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Growing to thrive or growing to die?

Analysing high-school students' perspectives on the relationship
between economic growth and environmental sustainability

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Bachelor Thesis: UTVK03
15 hp Spring Semester 2023
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Abstract

How and what we should teach children about sustainability, in relation to our current economic system, has become the cornerstone of the debate on Education for Sustainable Development (ESD). This debate takes place in conjunction with a much broader debate on the concept of sustainable development itself, where the role of economic growth is both questioned and supported, seen as either a necessary support for sustainability or as a barrier to truly sustainable societies. The aim of this study is to understand how Finnish and Swedish high-school students view the role of economic growth in relation to environmental sustainability, as a means to explore the diversity of viewpoints brought forward by students. Such findings are important for shaping an education that fosters critical thinking and inclusive deliberation amongst students who hold different viewpoints. The present study utilises a mixed-methods approach, where the perspectives of 14 students are investigated through a small quantitative questionnaire, in conjunction with qualitative semi-structured interviews. The analysis builds upon previous studies of students' perspectives on growth in sustainable development, while adding in notions of ecological modernisation, green growth and degrowth, as a theoretical tool to map out the spectrum of arguments and perspectives presented by the students. The results indicate that the students express a large diversity of different arguments on the relationship between economic growth and sustainable development, and that both pro-growth notions and more critical perspectives are prevalent. The implications and results of these findings for learning and teaching are discussed at the end.

Keywords: Education for Sustainable Development, Sustainable Development, Degrowth, Ecological Modernization, Economic growth, Education

Word Count: 13 869

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1. Introduction

“Inclusive green growth is *the* pathway to sustainable development”

(World Bank, 2012, p. 11).

“Sustainable development depoliticizes genuine political antagonisms about the kind of future one wants to inhabit; it renders environmental problems technical, promising win-win solutions and the (impossible) goal of perpetuating development without harming the environment.” (Kallis, Demaria & D’Alisa, 2018, p. 36)

These two quotes encapsulate two ends of the spectrum of a much broader debate on the purpose and promises of sustainable development (SD) as a global agenda. Both the proponents and the critics of SD recognize that economic growth has driven environmental degradation and has caused rapid decrease of natural resources. Yet, there exists various perspectives and arguments on what the best path forward is, and whether economic growth can ever lead the way to an environmentally sustainable society. Whereas the global Sustainable Development Goals (SDGs) merge economic growth with environmental- and social sustainability, there is a growing movement of scholars and activists arguing that continued economic growth can never be sustainable for neither the environment nor for social equality (see eg. Hickel, 2020; Kallis, Demaria & D’Alisa, 2018; Latouche, 2009).

Alongside this debate on the desirability and feasibility of growth-driven SD, education has been given a major role in the policies and strategies for SD. The faith in education as the remedy for a better world permeates most development agendas and international frameworks, where education is recognized as a crucial tool for increasing the type of skills and knowledge needed to foster sustainable societies (UN, 2023a). ‘Education for Sustainable Development’ (ESD) is an educational framework promoted by the UN, as an approach to educate students of all ages on topics related to sustainability. ESD is expected to help learners “acquire the knowledge, skills, values and attitudes needed for promoting sustainable development” and to “provide learners with the opportunity to navigate the required balancing acts with holistic and transformational approaches” (UNESCO, 2020, p. 22 & 16). A holistic approach - that connects the social-, economic-, and environmental

dimensions of SD - is often advocated as a tool to encourage students' understanding of the complexity of sustainability issues (UNESCO, 2014).

But in the same way that SD has been subject to criticism, ESD is also a disputed tool for fostering sustainable societies. Similar to the criticism posed towards SD's objectives to consolidate growth and sustainability, there is an ongoing debate on what ESD should or should not teach students. A prevalent argument posed by critics has been that ESD is permeated by a neoliberal ideology, where education solely reproduces and upholds current economic and political structures (Berryman & Sauv , 2016; Huckle & Wals, 2015; Sumner, 2008). Several authors have condemned ESD for being limited by a growth-oriented conceptualization of sustainability that portrays continued economic growth as the main remedy to environmental degradation (Jickling & Wals, 2008; Kopnina, 2012). In addition, ESD has been criticised for limiting students' opportunities to envision alternative economic structures or 'real' transformation (Papenfuss et. al, 2019). These arguments link to the much wider debate on whether growth and sustainability can ever be compatible, and what a truly sustainable society should look like.

Yet, students' own understanding of the relationship between growth and sustainability has not received as much attention from research (see eg. Berglund & Gericke, 2018, 2022;  hman &  hman 2012). As such, the potential of ESD to illustrate and discuss these controversies requires further exploration. This is a crucial topic of focus, since education plays a significant role in determining our attitudes and perceptions of the world around us, while shaping how we perceive our role and degree of responsibility towards social and environmental issues (Gough, 1991). Early adolescence has been shown to be the time when people are most receptive to forming positive attitudes towards sustainability solutions, while being an age where individuals begin to consider sustainability issues in a deeper and more complex way (Svetina et. al, 2013). Therefore it is of particular interest to better understand how students of high-school age perceive and reason on the relationship between growth and sustainability. This age-group is also interesting when considering that many adolescents today are engaged in various movements working with environmental- and climate issues. As such the age-group is likely to present a wide array of different opinions and assumptions, shaped by one's involvement with the issue.

A large share of the existing research on students' perceptions of SD have been conducted in Finland and Sweden (see eg. Berglund & Gericke, 2016, 2018, 2022; Manni, Sporre & Ottander, 2012; Offerman, 2016; Raatevaara, 2017). Both Finland and Sweden are particularly interesting from an ESD-perspective: both countries are frequently praised for their strong education systems, and tend to score high in assessments of student learning outcomes (see eg. OECD, 2018). At the same time Finland and Sweden both rank high in their sustainability efforts and environmental policy making (see eg. MIT Technology Review, 2022; EPI, 2022). Both countries have also included notions of sustainable development into their national education curricula (Skolverket, 2023; Opetushallitus, 2019). As such, students from Finland and Sweden make an interesting group to study in terms of different perspectives on the role of economic growth for environmental sustainability. Considering the high level of education, and the conscious political environmental efforts, it is of great significance to understand how the students themselves understand and argue on topics related to SD, and what type of viewpoints are present amongst the students.

There is a wide array of studies coming from Sweden and Finland, looking at students' level of familiarity with SD, as well as students' capacity to understand the relationships between the different dimensions of SD. A common finding is that students struggle to explain the relationship between economic practices and environmental systems, or that students tend to showcase conflicting arguments on how the two are interlinked (see eg. Berglund, Gericke & Rundgren, 2014). Yet, little research has analysed the qualitative aspects of the different perspectives and arguments brought forward by the students, and how students think and reason in regards to the role of economic growth in SD. Such findings could shed light on the different standpoints taken by students, and can be used to support an education that recognizes and deals with the conflicting viewpoints found amongst different actors and individuals.

1.1 Aim and Research Questions

Based on interviews with 14 high-school students in Finland and Sweden, this study will analyse how students view the relationship between economic growth and environmental sustainability, and what type of arguments students use to explain the relationship. The study uses a mixed methods approach, combining data from a short quantitative survey with

responses from qualitative semi-structured interviews. The purpose of this research is to get insights of the types of arguments and reasonings that students use to discuss the effects of economic growth on sustainability, and how these relate to contemporary theories on the role of economic growth in SD. As such, the study does not seek to provide an overview of all the viewpoints held by a large sample of students, but instead aims to generate deeper insights into the different arguments and nuances that may shape students' perspectives of economic growth.

The analysis will be used to discuss the current state of ESD, and to propose suggestions for how to further develop education so that it caters for differences in viewpoints amongst students. By understanding the variety of viewpoints and arguments held by students, the education can be better structured to help students deal with conflicts of interest both within and outside the classroom - a crucial skill for tackling contemporary challenges of sustainability.

The following research questions will guide the study:

What type of relationships do students suggest exist between economic growth and environmental sustainability?

What arguments are being used to either support or criticise the role of economic growth in relation to environmental sustainability?

2. Background

In order to understand the various perspectives and arguments surrounding ESD, it is first important to briefly outline the broader debate regarding Sustainable Development as a concept - as this directly translates to the debate on ESD. This is followed by an overview of Education for Sustainable Development as a concept and practice, both globally and nationally.

2.1 The debate on Sustainable Development

There is no ‘one agreed concept’ of Sustainable Development, and due to its vagueness it is left open to many different interpretations and agendas (Giovannoni & Fabietti, 2014; Barbosa, Drach & Corbella, 2014). Even if the term Sustainable Development has been mentioned in policy documents since the 1970s, the ‘birth’ of the concept is often traced back to the ‘Brundtland definition’, outlined in *Our Common Future* in 1987 (Giovannoni & Fabietti, 2014). There, Sustainable Development is defined as: “development that meets the needs of the present without compromising the ability of future generations to meet their own needs” (The World Commission on Environment and Development, 1987, p. 43). The Brundtland definition thereby links socio-economic dimensions of development to environmental dimensions. Yet, many authors have asserted that the Brundtland definition defines SD in a rather vague way - leaving the concept open for many interpretations and conceptualisations (Giddings, Hopwood & O’Brien, 2002). This can for example be seen in how the term has changed and developed through time. In the late 1980s and early 1990s, conceptualizations of SD tended to focus mainly on the man-environment relationship, and how the human use of resources affects the environment (Giovannoni & Fabietti, 2014). In recent years, more social factors, such as equity and social sustainability, have been included in the definitions of the term (Giovannoni & Fabietti, 2014). Today, the concept of SD is considered to consist of three dimensions: the ecological-, social- and economic dimension (UN, 2023b)

Today there are many different approaches to sustainable development, which all tend to recognize different problems and solutions. One commonly used distinction for the different approaches to sustainable development is *weak sustainability* versus *strong sustainability* (Neumayer, 2013). Weak sustainability is characterised by a faith in technology as interchangeable with natural capital, where technological solutions are seen as capable of solving human-made environmental degradation. Strong sustainability on the other hand recognizes that human capital can not replace all natural processes that are vital for human existence (Neumayer, 2013, p. 21-23).

Hopwood, Mellor & O'Brien (2005), on the other hand, have mapped out several different contemporary approaches to SD, ranging from those that support the status quo of the current economic and political system, to approaches which recognize the need for a complete transformation of society. According to the authors, contemporary approaches to SD can be divided into three main categories: status-quo, reformative and transformative. The status-quo perspective is seen as the most dominant approach within governments and decision-makers, as it recognizes the need for change but supports making minor changes *within* the prevalent system. The reformist approach is more critical to current policies, and believes a lack of information and resources to be the real barrier to sustainability. The transformative approach goes further and recognizes that environmental problems are rooted in fundamental features of society, and therefore a deep transformation of our current economic and political system is needed.

The different approaches and views on SD as a concept are also prevalent in the debate and research on ESD. This poses some challenges to ESD as an educational framework, since the very concept of SD, on which the education is based, is left open to many interpretations. As Jickling (1994, p.5) argues: "It therefore seems unlikely that I should want anyone to educate my children for sustainable development when it is not clear what on earth it is that they are aiming for".

