articles were identified as concerning ESD in geography specifically. Both studies could very well be coded as focused on curriculum reform as well, rather than the geography subject. Sætre (2016) analyzed the Norwegian geography curriculum from between the 1970s to the 2010s, finding little in the way of changes after the implementation of ESD into the subject. Further, the author found no significant differences regarding SD between lower and upper secondary curriculum, suggesting limited progression between them. Strengthening and implicitly fleshing out these claims, Eidsvik (2020), in a study of whether the 2020 revision process of the

Norwegian curriculum is academically legitimized, found that scholars point of view had not been taken into account sufficiently, and argues that geography and history have been weakened within the frame of SD in the revised curriculum as a result.

Four of the sample studies investigate the political and societal dimensions of sustainability education, with the "societal dimension" being mainly represented through the role of economy in sustainable development. Berglund and Gericke (2018) conducted a quantitative study of young peoples' views of the relationships between economic growth, economic development and sustainable development. Employing a cluster analysis on survey data, they found a diverse set of viewpoints on the relationship between economy and sustainability, dividing them into four clusters. The largest group of respondents did not see economic growth and development as a threat to SD, but rather as a necessity for it. Further, this group had less of a concern for the environment than two of the other three groups. The smallest of the four groups was ambivalent, seeing the relations as both threatening and necessary. Further, two groups, one "nuanced ambivalent" and another "critical" was identified, with the former having some doubts on the necessity of economic growth and development for SD, and the latter being very critical of both. In a similar study, Ignell et al. (2013) investigates the relationships between student understandings of pricing of products and the products' environmental impact. They found that few of the respondents expressed an environmental factor relating to product pricing. A few students tied the two concepts to supply and demand, arguing that environmentally friendly products were more sought after, consequencly raising its price, and a few suggested that emvironmentally friendly products cost more to produce, but non of the informants held or combined the two views. Nearly half the sample felt that the concepts should relate to one another, with reasonings from lowering prices for incentivicing environmental products to increasing prices to facilitate environmentally friendly production.

The last two studies within this theme both set out to research the political dimension of sustainability, and both grounded in the works of, among others, Mouffe. Håkansson and Östman (2019) set out to develop a model for understanding how affect, an immidiate, physical "trigger", transforms into political emotions, the processing and meaning-making of this trigger, in teaching and learning situations. Drawing on the works of Mouffe, among others, the authors develop a "political moment model". The model, though difficult to condense, describes the process from a poignant experience of the political (an immidiate emotionally caused bodily change), through response, meaning making and finally, an actual or potential desicion in a political question. The authors argue that the model may be useful in "analyzing moments where students' deal with unpredictable, unfixed, unstructured and non-intentional bodily sensations and transform those bodily sensations into political emotions in teaching and learning settings." (Håkansson & Östman, 2019, p. 596), and further, may be useful for practitioners in planning of teaching activities.

In a contribution directed towards practitioners, Tryggvason and Mårdh (2019) discuss two ways to approach political emotions in the classroom in sustainability teaching and learning. Working from the agonist position that students' emotions towards sustainability issues is important in their engagement with them, they discuss

the strategies of simplification and circulation as a way of teaching with and through political emotions. Simplification, the authors point out, does not relate to non-reflectiveness or banality, but rather a strategy consisting of making conflicts clear: drawing lines between political positions and equalizing sides of an issue to simplify the complexity of an issue. This strategy may aid in facilitating political emotions in the classroom, and dissuade indifference. Circulation, on the other hand, comes into hand when political emotions are already in play, and is a strategy for maintaining them. Circulation, briefly, consists of confirmative and orientation changing moves, and seeks to prolong student engagement in this way, by either offering a narrative to confirm the students' discourse, or by demystifying an object of emotion (in sustainability discussions, for example meat consumption).