2.2 Education for Sustainable Development

The role of education in promoting sustainability has been discussed since the 1960s, as part of various international frameworks and policies on the environment (Palmer, 2008, pp. 3-8). Initially the focus was on environmental education (EE), and in raising awareness for environmental issues and the need for conservation efforts (Kopnina, 2012). During the UN conference on Human Environment in Stockholm in 1971, environmental education received special focus in the discussions, and the conference is often seen as the start of a global recognition and interest in EE (Palmer, 2008, p. 7).

After the UNCED Earth Summit in Rio de Janeiro in 1992, the concept of 'environmental education' transformed into 'Education for Sustainable Development' (Wals & Kieft, 2010). The focus in education shifted from environmental awareness and conservation efforts, to

combining economic development with environmental sustainability (Wals & Kieft, 2010). Chapter 36 of Agenda 21 (the product of UNCED) highlights education as a crucial factor in the promotion of SD, by stating that: “Education is critical for promoting sustainable development and improving the capacity of the people to address environment and development issues.” (Agenda 21, 1992, 36.1). The importance of educating for sustainable development was further emphasised during the UN Decade of Education for Sustainable Development, in 2005-2014 (UNESCO, 2022).

Education has been shown to play a large role in shaping the public’s understanding and perception of the term ‘Sustainable Development’ (eg. Pauw et al, 2015; O’Flaherty & Liddy, 2018; Didham & Ofei-Manu, 2015). Most of what we know about the environment, and how we conceptualise the relationships between humans and the environment is shaped during our education, making it an important part in determining how we perceive our role in sustainable development (Gough, 1991). Education therefore carries direct relevance to contemporary development practice and global sustainability challenges, by shaping the way people consider and interact with these issues.

2.2.1 ESD in Sweden

The Swedish national curricula for preschool, compulsory school and high-school, all include notions of environmental- and sustainability education (Skolverket, 2023). Sustainable development is not included as a separate subject in the curricula, instead aspects of environmental education and social sustainability are included throughout the overall framework of the education plan (Skolverket, 2023). Whereas there is no direct mention of the SDGs or Agenda 2030 in the curriculum, there are direct connections to topics such as democracy, equality and sustainable development (Skolverket, 2023). For example the Swedish national curriculum for high-school states that: “The education should illustrate how societal functions and our way of living and working can be adapted to create sustainable development” (Skolverket, 2022, p. 4, own translation).

Sweden also has several national projects and certifications for schools working with sustainability. One example is the ‘Green Flag’- certification for schools, which is part of the international network ‘Eco-Schools’ (Håll Sverige Rent, 2023a). The certification is given to schools who systematically and structurally work with processes of sustainable development.

Currently there are around 1000 schools that are part of the project (Håll Sverige Rent, 2023b). Several NGOs, such as the World Wild Life Foundation (WWF) have also created their own frameworks for promoting ESD within Sweden (WWF, 2023).

2.2.2 ESD in Finland

Similarly to Sweden, the Finnish national curricula for preschool, compulsory school and high-school, all include notions of sustainable development. For example the high-school curriculum states that the education is set to support a positive attitude towards the future, and to help students make ‘sustainable choices’ (Opetushallitus, 2023). Unlike the Swedish curriculum, the Finnish high-school curriculum directly mentions Agenda 2030 and the SDGs (Opetushallitus, 2023). The Finnish curriculum also elaborates on all three dimensions of sustainable development, including the economic dimension. For example it states that: “The high-school education should bring forward the necessity of a sustainable lifestyle as well as build a knowledge base for an economy that supports the environment and fosters the well-being of citizens” (Opetushallitus, 2023, p. 16, own translation).

Finland also has a wide array of different national projects aimed to promote ESD. For example, Finland has its own ‘Green-Flag’-certification, also based on the international framework for Eco-Schools (Vihreä Lippu, 2023).

3. Literature Review

During and after the UN Decade for Education for Sustainable Development (UNDESD) 2005-2014, the goals and results of ESD have been subjected to various studies, critical inquiry and commentary. Prevalent focus-areas in the research on ESD include: national and international policies on ESD (eg. Berryman & Sauv , 2013; Sauv , Brunelle & Berryman, 2005; Huckle & Wals, 2015), critical analysis of the ideological underpinnings of ESD (eg. Jickling & Wals, 2008; Sumner, 2008; Kopnina, 2012) as well as studies of teacher/student perceptions of SD (eg. Borg et. al, 2013; Manni, Sporre & Ottander, 2013; Berglund & Gericke, 2016).

A large share of the research has focused on how ESD operationalises the relationship between the three different dimensions of sustainable development: the economic, environmental and social dimension, and what effect this has on students' understanding of SD. As Wals (2009) notes in an evaluation of UNDESD policies and provisions, the main focus of the program and related research has been on the interconnections of the different dimensions of SD and how these should be taught to students.

3.1 Holism or dissonance: the role of economic growth in ESD

Various authors have condemned ESD for failing to discuss the potential conflicts and dissonance between the different dimensions of SD. For example, Sumner (2008) demonstrates how frameworks for ESD tend to portray the environment as a resource for economic development, teaching students to view the natural world merely as a source for profit. As such, Sumner argues that the curriculum proposed for ESD lacks an understanding of the potential conflicts between economic growth and environmental sustainability, and thus fails to foster critical thinking and transformative practice. Similarly, Berryman & Sauvé (2016) highlight the tendency of ESD to 'force' a consensus on an ambiguous term - instead of including conflicts, dissonance, differences and critical thinking into the education scheme. The authors call for the integration of more alternative and radical perspectives into the ESD framework, such as degrowth or ecodevelopment. Such alternative approaches could help students see the current economic system from a new perspective, yielding skills for critical analysis.

Several authors have also criticised ESD for being based on a *holistic* conceptualisation of SD, which hides any potential conflicts between the economic and environmental dimension. Kopnina (2012) argues that by using a holistic approach to teach sustainable development, the environmental dimension gets sidelined on the behalf of the social and economic ones. Huckle & Wals (2015) draw similar conclusions, based on their analysis of some of the key documents produced as part of the UNDESD. The authors conclude that all of the documents are grounded in a holistic and harmonious understanding of SD, which lacks any insight or mention of the potential structural causes of unsustainable development, or how economic growth may relate to environmental degradation. In the documents targeted specifically at youth, individual actions are privileged over public and collective action. As such, the

documents studied by the authors seek to find solutions *within* the norms of the current political economy, and fail to link environmental degradation to systematic barriers of change. Even where tensions between capitalism and sustainable development were signalled in the texts, there was no mention of alternative approaches or suggestions of more radical transformation.

Several authors have further questioned having one overarching global agenda for sustainable development education, since it risks promoting a singular view of how sustainable development *should* look like. One of the most cited criticisms to ESD is a paper published by Jickling & Wals (2008), in which the authors condemn ESD to be a product and a carrier of globalising forces, seeking to promote economic interests as the main priority. The authors remain cautious to the fact that ESD policies are largely governed by global IGOs such as the World Bank, resulting in a 'one size fits all' approach. The authors further argue that the mainstreamed conceptualisation of SD takes economic growth as a prerequisite for environmental sustainability, without reflecting on the potential conflicts between growth and the environment. Sauvé, Brunelle & Berryman (2005) have come to similar conclusions, when analysing international- and national policy documents related to EE and ESD through content and discourse analysis. One major trend that the authors recognized was that education is portrayed as an instrument for predetermined goals, based on transmissive learning approaches. In most documents analysed, there was a clear framing of the environment as a pool of resources to be protected through better practices of management. In all of the policies, economic growth was seen as the first condition for sustainable development. As such, the policies lacked any critical inquiry into the causes and consequences of globalisation, or the socio-environmental costs of the current system.

Some authors on the other hand have highlighted the variety that already exists within ESD, arguing that sustainability education today *does* leave space for alternative views and conceptualisations. For example, Bengtsson (2016) disagrees with the claim that ESD is a hegemonic vessel, based on top-down prescribed neoliberal ideals. Through a Vietnamese case-study, Bengtsson demonstrates how each country and institution is likely to reshape and alter ESD to fit their specific discourses and aims. As such there may be a *predominant* global discourse and agenda of ESD, but this does not mean that one conceptualisation of SD *dominates* all others. Instead, there exists a variety of perspectives and discourses within the ESD framework. Berryman & Sauvé (2016) have responded to Bengtsson's assertions, by

claiming that even if alternative views exist within the ESD frameworks, the resistance is still limited to a resourcist and economic understanding of SD.

3.3 Student perceptions of SD and the role of economic growth

Several studies that analyse students' perceptions of sustainable development have been conducted in both Finland and Sweden. These studies cover students from various age groups and different levels of education. Similar to the research on ESD frameworks and policies, outlined in the previous section, much of the student centred research has focused on the different dimensions of SD. Yet, very few studies have focused specifically on the economic dimension of SD, or the students' perception of economic growth in relation to environmental sustainability (see Berglund & Gericke, 2018; 2022). Instead, several studies have looked at students' views on the relationships between all three dimensions of SD (the ecological-, social- and economic dimensions). These studies can give some insight into how well students are able to discuss and evaluate the role of economic growth.

Several Swedish studies that have analysed students' perceptions of the different dimensions of SD, suggest that the environmental- and social dimensions of SD are the easiest for students to understand and integrate. For example, Berglund & Gericke (2016) developed a survey that was answered by over 600 Swedish upper secondary students, which sought to document students' views on the three different dimensions of SD. The results indicated that students' showed the greatest level of understanding and consensus on questions relating to the social- and environmental dimensions of sustainability. The most uncertainty was found in answers relating to the economic dimension, which also received the most diverse range answers. The results thus suggest that the role of the economic dimensions remains more ambiguous to students, compared to the other dimensions. Similar findings were concluded from a nation-wide study by Berglund, Gericke & Rundgren (2014), that analysed the sustainability consciousness of Swedish 12th grade students. Compared to questions on the social- and environmental dimensions, the economic dimension received less responses from students. Questions relating to the economic dimension of SD also received the greatest variability in answers. This suggests that students find it difficult to discuss the economic aspects of SD, and that there may be discrepancies in how the economic dimension is included into ESD.

Manni, Sporre & Ottander (2012) indicate similar findings, in a study on Swedish 10-12 year old students' understanding of SD. In this study, students had the least amount of difficulty answering questions regarding the ecological aspects of SD, as these questions had the highest response rate. Most students in the study were able to discuss the role of the economic dimension in simple terms and were able to explain how it could relate to the other dimensions of SD. Yet when asked about the relationship of all three dimensions of SD, fewer students were able to answer, suggesting that many students find it difficult to relate the different dimensions of SD to each other, including the economic one. Similar findings have been obtained in Finland, where Offerman (2016) shows that 4th grade students are able to understand all three dimensions of SD, including the economic one. However, the examples given by the students on the economic dimension are all limited to processes taking place within the school, or based on individual lifestyle choices such as shopping second hand. As such the results do not signify an understanding of larger economic structures and systems, and how these could impact SD.

Other studies have also pointed towards the lack of system thinking amongst students, and have shown that students find it difficult to analyse sustainability within the context of larger systems. For example, in Raatevaara's (2017) study of Finnish 8th grade students' perceptions of sustainable actions, almost all of them referred to small-scale individual actions such as recycling or choosing the bike instead of the car. Similarly, in Korhonen's (2001) study of Finnish 9th grade students' views on sustainability, most students referred to individual consumption choices as a good way to promote sustainability. Students seem to struggle to give examples of larger societal processes and structures which may inhibit or foster sustainable development. The lack of examples that would involve larger societal changes could thus signify the lack of systems thinking amongst students. Hofman-Bergholm (2018) has highlighted this issue in Finland, by arguing that the Finnish educational system has failed to develop students' understanding of how humans affect and depend on nature in more systematic ways. Hofman-Bergholm calls for the implementation of more systems thinking into teacher training, so that future teachers can be equipped to teach and discuss sustainability through deeper and more critical deliberations with the students.

Whereas most studies have touched upon the economic dimension indirectly, Berglund & Gericke (2018) have looked specifically at students' perceptions of economic growth and economic development in relation to SD. Over 600 students from 15 schools across Sweden

responded to a questionnaire probing their views on these relationships. More than half of the students agreed that economic growth and economic development are necessary for SD. This group of students did not think that economic growth posed any threat for environmental sustainability, or that the two dimensions could be in conflict with each other. A third of the students differentiated between economic *growth* and *development*, arguing that growth can pose a threat to the other dimensions of SD, but that development is necessary. A fifth of the students recognized to various degrees that economic growth and economic development as non-compatible with the goal of environmental and/or social sustainability. The study thus shows how students display a variety of perspectives on how the economic dimension relates to other aspects of SD.

Also other authors' have shown that the majority of students see economic growth and environmental sustainability as compatible. For example, a study by Öhman & Öhman (2012) looked at group projects conducted by Swedish high-school students, to determine whether the students had a harmony- or conflict-driven view of sustainable development. In this study, a harmonious view meant that students viewed the different dimensions of SD as compatible with each other. The study found that most students included all three dimensions of SD in their presentations, and spoke about these in a 'harmonised' manner, excluding any potential conflict between the dimensions. The students suggested a conflict-free relationship between the economic- and environmental dimensions of SD, arguing that technology and the 'right market' could support environmental sustainability, largely in-line with ideas of ecological modernization. In a more recent study by Berglund & Gericke (2022), the authors aim to understand the underlying arguments behind such different assumptions amongst students, by analysing group discussions between Swedish high-school students. In this study, students were grouped into discussions with other students who expressed similar opinions on the relationship between economic growth and sustainable development. The study showed how the various groups all showcased very different arguments and motivations to why growth may either harm or benefit SD. As such, the authors conclude that we need more space for students to counter different viewpoints, and to argue with different perspectives relating to the role of economic factors in SD, as there exists many opinions and viewpoints amongst the students.

The majority of the existing literature on students' perceptions of the economic dimensions of SD are based on nationwide questionnaires, or other quantitative inquiries. Yet, little research

has looked deeper into the qualitative aspects of students' perspectives, and few studies have analysed why students perceive the role of economic growth in different ways, and what type of arguments are used to support these various claims. Several authors have called for more research on the diversity of viewpoints amongst students, and a deeper understanding of how this diversity can be used to foster transformational sustainability education (Berglund & Gericke, 2018; Öhman & Öhman, 2012).

4. Theoretical Framework

The quantitative part of this study will be theory-driven, where the quantitative analysis will be used to answer the first research question: *what type of relationships do students suggest exist between economic growth and environmental sustainability?*. This part of the analysis is guided by a pre-set theoretical model (see section 4.1). This will help link the study to previous research findings, and to map out major differences in students' answers.

The second part of the analysis, the qualitative part, relates to the second research question: *what arguments are being used to either support or criticise the role of economic growth in relation to environmental sustainability?*. This part will be analysed through a quasi-deductive use of theory. This means that the data will first be analysed independently, through inductive coding, after which theory is used to add theoretical depth to the analysis (Braun & Clarke, 2022, p. 236). The selected theories (see section 4.2) are seen to represent two opposing ends of a spectrum of arguments on how economic growth and environmental sustainability interrelate. These theories will help to understand the underlying values and reasonings behind the students' arguments, while linking the students' perspectives to a wider ideological debate on the topic.

4.1 Berglund & Gericke's four clusters

This study will build upon the aforementioned study by Berglund & Gericke (2018), titled 'Exploring the Role of the Economy in Young Adults Understanding of Sustainable Development' (see section 3.3). In this study, 638 upper-secondary students answered a questionnaire about their views on the relationships between economic growth, economic development and sustainable development. The students were asked whether economic

growth and economic development respectively are necessary for sustainable development, and/or whether they thought that economic growth is a threat to sustainable development. The authors then conducted a cluster analysis to identify four different clusters of students that differed in their views on the economy in relation to sustainable development: the un-differentiating positive group (57%), the nuanced ambivalent group (30%), the two-way convinced group (5%) and the critical-group (8%). See Table 1 for a summary of the characteristics of each group.

	Role of economic growth	Role of economic development
Un-differentiating positive	Agrees to a high extent that economic growth is necessary for SD Economic growth is not seen as a threat to SD	Considers economic development to be even more important for SD than economic development
Nuanced ambivalent	Neither disagrees nor agrees that economic growth is necessary for SD Economic growth is seen as a threat to SD	Considers economic development to be necessary for SD
Two-way convinced	Considers economic growth to be both necessary and a threat to SD	Considers economic development to be necessary for SD
Critical	Disagrees that economic growth is necessary for SD Sees economic growth as a threat for SD	Disagrees that economic development is necessary for SD

Table 1: Berglund & Gericke's (2018) four clusters

I will use the cluster-framework developed by Berglund & Gericke (2018) when analysing the data derived from the quantitative part of the research, where each student is grouped into one of Berglund & Gericke's four clusters. Similarly to Berglund & Gericke's study, each student in my sample answered a survey with three likert-scale questions, all relating to the relationship between economic growth and sustainable development (see Appendix A). The questions were the same ones used by Berglund & Gericke, but the analysis and categorisation of the responses is different than in the original study. Unlike Berglund &

Gericke, this study is not limited to a quantitative exploration of perspectives, but also includes a large qualitative section. As such this study is also a direct response to the aforementioned authors' request for more qualitative inquiries into the different perceptions and beliefs held by the students in each cluster (Berglund & Gericke, 2018).

The cluster framework aids in answering my first research question: What type of relationships do students suggest exist between economic growth/development and environmental sustainability? I believe this framework to be a useful tool in mapping out the main differences in students' perspectives on the relationship between the economy and sustainable development, based on previous findings.

The four different clusters do not explain *why* students respond in specific ways, nor do they illustrate the underlying assumptions and understandings that shape these perspectives. This limitation is also acknowledged by Berglund & Gericke (2018) in their study, when they call out for future qualitative research that can delve deeper into the reasons behind the various perspectives. Thus my second research question and the second part of the theoretical framework is aimed at understanding the underlying qualitative arguments and reasonings that students express.

4.2 The role of growth in Sustainable Development

As mentioned previously, the notion of Sustainable Development is both a broad and a contested concept, subject to many different interpretations and perspectives (see section 2.1). A large share of the discussion on SD as a concept revolves around the role that economic factors play in sustainable development, and whether continued economic growth should be seen as a support or a barrier to sustainable societies.

The debate on SD includes a large spectrum of different ideologies and theories, with different perspectives on the role of growth in SD (see eg. the aforementioned study by Hopwood, Mellor & O'Brien, 2005, section 2.1). For the purpose of this study, I have chosen two prominent groups of theories that are often seen to contrast each other in their arguments: Ecological Modernisation/Green Growth and Degrowth. By including these two opposing theories in the analysis of my data, I will be able to discuss my results in relation to the broader debate on the role of growth in SD. These two theories will also help me identify the

main underlying assumptions and reasonings behind the students' arguments, by drawing parallels to the reasonings in these two theories. By using two opposing theories in the analysis, I will also be able to pinpoint and contrast the main differences in the students' viewpoints. While Berglund & Gericke's (2018) cluster model offers a good framework for categorising the students' different standpoints, the theories of Ecological Modernisation, Green growth and Degrowth will be supportive when analysing the different arguments that students use to advocate for their viewpoints.

4.2.1 Ecological Modernisation and Green Growth

The theory of Ecological Modernisation (EM) is an approach to sustainable development that has emerged from some of the most industrialised countries (Carter, 2018, p. 231). The EM approach moves away from an economy-versus-environment nexus, and instead sees the two as compatible. EM has its roots in the work of the social scientist Joseph Huber, who based the theory on his observations of Germany and the Netherlands in the late 1970s (Carter, 2018, 232; Dryzek, 2013, p. 167). Huber recognized how over time industrialised countries began to adopt more strategic and preventive approaches to environmental problems, based on policy-control and state incentives (Carter, 2018, 23).

EM has generally been used to refer to a technology- and innovation-oriented approach to environmental policy (Jänicke, 2008). The main assertions of EM are based on the idea that capitalism can be made more 'environmentally friendly', by focusing on transforming the nature of production through dematerialisation and by decoupling economic growth from the use of natural resources (Carter, 2018, p. 232). A core idea of EM is that 'pollution prevention pays', meaning that it is cheaper to have effective state policies that prevent pollution, rather than managing environmental problems after they have been created (Dryzek, 2013, p. 170). Governments are seen to have an important role in steering the direction of companies, by incentivising long-term environmental investments, while also being responsible to regulate environmental degradation such as pollution (Carter, 2018, p. 233). All of these propositions are based on the idea that the capitalist political economy can be made more environmentally sound, without requiring a new type of political-economic system (Dryzek, 2013, p. 170). Christoff (1996) has conceptualised this argument into two categories of EM: Weak economic modernisation, which puts emphasis on technological

solutions and technocratic policy making - and strong economic modernisation which considers more broad-ranging changes to society's institutional structures.

Green Growth is a theory that is closely related to EM and echoes many of its arguments and ideas (Carter, 2018, p. 232). Whereas EM is more centred on government incentives and policies for production, Green growth poses assertions on the role of economic growth and business advancement for sustainable development (Carter, 2018, p. 232). Green Growth has been the mode for IGOs such as the World Bank to incorporate SD into their policies (Dryzek, 2013, p. 152). For example, the World Bank defines Green Growth as “economic growth that is environmentally sustainable” (The World Bank, 2012, p. 30). In its core Green Growth is about making growth processes more resource-efficient, cleaner and more resilient - without slowing down the rate of growth (Hallegatte et. al, 2012). As such the approach aims for low-carbon growth, and believes in the decoupling of growth from environmental degradation (Carter, 2018, p. 242). Green growth also recognizes a healthy environment as a saving for the economy, based on the idea that environmental degradation is costly, and therefore ‘greener’ growth is beneficial for both the environment and businesses (Hallegatte et. al, 2012).

The driving idea for both EM and Green growth is that economic growth should and can be delinked from rising environmental stress (Dryzek, 2013, p. 167). As such continued economic growth is seen both as a prerequisite and a result of environmentally sound economic policies and activities. This idea can also be seen as a shaping force behind the SDGs, which promote the combination of sustained economic growth and environmental sustainability.