The theme in the analysis that yielded the most studies in the sample was transdisciplinary, holistic and collaborative approaches to ESD. Borg et al. (2012) employed a survey of 3229 teachers in different disciplines to investigate discipline-bound barriers to implementing ESD into their teaching. Their findings suggested that while science teachers largely focused on the "fact-based tradition" of ESD, social science teachers took to a pluralistic approach to a much larger degree, that is, ESD with an emphasis on different perspectives, views and values (Borg et al., 2012, p. 188, 196). In another teacher-centered comparative study, Sund and Gericke (2020) (as well as Sund et al., 2020) similarly found differences in ESD outcomes between teachers of different discipline backgrounds. The authors investigated teachers' view of their contribution to ESD and found that language teachers stressed communication and identity-making, science teachers focused on scientific aspects of SD, and social science teachers the social dimensions. Sund and Gericke (2020) builds on the large-scale study of Borg et al. (2012) and argues that though the teachers stress different aspects of SD, these are complimentary, and lays the groundwork for cross-discipline collaboration. Nordén (2018) investigates interdisciplinary ESD. In an interview study of teachers' experiences with collaborative ESD, she finds that, while motivation for collaboration was high, "Diverging perceptions of the central concepts and principles of ESD affected conditions for transdisciplinary teaching, as well as the different perceptions of their own role in the project", echoing findings from Borg et al. (2012), and standing in opposition to Sund and Gericke (2020) (Nordén, 2018, p. 672).

Jegstad and Ryen (2020), in a comparative study of Norwegian science and social science curriculum, found, pointing to Borg et al. (2012), that the respective curricula emphasize different aspects of SD, but goes on to argue that SD is understood too narrowly in the material, and that the dimensions of SD are separated, rather than integrated, perhaps avoiding the social studies subject prospects in teaching SD holistically. Munkebye et al. (2020) investigated how subjects are combined in ESD curriculum units, and found that in 71% of units, social studies were present. Demant-Poort and Berger (2021), in a study of Greenlandic pre-service teachers attitudes towards a holistic approach to ESD, found that many felt that the topic was not taught to a satisfactory degree in their program, and that a majority agreed that SD should be a topic in all subjects.

This last group of studies present reasonably united findings, with several building upon each other, and with Borg et al. (2012) being a pioneering work. An overarching conclusion of some of these studies is that different subjects stress different aspects of SD. It is argued by some that this divide may be useful in fostering cross-curricular collaboration.

Identifying an agenda for further research

In an emerging research field, the knowledge gaps are practically unlimited, as well as hard to discern concretely. An initial comment to the results of this literature review is that ESD in social science didactics is an understudied field, with a general need for more research across topics both illuminated in this review and found beyond it. However, the thematic analysis conducted above shows some quantitative differences between the identified themes and methodological approaches and may offer useful insight in scoping out a research agenda. Transdisciplinary approaches and pluralism emerge as the most common themes of research, while norm-critical perspectives and ESD in geography is found on the other end of this spectrum. However, with the exception of transdisciplinary and holistic approaches, which is somewhat consistent in approach and findings, the studies within each category differ significantly in aims and scope.

Jensen and Schnack (1997), in an article discussing the action competence approach to ESD, suggests four areas for further research on this topic: action competence's relation to school subjects, the relation between action (in an educational setting) and action competence, the distinction between action and habit and the role of collective experience for individual action. Despite being over two decades old, the way forward, as conceptualized by Jensen and Schnack, is largely unexplored, at the very least in the sample of this study. The contribution closest to both their first, second and third suggestion, and categorized under the action competence theme in the analysis above, is Sæther (2017), which focuses on students' reflections on their habits and actions relating to sustainability. It could be argued that the project these students took part in aimed at facilitating action experience, and Sæther ties the student output to their view of themselves as democratic participators. Sæthers discussion of individual and structural change can to some extent be understood within Jensen and Schnacks divide between action and habit, and their understanding of action competence as something universal, and not specific. Cheah and Huang (2019) may be read within this frame as well. Their study investigated the relationship between school environmental citizenship education practices and students' environmental citizenship. Environmental citizenship education, in this case, was operationalized through survey items directed at teachers and school leaders which to some degree contained action-oriented teaching. However, the compound variables in their analysis are perhaps broader than would be desirable, should one want to investigate classroom actions and students' action competence.

Some of the theoretical contributions to the field found in the sample of this study point to outsets that are yet to be explored in the samples' empirical works. Mogensen and Schnack (2010) argue for an evaluative approach to action competence education in ESD that focuses on teaching, rather than learning, and offer key factors in doing so. While there has, as was discussed above, been conducted empirical studies centered around action competence, these are tied to student outcomes, showing that there may be a need for research on how and if teachers relate to the approach, and the quality of their teaching. There are examples of these kinds of gaps in other categories of the analysis as well. Håkansson and Östman's (2019) political moment model offer a theoretical frame for better understanding political emotions in the classroom which is currently yet to be utilized, and Tryggvason and Öhman's (2019) discussion on approaches to pluralistic sustainability education, in the context of its category in the analysis, sheds light on the fact that the discussion centered studies in the sample rely more on deliberation as a theoretical framework than agonism (Rudsberg & Öhman, 2015; Öhman & Öhman, 2013). As Håkansson and Östman (2019) presents a novel research tool in a reasonably recent study, the lack of use of this tool as of yet is understandable, however, Tryggvason and Öhman (2019) builds on the established literature on deliberation and agonism, and as such, perhaps more clearly illustrates this point.