4.2.2 Degrowth

Degrowth is both a theory and social movement, which opposes the idea that continued economic growth can ever be socially- and environmentally sustainable (Kallis, 2010). Whereas EM and green growth are reformist in their character, degrowth takes a more transformational approach. In contrast to EM and Green growth, Degrowth does not support the structure of the current political economic system, and instead advocates for a society that serves completely new functions (D’Alisa, Demaria & Kallis, 2018). The two foundational theses of degrowth are based on the assertions that growth is uneconomic and unjust, and

that growth is ecologically unsustainable (D’Alisa, Demaria & Kallis, 2018). Degrowth connects several streams of thoughts, and brings together various visions for an alternative system. All of its various streams tend to share the common criticism of: growth, GDP, commodification and capitalism (D’Alisa, Demaria & Kallis, 2018).

Degrowth contends that growth in the past has correlated with environmental degradation, and therefore further growth should not be seen as a viable solution (Robra & Heikkurinen, 2020). Degrowth includes several arguments as to why green growth or green capitalism is insufficient for hindering environmental degradation or climate change. One common argument posed by degrowth scholars is that increased energy efficiency is unlikely to result in ‘greener’ growth, as more efficient production is inclined to result in rebound effects, where we consume even more since the production is made more efficient (Andreucci & McDonough, 2015; Martinez-Alier, 2015). Other scholars argue that even if the economy in theory could be decarbonized with the advancement of cleaner or more efficient technology, or through a shift to services, the needed rate of decarbonization is near to impossible to reach (D’Alisa, Demaria & Kallis, 2018). Many degrowthers argue that EM and Green Growth puts too much faith and emphasis on technology, as the only solution for reduced emissions and environmental degradation (Robra & Heikkurinen, 2019). Another important argument of degrowth is that current economic growth supports overconsumption in the Global North, at the expense of consumption in the Global South (D’Alisa, Demaria & Kallis, 2018).

Degrowth remains critical to the very idea of ‘development’, and as such is not eager to promote a ‘greener’ development like EM and Green Growth does, but instead advocates for a whole new conceptualization of development (Kallis, 2015). As a result, degrowth also remains critical to the conception of sustainable development, and steps away from the idea that current models of economic development is or ever can be environmentally sustainable (Martinez-Alier, 2015). For example, degrowth author Serge Latouche (2003) has condemned the concept of sustainable development to be an oxymoron that tries to bring together two incompatible processes. For Latouche (2003), the word ‘sustainable’ is only added as a superficial way to bring ecological concerns into the concept. As such, the SDGs are considered to lack the capacity for *transformative* change in how we organise our societies, while instead supporting the status-quo (Robra & Heikkurinen, 2019). Degrowth on

the other hand promotes new alternatives to current structures, for example: co-operatives, job guarantees, universal incomes and a relocalization of production (Kallis, 2010)

4.2.3 Reflections on theory

In summary, EM, Green Growth and Degrowth, all recognize that economic growth in the past has led to accelerating environmental degradation. Yet, the solutions proposed by these different theories are vastly different. Whereas degrowth-scholars push for a completely new economic system, based on the argument that economic growth can never be socially- or environmentally sustainable, EM/Green Growth argue that economic growth can benefit sustainability if managed the right way. As such, these two theories offer different arguments and viewpoints on the relationship between economic growth and SD.

These different standpoints will inform the analysis of the arguments posed by the students in this study. By relating the students' perceptions and ideas to the aforementioned theories, the analysis will be linked to a broader ideological debate, while the theories will also help to indicate the different underlying values behind the students' perspectives. It is however important to note that the mentioned theories only make up a fraction of the broad scope of perspectives and arguments that guide the debate on sustainable development. Yet, by being at two opposite sides of the spectrum, degrowth and green growth/EM are considered a suitable choice for a broad analysis of student arguments, by including perspectives from opposite standpoints.

5. Research Design and Methodology

This study is based on a mixed-methods approach, combining a smaller quantitative component with a larger qualitative component. The main source of data comes from semi-structured interviews, held both as group interviews and individual interviews, covering a sample of 14 high-school students. This data was analysed using *thematic analysis*. The quantitative part of the data was collected through a short questionnaire with the same sample of students, and is used to complement the findings from the thematic analysis.

5.1 Semi-structured interviews

The qualitative data for the research has been collected through both semi-structured group interviews and semi-structured individual interviews. In total 7 interviews were conducted, out of which 4 were group interviews (consisting of 2-4 participants) and 3 were individual interviews, covering a total sample of 14 individuals. 3 interviews were held in-person, and 4 interviews were held through video calls, using the platform Zoom. All interviews were conducted in the mother tongue of the participants, in either Swedish or Finnish.

I consider semi-structured interviews to be the most effective method for answering my research questions, as it is recognized as a good method to understand the attitudes and beliefs that research participants hold (Robson & McCartan, 2012, p. 286). As my research focuses on the arguments posed by students, as well as the underlying premises of these arguments, interviews were considered to be the most useful method to gather data. Semi-structured interviews are also beneficial for explorative research, as they allow for the researcher to adapt the interview process according to the topics and arguments brought forward by the participants (Robson & McCartan, 2012, p. 286).

Yet, it can be challenging to get insights into the underlying beliefs and attitudes of participants' arguments, which is why I chose to conduct my interviews as group interviews. Group interviews tend to yield more stimulated responses from the participants, as participants are likely to answer and respond to each others' arguments (Robson & McCartan, 2012, p. 298; Frey & Fontana, 1994). As my research focuses on a relatively abstract topic that the students may not have reflected on prior to the interview, the group setting can also aid in stimulating more thoughts than what would come up if participants were interviewed individually. Interviews in a group setting are also effective for revealing *variations* in participants' perspectives and attitudes - something that is one of the key focuses of my research (Frey & Fontana, 1994).

Another important reason for choosing the group interview is that I wanted the interview process to be enjoyable and valuable to my participants. Robson & McCartan (2012, p. 298) have highlighted how group interviews can be more enjoyable for the participants, as it allows for an engaging social activity, and may also contribute with new knowledge and insights to the participants. For me this was important both from an ethical perspective (see

section 5.6), but also as a tool to attract students to participate in the study, considering that there was no material compensation offered for participation. However, the group setting also causes some limitations to the study, in the case where the participants already know each other from before (see section 5.5 for further discussion on the limitations of the method).

5.2 Sampling

All the participants in the study were high-school students from Finland and Sweden, including students from two high-schools in Finland and from two high-schools in Sweden. These countries were chosen based on their strong history with implementing ESD into national education curricula, and based on the assumption that most students would have encountered the concept of SD in their education (see sections 2.2.1 and 2.2.2). All the participants were between the ages 17-19. The sample is based on *convenience* sampling, where an invite to participate was sent out to a large group of students, and everyone who accepted the invite were included in the study (Robson & McCartan, 2012, pp. 280-281). However, there was also a *purposive* element to the sampling, as I intentionally sent out a few of the invites to students belonging to extracurricular clubs that work with topics related to SD. As a result, the sample contains 8 students who are part of an extracurricular activity or club that works with issues of sustainable development. The remaining 6 students have not worked with SD through their extracurricular activities. This type of sampling was chosen since as mentioned in the introduction (see section 1.1), many young people today are engaged in various movements working with environmental- and climate issues, and as such the age-group is likely to include students with various degrees of familiarity with sustainable development. This diversity was considered when including youth from different SD-backgrounds into the sample.

The purpose of the sample is not to be generalizable for a whole population, but is instead intended to yield an explorative in-depth study into the different types of arguments that may be brought forward by students (see section 5.5 for further discussion on limitations). As the purpose of the research is to analyse the different arguments used to either support or criticise the role of economic growth in SD, a smaller sample was considered to yield a deeper and more elaborate analysis. Since the study focuses on aspects which have not yet received much research focus, the purpose of the analysis is to yield some indicative findings on the

topic. This study should thus be seen as an initial exploration of the qualitative aspects of students' perspectives on economic growth in relation to environmental sustainability.

5.3 Data Collection

The data was collected through two processes: a short quantitative questionnaire as well as qualitative interviews. Each interview was initiated by asking the students to fill in a short questionnaire, with three likert-scale questions, probing their views on the role of economic growth in relation to sustainable development (see Appendix A). The purpose of the questionnaire was twofold: Firstly, it functioned as a moment of reflection for each participant to think about the topic before starting the interview. This was especially important in the group interviews, as a way to make sure that each student had an opportunity to reflect on their own opinions before engaging in a discussion with others. Secondly, the questionnaire was used to map out how the students reflect the cluster framework by Berglund & Gericke's (2018) (see section 4.1). The questionnaire was based on the same questions that Berglund & Gericke (2018) used in their study, but this study has used a more simplified framework for grouping the responses into the four clusters (see Appendix C for an explanation of how students were divided into clusters based on their responses).

After the short questionnaire all students participated in a semi-structured interview, either individually or as a group. The interviews ranged from 20 to 45 minutes, depending on the amount of participants in each interview. The data from the interviews was then used for thematic analysis.

5.4 Data Analysis

The data collected during the interviews was analysed through *reflexive thematic analysis* (RTA), based on Braun & Clarke's (2022) framework. Each interview that I conducted was recorded, and then manually transcribed. The transcribed interviews were then used for developing, analysing and interpreting patterns in the dataset through a systematic process of coding.

I chose to use RTA as it is an effective method for analysing patterns of meaning and reasoning, and is both an accessible and robust method to those new to qualitative research (Braun & Clarke, 2022, p. 4). Since my research questions are focused on the underlying reasonings behind students' perspectives, thematic analysis was considered a powerful tool in understanding these arguments. I chose *reflexive* thematic analysis as it equips the researcher to be aware of their own subjectivity and how this may impact the research (Braun & Clarke, 2022, p. 5). This includes reflecting on the impact of the researchers' own values, the impact of a specific method and research design, as well as the impact of the academic discipline in which the study is conducted (Braun & Clarke, 2022, p. 13).

The analysis of the data was structured according to Braun & Clarke's (2022, p. 35-36) six phases of thematic analysis:

1. Dataset familiarisation
2. Data coding
3. Initial theme generation
4. Theme development and review
5. Theme refining, defining and naming
6. Writing up

I started the analysis by reading through all transcripts, to familiarise myself with the data. After the familiarisation, each transcript was coded through *inductive coding*, where the codes are not preset but instead arise from the data (Braun & Clarke, 2022, p. 57). The coding was conducted using the software Nvivo. After coding each transcript, I went through the codes and transcripts again to finalise the codes.

Based on the codes derived, initial themes were developed. The themes were set to capture shared *meanings*, rather than shared topics. All themes were united by a central organising idea or concept that tied the theme together (Braun & Clarke, 2022, p. 78). After the initial theme generation, the themes were revised in relation to the codes to make sure that each theme represented the codes it was set to represent. Based on this, final themes were developed. The themes were then mapped out in relation to each other (see section 7) and the key arguments were analysed in relation to the theoretical framework.

5.5 Limitations

As mentioned in section 5.2, this study is limited to a small non-random sample, and as such can not be seen to fairly represent a large diversity of individuals. Due to the size of the sample, different genders, ages and personal backgrounds are not accounted for, and therefore the results may be limited to the characteristics of a few individuals rather than a large diverse population. Instead the study is intended to give an insight into some of the potential arguments and reasonings used by students at high-school age.

Another limitation of the sample is that all the participants who were interviewed in a group-setting already knew each other from before. As such, the relationships between the participants may have affected the dynamics of the discussion (Frey & Fontana, 1991). As a way to limit such effects, participants were asked to fill in a questionnaire probing their viewpoints *before* the interview started. This allowed each participant to reflect on the topic individually, before potentially being influenced by other participants' viewpoints.

An integral part of the research process has been to consider my own reflexivity, throughout the research process. As recommended by Braun & Clarke (2022, p. 343), I have documented my own thoughts and the developing analysis in a *reflexive journal* throughout the study. In the journal I have actively engaged in self-critical analysis of how my own assumptions may limit the engagement with the data. A prevalent topic that I reflected on was how my own opinions regarding the role of economic growth in SD may have shaped my understanding of the data. Since I personally remain critical to the role of economic growth in SD, there is a risk that I view the data from a very critical angle, remaining cautious to arguments of the opposite perspective. It is also important to note that as part of my university studies I have studied degrowth theories more prevalently than theories of green growth or ecological modernisation, and therefore there is a risk that I give unequal weights to the different theories. To limit such biases, I have noted down and reflected on my own standpoint through the journaling process, and afterwards gone through my data while trying to see it through the lens of a contrasting standpoint. Yet it is important to recognize that the thematic analysis will still be based on my own interpretation of the data, where the perspective is shaped by my previous experiences and knowledge background.

5.6 Ethical Considerations

A priority of all research should be to structure and conduct the study in a way that does not inflict harm or stress on the participants, where careful ethical consideration is carried out throughout the process (Banks & Sheyvens, 2014, pp. 161-63). The interview-process in this study was designed to be as enjoyable as possible for the participants, where discussions were shaped as a relaxed conversation amongst the researcher and the participants. As such, the interview also aimed to give the participants an opportunity to reflect on their own values while having the opportunity to learn from and discuss with their peers. This was an important aspect in making sure that the participation in the research also carried some value to those who took part in it, and that the interviews could serve as a place for reflection and learning (Banks & Sheyvens, 2014, p. 162)

All participants were carefully informed about the project and how the findings of the study would be used. This information was communicated both orally, and in written format on a consent form. The consent form included information on what a participation in the study entailed for the individual, while highlighting the participant's right to withdraw from the study at any time, even after the interviews were conducted (see Appendix B). It was important that the students themselves got to choose whether or not to participate in the study. The study adheres to Sweden's ethical guidelines on interviewing underaged people, which states that young people between 15-18 years old can themselves consent for non-clinical research, as long as they are fully aware of its purpose and implications (Etikprövningsmyndigheten, 2023).

All the data collected was handled anonymously. All participants were informed that they would participate anonymously, as this was considered important in making sure that everyone could speak freely and openly. Anonymity was assured by never including any names in the transcription or coding process, instead all statements given during the interviews were labelled with different numbers. Similarly, in the quantitative questionnaire, students only had to fill in their age but no name.

6. Results and cluster analysis

Based on the responses to the questionnaire, each student fits into one of Berglund & Gericke's (2018) four clusters (see section 4.1). In this study, the *nuanced ambivalent cluster* makes up the largest group of students, corresponding to the responses of 6 students (43%). The second largest clusters are the *un-differentiating positive group* and the *two-way convinced group*, both including the responses of 3 students (21%) each. The smallest cluster is the *critical* one, covering the responses of 2 students (14%).

These results show that almost half of the students interviewed consider economic growth to be a threat to SD, while considering economic *development* to be necessary. This indicates that a large share of the students differentiate between growth and development. Only a fifth of the students interviewed consider economic growth to be necessary for SD, without posing a threat to sustainability. While a fifth of the students considered economic growth to be both a threat and a necessity, indicating that students were able to think of examples where growth both harms and benefits sustainability. Only two of the students (14%) were completely critical to the role of both economic growth and development in SD.

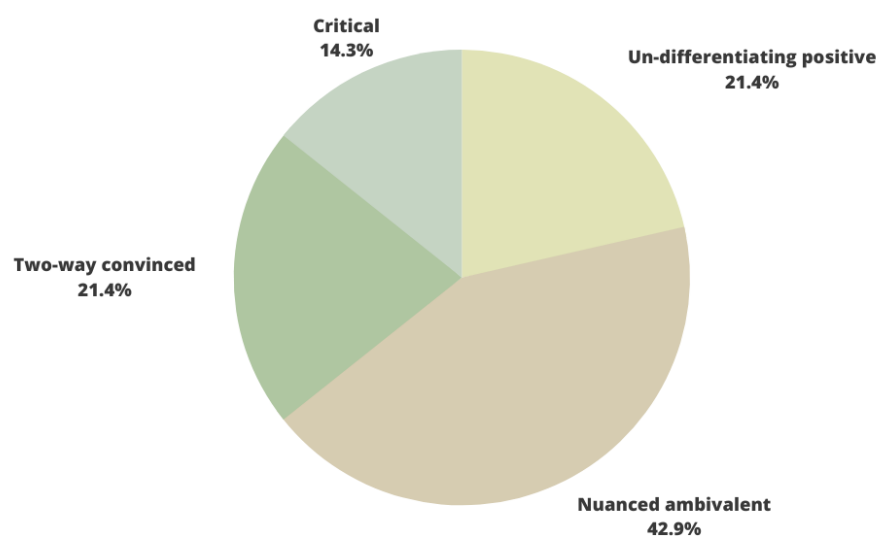


Figure 1: Pie-chart of the cluster-distribution of students

The findings differ somewhat to the results of Berglund & Gericke's (2018) much larger questionnaire study, in which the *un-differentiating positive* group (57%) and the *nuanced ambivalent* (30%) made up the largest clusters. However, in Berglund & Gericke's study the difference between the *nuanced ambivalent* group and the smaller clusters was much greater, whereas the responses in this study were more evenly spread. In Berglund & Gericke's study the *two-way convinced group* made up the smallest cluster (5%), whereas it made up a total of 21% in this study. Equally, the *critical* group was bigger in this study (14%), compared to 8% in Berglund & Gericke's study. However, these numbers should only be used as a point of reference, as the sample size in this study is not large enough to be compared to Berglund & Gericke's study.

7. Thematic analysis

Based on the responses obtained in the interview-process, 12 different themes were generated, that were set to cover the variety of arguments used to either support or criticise the role of economic growth in relation to environmental sustainability. Each theme covers a set of related arguments and reasonings used by the participants.

Each theme has been categorised to fit one or several of the four clusters (see Figure 2). However, it is important to note that the categorisation was done based on how the different themes conformed to the argumentations of the clusters, without knowing whether the participant posing a certain argument actually belongs to that cluster (since the questionnaires were anonymous). Instead the purpose of the categorisation is to visualise how the different themes relate to each other, and the type of spectrum they create. The categorization is also used to guide the analysis of the various themes and arguments in the sections below.

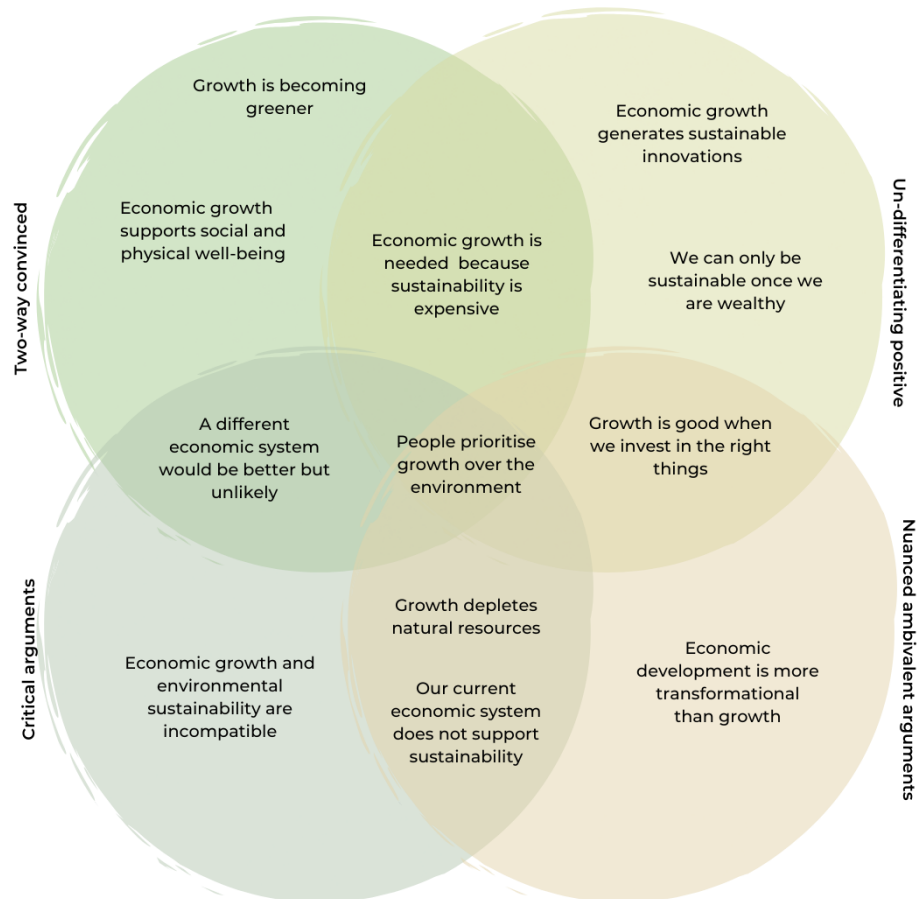


Figure 2: A venn diagram showcasing the different themes in relation to the four clusters

7.1 Nuanced ambivalent arguments

The majority of the participants brought forward arguments which indicated that *development* is necessary for sustainable development, while disagreeing that economic *growth* is necessary. This suggests that a large share of students differentiate between economic development and economic growth. This differentiation was also evident during the interviews, in which most students indicated that they consider development to be different from growth. The majority of the respondents argued that development indicated a more positive change than growth, and that development can support sustainability.

One major theme that arose from the interviews was that **economic development was considered more transformational than growth**, and was thus perceived to have a more

positive effect on environmental sustainability than growth. For example one respondent stated:

“Growth needs to be linear, whereas development can mean that the economy changes”.

As such, growth is seen to indicate just ‘more of the same’, while development is considered to yield some sort of transformation. Other respondents signified similar differences by stating that

“Development is not just growth, but development is a transformation”

“Economic growth is just the money that increases. But economic development I interpret as being about developing where you put your money”.

Other students expressed that development sounds more positive than growth, without being able to exemplify the difference between the two:

“... it [development] sounds like something that aims for positive things and advances in a positive direction...”

“Development feels more important but growth is a barrier”.