These examples may be only one part of a larger gap in the Scandinavian research on ESD: while not completely absent from the sample, the present literature searches have yielded little research on what goes on in the classroom. While curricula, textbooks and student and teacher conceptions and attitudes are common case studies for the field, as shown in this study, fewer studies employ classroom situations in their research. This is a trend not only in ESD research, but, as Skjæveland (2020) and Harrie (2011) point to, also in Norwegian and Swedish social science didactics research more generally. Perhaps more teaching centered studies can aid in filling these knowledge gaps moving forward.

As a final reflection, the studies reviewed for this article illustrate and exemplify some common themes and dichotomies both in regards to social science education and ESD, such as conflict and consensus, us and them and individual and society. Öhman and Öhman (2013), in their investigation into discussion as a tool for learning, shows how discussion alone may create consensus, not necessarily organically, but as a result of the composition of groups and the lack of clear ground rules and guidelines. These results may be seen in context with discussions on deliberative democracy (e.g. Englund, 2010; Habermas, 1995, Tryggvason & Öhman, 2019), as well as critical pedagogy in the vein of Biesta (2011). Cheah and Huang (2019) and Sæther (2017) both investigate citizenship and action competence, with Sæther (2017) taking the more critical approach, not only employing environmental citizenship as a static variable, but rather analyzing the characteristics of students' citizenship. Her findings tie in with a larger discussion in the field: how is democracy in all its forms supposed to be taught, and what is the goal of democracy education? Education can never be objective, but at the same time, if we educate in accordance with present understandings of democracy, we will never capture its essence (Ross, 2017). Sæthers (2017) findings could be seen

in context with empirical contributions to citizenship education like Mathé (2016), who found students to have an understanding of democracy predominately through the liberal tradition, that is, democracy only within formal actions like voting, as opposed to more collectively oriented perspectives. Sæther (2017) and Mathé (2016) both find that students to a lesser degree take on a more collective or structural mindset to what is undeniably collective challenges, which invites discussion on the practices of (environmental) citizenship, at the very least in Norwegian education.

Conclusion

Throughout this article, I have reviewed a sample of the Scandinavian research on ESD in an attempt to both summarize it and identify ways forward for the field. The study shows an emerging field of research which encompasses a wide array of themes and approaches. The first realization to come from this process was that there are few studies that take on ESD explicitly through the lens of social science didactics. This alone points to a need for more research in the field. This holds perhaps especially true for Norwegian research, which finds itself in an education system which is presently implementing and evaluating its revised, more sustainability centered curriculum. Further, the small sample size gives uncertainties to the results of this study; while some trends are identified in the material, this may rapidly change as new articles join, and have already joined, the literature going forward.

Beginning with an account of the data and methods of the sample, the majority of the studies were qualitative, and used primarily documents and teachers interviews as data, though student perspectives were present as well. Though no weakness by itself, a focus on case studies and qualitative methods means fewer research findings are generalizable, and attempting to apply knowledge from the interview studies mentioned in this review to a representative sample may prove fruitful. Another insight from this mapping was that data from both primary school and teacher education programs was in the minority, with secondary school students, teachers and curricula being the most common data sources in the sample. Further, the majority of studies related to primary school used curricula and textbooks as data material, which may be a case for a strengthening of empirical research at this education level. As ESD is further implemented into the curricula, and expectations on teachers follow this change, research on how teacher education programs address ESD will be crucial as well.

The thematic analysis of the studies' research topics shows that there is heterogeneity in the field, and that some of the identified themes in the sample have been given less attention than others. Additionally, theoretical contributions to several different themes illuminate research potential that is yet to be taken advantage of. Finally, I have argued that there is a lack of research on teaching practices. While there are studies in the sample that both exemplify and investigate teaching methods, these are in the minority. A better understanding of teaching approaches and practices to ESD may prove useful in expanding this literature as it relates to social science didactics, to practitioner and to teacher educators.

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