The fact that students seem to give different connotations to the terms ‘development’ and ‘growth’ supports the claims made by several degrowth scholars, who argue that using the term ‘sustainable *development*’ neutralises the conflict between the environment and growth, by masking economic growth under the term ‘development’ (Kallis, 2015). On the other hand, the arguments posed by the students could also signify that they intentionally call for more structural and transformational changes, that they think growth alone can not yield, thus supporting a degrowth agenda. Several of the respondents argued that this type of structural transformation is necessary if we want to reach sustainable development. As one respondent put it:

“Development sounds more like a transformation than anything. And if we stay like we are today, then obviously nothing will improve” .

A few students illustrated development as meaning a change in our economic system, through examples such as:

“If you turn to a circular economy or something like that”

“I would say that there is a difference [between economic growth and development]. If you develop new economic systems”.

These examples were brought forward in conjunction with the argument that **our current economic system does not support sustainability**, which formed a prevalent theme in the students’ responses. These arguments thus align with a degrowth perspective, that emphasises the necessity to create new alternatives to our current economic system. Yet very few of the students were able to give any concrete ideas or examples of what such a new economic system could look like. Instead respondents often emphasised the need of a system that prioritises the environment and human well-being over growth. This was exemplified through statements such as:

“Society would need to be a bit different. There should not be as much focus on profit-making”

“I think the best would be to skip economic growth and create a new system [...] To be able to maintain nature as well as possible”.

As such the respondents shared degrowth’s critical approach to economic growth, and similarly suggested a move to a new type of economic system where growth is not the main incentive.

However, some of the students argued that our current economic system can support sustainability, and that **growth is good when we invest in the right things**. But then the importance should not be solely on generating more money, but rather on changing where and how the money is used. As one respondent explained it:

“It feels like it depends more on where you put the resources than how much resources you have”.

This type of argument aligns more with notions of green growth than degrowth, as it proposes investing more in sustainable practices promoting greener growth,

Another prevalent theme was that **growth depletes natural resources**. Most respondents claimed that economic growth today depends on material resources that come from the environment, and as such growth can not be decoupled from environmental degradation. For example one respondent asserted that:

“We already know that there are not enough resources to support the way we use them today”

Another student stated it as:

“It is difficult to grow without natural resources”.

As such these arguments support the common assertion of degrowth, stating that there are physical limits to economic growth, and as such neverending growth can never be sustainable.

7.2 Un-differentiating positive arguments

Several students posed arguments which signified that they considered economic growth to be necessary for sustainable development, and as such did not consider growth to be a threat for environmental sustainability. The same students also considered economic development to be a necessity for sustainable development. Most of these arguments were based on the assertion that **economic growth is needed because sustainability is expensive**. For example one student stated that:

“It requires money to start sustainable development”

Meanwhile another student referred to the cost of adaptation measures:

“Non-profit projects such as cleaning oceans or lakes require money. If there is no increase of money then these things can not happen”.

These claims can be seen to support the notions of green growth and ecological modernisation, by seeing economic growth as a prerequisite for environmental sustainability. These examples are somewhat similar to the theme: **growth is good when we invest in the right things**, as also here the key is to invest the money in processes that benefit the environment.

Several students also brought forward examples of investments that are good for sustainable development, and which could be further supported by economic growth. These arguments all aligned with the theme: **economic growth generates sustainable innovations**. One common example amongst the students was ‘to refer to new forms of energy:

“For example environmentally friendly petrol. I think that we need a lot more economic resources to produce that than normal petrol or diesel”

Another student similarly argued:

“It feels like most of the new technology that we hear about now is good for the environment]”.

These examples were brought forward while highlighting the importance of rules and regulations. Several respondents highlighted the importance of national and international environmental regulations:

“Even when these things are produced, for example airplanes, there will be regulations that decide how much can be produced, and how much they can pollute”

“We have more meticulous laws here in Finland and EU on how and with what resources we can produce, and what type of emissions that are allowed”.

These types of arguments align well with the main assertions of ecological modernisation, where governments are seen to have an important role in steering the direction of companies

through regulations and incentives (Carter, 2018, p. 233). The students thus suggest that economic growth is good for environmental sustainability, as long as states can direct and control the environmental impact of businesses.

Growth was often defended in conjunction with the theme: **growth is good when we invest in the right things**. Most of the arguments related to this theme were based on the idea that it is up to companies and governments to choose if they want to be sustainable or not, and thus it is them who facilitate environmental sustainability by choosing to invest in the right things. For example one respondent stated that:

“It depends on the companies’ own policies and goals. Because you can care only about money and in that way not care about what is better for the environment”.

Another respondents commented on the role of governments by saying:

“It is them who decide where all the money goes and the type of projects that are supported”.

Another respondent highlighted how consumers today want sustainable products, and thus companies can profit from sustainability by producing products that customers want:

“If for example your favourite-company focuses on sustainable development and they get more money out of it, then they can invest more in sustainability and make even more money”.

These types of arguments support the key assumptions of Green Growth, which sees business advancement and economic growth as an asset for sustainability. At the same time it aligns with Green Growth’s assertion that sustainable production is an economic saving for both businesses and governments, since a healthy environment is considered a saving for the economy (Hallegatte et. al, 2012).

Another prevalent theme was how growth is important because **we can only be sustainable once we are wealthy enough**. Several of the students’ arguments were based on the assertion that our physical health and well-being should be prioritised above other things, and that this is particularly important in poorer countries. Therefore growth is important, since the

environment can only be prioritised once we are rich enough. For example one student explained that:

“Today we have quite an effect on the environment, but there is also a large share of people who are no longer starving”.

Another respondent said:

“If you think about developing countries for example, they may not afford to spend money on this type of stuff [referring to sustainable development], because it is not their priority”.

Others tried to put themselves in the position of a poorer person:

“If I myself would live in a tough economic situation - and the whole country lived like that - then it would not be a priority for me to live sustainably”.

These arguments presume economic growth to translate into physical and social well-being for all, something that can be seen as an underlying premise of growth-oriented worldviews such as Green Growth. On the other hand, even growth-critical approaches such as degrowth prioritises social and physical well-being, but does not believe that current models of economic growth will translate to equal benefits for all. Yet, also degrowthists tend to support economic growth in the Global South, based on the idea that the rich states need to ‘degrow’ so that the poorer economies can grow (Kallis, Demaria & D’Alisa, 2018). Thus the arguments that economic growth is needed to increase our physical health and well-being, can fit into both pro-growth theories and growth-critical theories, depending on the context.

7.3 The two-way convinced cluster

In the interviews most respondents were able to bring forward and contrast both critical and supportive arguments for the role of economic growth in sustainable development, while still leaning towards one of the two. Some students however emphasised the two-sidedness of the role of economic growth, and were unable to distinguish whether growth is beneficial or harmful for environmental sustainability.

The main line of argument amongst these respondents was that economic growth is important because our economic system depends on it, based on the assumption that **another system would be better but unlikely**. But since sustainable development is set to take place in our current economic system, we should not dismiss the importance of economic growth. One respondent explained the importance of economic growth by referring to capitalism:

“It is because we have a capitalist society”.

Another student stated that:

“ I think that with the economic system we have right now, and how it works, I don’t think it would be so good for sustainable development to not have growth”.

When asked why economic growth is necessary another respondent answered:

“ Because the world largely spins around money, even though it is harmful”.

These students were all somewhat critical to the role of growth in sustainable development, but considered it to be the only option. Thus the respondents may have supported a degrowth vision for an alternative economic system, but were unable to imagine or argue for such an alternative, and instead focused on solutions that combined growth and sustainability. This finding links back to the fact that most of the interviewed students were unable to give specific examples of alternatives to our current economic system, or alternative ways to structure our society in a sustainable way.

Many students also emphasised the important role that economic growth has in supporting physical and social well-being amongst people, often referring to poorer countries. For example one participant stated:

“I believe that if all countries had good economic growth, then we could have a bigger opportunity to help the poor”.

Another student claimed:

“I think people would get really poor if we did not have economic growth”.

These arguments link to the theme: **we can only be sustainable once we are wealthy enough**, since the respondents consider social and physical well-being a priority, which is hard to combine with environmental sustainability. An underlying assumption of these claims is that providing well-being to people often comes at the cost of the environment, and thus there is a trade-off between well-being and environmental sustainability. As one student put it:

“Today we have a larger effect on the environment, but there are also more people that are no longer starving”.

7.4 The critical cluster

Only a few students posed arguments that were completely critical to the role of economic growth and economic development in relation to environmental sustainability. However, during the interviews, nearly all students were able to recognize some ways in which economic growth may harm sustainable development, albeit most of them still also recognized ways that growth could support sustainability. Yet some students remained critical to all notions of growth and development.

All the critical arguments were based on the notion that **economic growth and environmental sustainability are incompatible**. For example, one respondent explained the relationship between economic growth and environmental sustainability as:

“I think that if they exist simultaneously, then both of them will be pretty slow in their advancement. Whereas if you choose to only focus on one, then it will be a lot more effective”.

Another respondent stated that:

“If it really was completely environmentally sustainable, then it would not be economically sustainable. In fact you would lose money, because we would have to leave the environment untouched”.

These claims directly support the degrowth argument that growth and environmental sustainability can never be compatible, and thus the idea of ‘sustainable development’ is unrealistic (eg. Martinez-Alier, 2015). One student directly stated that there is a conflict between the environment and growth:

“I would say that there is a conflict between money and the environment, like you have to choose one of the two. You can exploit the environment and earn a lot, or do the ethical things and earn less”.

This is similar to the criticism posed by degrowth authors such as Serge Latouche (2003), who has deemed sustainable development to be an oxymoron, trying to tie together incompatible processes.

Several students, across the different clusters, mentioned how the most profitable thing to do is often the worst for the environment:

“Companies justify it by arguing that it is too expensive to produce in another way. And I guess it often costs too much to do something good”

“It is difficult to grow the economy without harming the environment”.

Such arguments link to a much broader theme, which covered responses from almost all students and all clusters: **people prioritise growth over the environment**. In conjunction with this theme, students often referred to the social injustices caused by economic growth:

“Now Swedish factories are moved to India or Bangladesh where it is cheaper [...] They can profit by producing in unethical conditions”

“Rich countries or rich people will use for example cheap labour”.

One respondent further explained how some companies are actively trying to slow down sustainability-efforts:

“We have seen concrete examples in which you have oil companies actively working against change within environmental issues and so forth. A clear example of how growth can be a barrier.”

All of these arguments can be seen to support the two foundational theses of degrowth: economic growth is uneconomic and unjust, and growth is ecologically unsustainable (D’Alisa, Demaria & Kallis, 2018).

Unlike the nuanced ambivalent arguments, respondents who posed more critical arguments were able to give some concrete examples of alternative economic systems. One respondent referred to a specific example of an alternative way to structure an economy:

“I have become curious about a vision, maybe you know about it, Solar Park. It is about collaboration and fixing things. Maybe it is an utopia or a vision that can not be achieved, but I still think it has something beautiful to show.”

Two other respondents referred to a communist system, both arguing that it may be better for social- and environmental sustainability. One stated that:

“But imagine if we all were communists. Then we would fight for a more sustainable development, without the economic barriers”.

Another respondent also brought communism up as an example, but considered it to be unviable:

“I don’t really think that a planned economy works, but it may make the system more sustainable”.

These examples can thus be seen to support degrowth’s visions for alternative societal structures, and as such share degrowth’s criticism of growth, commodification and capitalism.

8. Conclusion

The aim of this study has been to explore the type of relationships that students suggest exist between economic growth and environmental sustainability, and to analyse the type of arguments being used to either support or criticise the role of economic growth. The responses gathered through both the questionnaire and the interviews have illustrated a large diversity in students' perspectives and arguments on the relationship between economic growth and environmental sustainability. The sampled students have expressed numerous reasons for why economic growth may either harm or benefit sustainability, and as such the students have represented viewpoints from each of Berglund & Gericke's (2018) four clusters. During the interviews, students were able to recognize various factors which may impact the relationship between growth and sustainability, including both social-, structural- and political factors. The arguments used by the students ranged from more critical perspectives, in line with degrowth ideas, to arguments more in line with ecological modernisation and green growth. As such, these findings support previous research that has demonstrated how students express a large diversity of viewpoints on the connection between the economic- and environmental dimensions of SD (Berglund & Gericke, 2016; Berglund & Gericke, 2018; Berglund, Gericke & Rundgren, 2014).

As mentioned in the literature review, previous studies have indicated that students tend to find it difficult to discuss the economic dimension of SD, and that it is a question often avoided by students (Berglund, Gericke & Rundgren, 2014; Manni, Sporre & Ottander, 2014). Contrary to these previous findings, all of the students in this study were able to discuss and analyse the economic dimension of sustainability, through various lenses. This could be explained by the methodology that was used for this study, as the previous research has utilised individual questionnaires, whereas this study has focused on qualitative interviews. As such, it may have been easier for students to express their view on the topic through a verbal discussion, rather than a questionnaire.

Through the analysis, it was recognized that some themes were prevalent in all of the students' arguments. A central theme, that united all clusters, was that all the students recognized how 'people prioritise growth over the environment'. As such all the interviewed students agreed that economic growth plays a large role in directing and shaping sustainable

development. But based on this shared assumption, students expressed different opinions on how the prioritisation of growth affects sustainability. Some students expressed critical perspectives on the role of growth, and argued that we need to move to a new type of economic system, that does not prioritise economic growth over social and environmental sustainability. For these students, growth and environmental sustainability were seen as incompatible, indicating an unharmonious view of SD which recognises conflicts between the different dimensions. This contrasts the findings of Öhman & Öhman's (2012) previous study, where all the students in the study demonstrated a harmonious view of SD, where the economic- and environmental dimensions were seen to benefit each other. However, some students in this study also expressed a more positive attitude to the role of economic growth in SD, and presented a more harmonious conceptualisation of SD. These students recognised that we can find sustainable solutions which also profit growth, and that the key is to find solutions that promote economic growth and environmental sustainability simultaneously.

An interesting finding from the analysis was that some of the students who recognized the conflict between growth and environmental sustainability still suggested solutions that combined the two. This finding supports previous claims made by Sumner (2008) who argues that ESD fails to discuss and analyse the conflicts that exist between the different dimensions of SD. As a result, even if students may be aware of some of these dissonances, the education still promotes solutions that combine growth and sustainability, and thus does not question potential dissonances between the two. Similarly, Berryman & Sauv  (2016) have highlighted ESDs tendency to force a consensus on a very ambiguous term, where little room is left to explore and discuss the potential conflicts within SD.

Another interesting finding was that most students were able to analyse the role of economic growth on a systems level, often discussing SD in the light of global production and consumption patterns. As such it is evident that students are aware of how growth influences SD on larger systematic levels, in contrast to previous studies which have indicated that students tend to focus on individual actions rather than systematic change (Korhonen, 2001; Raatevaara, 2017).

Several of the interviewed students also argued that a new type of economic system would be better for SD, as a growth-driven society poses many challenges to environmental sustainability. Yet, few of these students were able to elaborate on these arguments, or to

provide any examples of what such an alternative system would look like. Every time a student mentioned the need for system change, this was followed with statements arguing that such a change would be unrealistic or impossible. This finding is in line with previous research that has indicated the tendency of ESD to find solutions *within* the norms of the current political economy, failing to envision radical alternatives or new types of socioeconomic systems (Huckle & Wals, 2015).

The analysis of the students' arguments and viewpoints can provide some suggestions on how ESD could be improved to better cater for critical reflection and diverse discussions. Based on my findings, I agree with Hofman-Bergholm's (2018) call for an education which includes more value discussions and critical deliberation amongst students. It is clear that students express numerous different perspectives of how SD is best realised, and how the different dimensions of SD relate to each other. Students also indicate the prevalence of contrasting ideologies, where the perspectives of both degrowth, ecological modernisation, and green growth are visible in students' arguments. Yet, there seems to be little room for students to engage in ethical deliberation with each other, where these different perspectives and values can be discussed, together with students who express contrasting perspectives (Hofman-Bergholm, 2018). Such an education could help students to learn that there are different ways to approach the same problem, which would equip students to deal with conflicts of interest both within and outside the classroom. This type of critical reflection and deliberation could foster transformative learning that is not limited to the prevailing economic and political norms, and thus promote the type of education that several previous authors have been calling for (see eg. Jickling & Wals, 2008; Sumner, 2008).

In order to develop a more pluralistic way of teaching, that recognises the full complexity of sustainability issues, the role of teachers and teacher training also needs to be further evaluated. More research is needed on how teachers can support the type of classroom-encounters that allow for students to express their various opposing views and where these views can be discussed in relation to each other. As such, there is a need for more studies that analyse different classroom situations where students engage in critical deliberation, to gain insights on how to best structure our education to cater for different perspectives and conflicts of interest. Such skills are inevitable if we are to find truly sustainable solutions for the global challenges that the world is facing today.

Bibliography

Agenda 21 (1992). United Nations Conference on Environment & Development. Rio de Janeiro: United Nations Conference on Environment & Development

Andreucci, D. & McDonough, T. (2015), Capitalism, in G. D'Alisa, D. Demaria & G. Kallis (eds), *Degrowth: A Vocabulary for a New Era*, Routledge: New York, pp. 83-87

Barbosa, S. G., Drach, P. R. & Corbella, O. D. (2014). A Conceptual Review of the Terms Sustainable Development and Sustainability, *International Journal of Social Sciences*, vol. 3, no. 2, pp. 1-15

Bengtsson, S. L. (2016), Hegemony and the politics of policy making for education for sustainable development: A case study of Vietnam, *The Journal of Environmental Education*, vol. 47, no. 2, pp. 77-90

Berglund, T. & Gericke, N. (2016), Separated and integrated perspectives on environmental, economic, and social dimensions – an investigation of student views on sustainable development, *Environmental Education research*, vol. 22, no. 8, pp. 1115-1138

Berglund, T. & Gericke, N. (2018), “Exploring the Role of the Economy in Young Adults’ Understanding of Sustainable Development.”, *Sustainability*, vol.10, no. 8, 2738

Berglund, T. & Gericke, N. (2022), Diversity in views as a resource for learning? Student perspectives on the interconnectedness of sustainable development dimensions, *Environmental Education Research*, vol. 28, no. 3, pp. 354-381

Berglund, T., Gericke, N. & Rundgren S. C. (2014), The implementation of education for sustainable development in Sweden: investigating the sustainability consciousness among upper secondary students, *Research in Science & Technological Education*, vol. 32, no. 3, pp. 318-339

Berryman, T. & Sauvé, L. (2016), Ruling relationships in sustainable development and education for sustainable development, *The Journal of Environmental Education*, vol. 47, no. 2, pp. 104-117

Borg, C., Gericke, N., Höglund, H. -O. & Bergman, E. (2013), Subject- and experience-bound differences in teachers’ conceptual understanding of sustainable development, *Environmental Education Research*, vol. 20, no. 4, pp. 526-551

Braun, V. & Clarke, V. (2022). *Thematic Analysis: A Practical Guide*. London: Sage Publications

Carter, N. (2018). *The Politics of the Environment: Ideas, Activism, Policy*, Third Edition. Cambridge: Cambridge University Press

- Christoff, P. (1996), 'Ecological Modernisation, Ecological Modernities;', *Environmental Politics*, vol. 5, pp. 476-500
- D'Alisa, Demaria & D'Alisa (2018). *Degrowth: A Vocabulary for a New Era*. Routledge: New York
- Didham, R. J. & Ofei-Manu, P. (2015), The Role of Education in the Sustainable Development Agenda: Empowering a learning society for sustainability through quality education, in *Achieving the Sustainable Development Goals: From Agenda to Action*, by the Institute for Global Environmental Strategies (IGES)
- Dillon, M. (2014). *Introduction to Sociological Theory*, Oxford: Blackwell Publishing
- Dryzek, J. (2013). *The Politics of the Earth: Environmental Discourses*, Third Edition. Oxford: Oxford University Press
- Environmental Performance Index (2022), 2022 EPI Results, Available online: <https://epi.yale.edu/epi-results/2022/component/epi> [Accessed 5 May 2023]
- Etikprövningsmyndigheten (2023), Vem ska lämna samtycke till forskning på barn och unga?, Available online: <https://etikprovningmyndigheten.se/faq/vem-ska-lamna-samtycke-till-forskning-pa-barn-och-unga/> [Accessed 14 May 2023]
- Frey, J. H. & Fontana, A. (1991), The Group Interview in Social Research, *The Social Science Journal*, vol. 28, no. 2, pp. 175-187
- Giddings, B., Hopwood, B. & O'Brien, G. (2002), Environment, economy and society: Fitting them together into sustainable development, *Sustainable Development*, vol. 10, pp. 187-196
- Giovannoni, E. & Fabietti, G. (2014), What Is Sustainability? A Review of the Concept and Its Applications, in C. Busco, M. L. Frigo, A. Riccaboni & P. Quattrone (Eds.), *Integrated Reporting*, pp. 21-40, Available online: <https://link.springer.com/book/10.1007/978-3-319-02168-3> [Accessed 8 January 2023]
- Gough, N. (1991). Narrative and nature: unsustainable fictions in environmental education, *Australian Journal of Environmental Education*, vol. 7, pp. 31-42
- Hallegatte, S., Heal, G., Fay, M. & Treguer, D. (2012), From Growth to Green Growth - A Framework, working paper, no. 1781, National Bureau of Economic Research
- Hickel, J. (2020). *Less is More: How Degrowth will Save the World*. London: Penguin
- Hohman-Bergholm, M. (2018), Changes in Thoughts and Actions as Requirements for a Sustainable Future: A Review of Recent Research on the Finnish Educational System and

Sustainable Development, *Journal of Teacher Education for Sustainability*, vol. 20, no. 2, pp. 19-30

Hopwood, B., Mellor, M. & O'Brien, G. (2005), Sustainable Development: Mapping Different Approaches, *Sustainable Development*, vol. 13, pp. 38-52

Huckle, J. & Wals, A. E. J. (2015), The UN Decade of Education for Sustainable Development: business as usual in the end, *Environmental Education Research*, vol. 21, no. 3, pp. 491-505

Håll Sverige Rent (2023a), Grön-Flagg Licens, Available online: <https://hsr.se/gronflagg/vad-kostar-gron-flagg> [Accessed 6 May 2023]

Håll Sverige Rent (2023b), Grön-Flagg, Available online: <https://hsr.se/gronflagg> [Accessed 6 May 2023]

Jickling, B. (1994), WHY I DON'T WANT MY CHILDREN TO BE EDUCATED FOR SUSTAINABLE DEVELOPMENT: SUSTAINABLE BELIEF, *Trumpeter*, vol. 11, no. 3

Jickling, B. & Wals, A. E. J. (2008), Globalization and Environmental Education: Looking beyond sustainable development, *Journal of Curriculum Studies*, vol. 40, no. 1, pp. 1-21

Jänicke, M. (2007), Ecological Modernisation: new perspectives, *Environmental Policy Research Center*, vol. 16, pp. 557-556

Kallis, G. (2010), In defence of degrowth, *Ecological Economics*, vol. 70, pp. 873-880

Kallis, G. (2015), The Degrowth Alternative, *Great Transition Initiative* [pdf], Available online: <https://onwork.edu.au/bibitem/2015-Kallis,Giorgos-The+degrowth+alternative/>, [Accessed 19 May 2023]

Kallis, G., Demaria, D. & D'Alisa, G. (2018), Introduction: Degrowth, in G. D'Alisa, D. Demaria & G. Kallis (eds), *Degrowth: A Vocabulary for a New Era*, Routledge: New York, pp. 28-45

Kopnina, H. (2012), Education for sustainable development (ESD): the turn away from 'environment' in environmental education?, *Environmental Education Research*, vol. 18, no. 5m pp. 699-717

Latouche, S. (2003). Sustainable Development as a Paradox, Plenary Session 11, June 3

Latouche, S. (2009). *Farewell to Growth*. Polity Press: Cambridge

Manni, A., Sporre, K. & Ottander, C. (2013), Mapping What Young Students Understand and Value Regarding Sustainable Development, *International Electronic Journal of Environmental Education*, vol. 3, no. 1, pp. 17-35

Martinez-Alier, J. (2015), Environmentalism, Currents of, in G. D'Alisa, D. Demaria & G. Kallis (eds), *Degrowth: A Vocabulary for a New Era*, Routledge: New York, pp. 112-116

Mesah, J. (2019), Sustainable development: Meaning, history, principles, pillars, and implications for human action: Literature review, *Cogent Social Sciences*, vol. 5, no. 1, 1653531

MIT Technology Review (2022), The Green Future Index 2022, Available online: <https://www.technologyreview.com/2022/03/24/1048253/the-green-future-index-2022/> [Accessed 5 May 2023]

Neumayer, E. (2003). *Weak versus Strong Sustainability: Exploring the Limits of Two Opposing Paradigms. Second Edition*. Cheltenham: Edward Elgar Publishing

OECD (2018). PISA 2018: Insights and Interpretations [pdf], Available from: <https://www.oecd.org/pisa/publications/pisa-2018-resultshtm.htm> [Accessed 5 May 2023]

Offerman, M. (2016), Alakoulujen oppilaiden käsityksiä ja kokemuksia kestävästä kehityksestä Espoossa, Pro gradu-tutkielma, Käyttäytymistieteellinen tiedekunta, Helsingin Yliopisto

O'Flaherty, J. & Liddy, M. (2018), The impact of development education and education for sustainable development interventions: a synthesis of the research, *Environmental Education Research*, vol. 24, no. 7, 1031–1049

Opetushallitus (2019). Lukion Opetussuunnitelman Perusteet 2019 [pdf], Available from: <https://www.oph.fi/fi/koulutus-ja-tutkinnot/lukion-opetussuunnitelmien-perusteet> [Accessed 5 May 2023]

Palmer, J. (2008). *Environmental Education in the 21st Century*, London: Routledge

Papenfuss, J., Merritt, E., Manuel-Navarrete, D., Cloutier, S. & Eckard, B. (2019), Interacting Pedagogies: A Review and Framework for Sustainability Education, *Journal of Sustainability Education*, vol. 20, pp. 1-19

Pauw, J. B., Gericke, N., Olsson, D. & Berglund, T. (2015), The Effectiveness of Education for Sustainable Development, *Sustainability*, vol. 7, 15693-15717

Raatevaara, L. (2017). Kestävä kehitys -aiheisen projektityön vaikutus 8.- luokkalaisten ympäristöasenteisiin ja käyttäytymiseen, Pro Gradu -tutkielma, Bio- ja ympäristötieteiden laitos, Jyväskylän yliopisto

Robra, B. & Heikkurinen, P. (2020), Degrowth and the Sustainable Development Goals, in W. L., Filho, A. M. Azul, L. Brandli, A. L. Salvia & T. Wall, Decent Work and Economic Growth, Cham: Springer, pp. 253-262

Robson, C. & McCartan, K. (2016). Real World Research: A resource for User of Social Research Methods in Applied Settings, 4th edition, West Sussex: John Wiley & Sons Ltd

Sachs, W. (1999), Sustainable development and the crisis of nature: On the political anatomy of an oxymoron, in Fischer, F. & Hajer, M. A. (eds.), Living with Nature: Environmental Politics as Cultural Discourse, Oxford: Oxford University Press

Sauvé, L., Brunelle, R. & Berryman, T. (2005), Influence of the Globalized and Globalizing Sustainable Development Framework on National Policies Related to Environmental Education, *Policy Futures in Education*, vol. 3, no. 3, pp. 271-283

Skolverket. (2022). Läroplan för gymnasieskolan, Government of Sweden, Available Online: <https://www.skolverket.se/undervisning/gymnasieskolan/laroplan-program-och-amnen-i-gymnasieskolan/laroplan-gyll-for-gymnasieskolan> [Accessed 14 April 2023]

Skolverket. (2023). Miljö och hållbarhet i undervisningen, Available online: <https://www.skolverket.se/om-oss/var-verksamhet/hallbar-utveckling-och-miljo/agenda-2030-utbildning-och-hallbar-utveckling> [Accessed 14 April 2023]

Sumner, J. (2008), From Academic Imperialism to the Civil Commons: Institutional Possibilities for Responding to the United Nations Decade of Education for Sustainable Development, *Interchange*, vol. 39, no. 1, pp. 77-94

Svetina, M., Istenič-Starčič, A., Juvančič, M., Novljan, T., Šubic-Kovač, M., Verovšek, S. & Zupančič, T. (2013), How Children Come to Understand Sustainable Development: A Contribution to Educational Agenda, *Sustainable Development*, vol. 21, pp. 260-269

The United Nations (UN) (2023a), Sustainable Development Goals: Quality Education, Available online: <https://www.un.org/sustainabledevelopment/education/> [Accessed 4 May 2023]

The United Nations (UN) (2023b), Social Development for Sustainable Development, Available online: <https://www.un.org/development/desa/dspd/2030agenda-sdgs.html> [Accessed 18 May 2023]

The World Bank (2012), Inclusive Green Growth: The Pathway to Sustainable Development [pdf], Available from: <https://openknowledge.worldbank.org/entities/publication/dd958ad6-e19f-5acf-894c-1809db8ce348> [Accessed 19 May 2023]

The World Commission on Environment and Development (1987). *Our Common Future*, Oxford: Oxford University Press

Tosun, J. & Leininger, J. (2017), Governing the Interlinkages between the Sustainable Development Goals: Approaches to Attain Policy Integration, *Global Challenges*, vol. 1, no. 1, 1700036

UNESCO (2014). UNESCO Roadmap for Implementing the Global Action Programme on Education for Sustainable Development, Available online: <https://sustainabledevelopment.un.org/index.php?page=view&type=400&nr=1674&menu=1515> [Accessed 4 May 2023]

UNESCO (2020). Education for Sustainable Development: A Roadmap, UNESCO Education Sector, Available online: <https://unesdoc.unesco.org/ark:/48223/pf0000374802.locale=en> [Accessed 11 May 2023]

UNESCO (2022). UN Decade of Sustainable Development, Available online: <https://en.unesco.org/themes/education-sustainable-development/what-is-esd/un-decade-of-esd> [Accessed 2 January 2023]

UNESCO (2023), What you need to know about education for sustainable development, Available online: <https://www.unesco.org/en/education-sustainable-development/need-know> [Accessed 4 May 2023]

Vihreä Lippu (2023), Vihreä Lippu, Available online: <https://vihrealippu.fi/> [Accessed 6 May 2023]

Wals, A. (2009), A Mid-DESD Review: Key Findings and Ways Forward, *Journal of Education for Sustainable Development*, vol. 3, no. 2, pp. 195-204

Wals, A. E. J. & Kieft, G. (2010). Education for Sustainable Development: Research Overview, SIDA Review, Available online: <https://library.wur.nl/WebQuery/wurpubs/fulltext/161396> [Accessed 5 January 2023]

World Bank (2012). Inclusive Green Growth: The Pathway to Sustainable Development [pdf], Available from: <https://documents.worldbank.org/en/publication/documents-reports/documentdetail/368361468313515918/main-report> [Accessed 4 May 2023]

WWF (2023), Lärande för Hållbar Utveckling, Available online: <https://www.wwf.se/utbildning/larare/larande-for-hallbar-utveckling/> [Accessed 6 May 2023]

Öhman, M. & Öhman, J. (2014), Harmoni eller konflikt? - en fallstudie av meningsinnehållet i utbildning för hållbar utveckling, *Nordic Studies in Science Education*, vol. 8, no. 1, pp. 59-72

Appendices

Appendix A

Below is a copy of the questionnaire used for the quantitative part of the study. Students who participated in the study through a video call filled in the survey online (via Microsoft Survey). Students who participated in-person filled in a printed version of the same questionnaire.

Frågor inför studie

1. Min ålder:

2. Jag tror att ekonomisk tillväxt är nödvändigt för hållbar utveckling

Håller inte med	Håller delvis med	Jag vet inte	Håller med	Håller starkt med
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

3. Jag tror att ekonomisk tillväxt är ett hot för hållbar utveckling

Håller inte med	Håller delvis med	Jag vet inte	Håller med	Håller starkt med
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

4. Jag tror att ekonomisk *utveckling* är nödvändigt för hållbar utveckling

Håller inte med	Håller delvis med	Jag vet inte	Håller med	Håller starkt med
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Appendix B

Below is a copy of the consent form (in Swedish) that was filled out by all the participants.

Samtyckesblankett

1. Information om studien

Jag heter Ronja Karvinen, och studerar sista året av kandidatprogrammet i 'Utvecklingsstudier'. I mitt slutarbete undersöker jag gymnasieelevers tankar och synpunkter på hållbar utveckling, med fokus på förhållandet mellan ekonomisk tillväxt och ekologisk hållbarhet. Målet med studien är att förstå hur gymnasieelever tänker om ekonomins roll i hållbar utveckling, och hur elever diskuterar ämnet.

Studien genomförs genom intervjuer, där jag kommer ställa några frågor som ni sedan för svara på och diskutera sinsemellan. Jag kommer att spela in diskussionen, och senare transkriberar jag det som sagts samt analyserra diskussionen. Intervjun kommer ta max. 45 minuter.

2. Databehandling

Utlåtanden som görs under intervjun kommer att ingå anonymt i intervjun och era namn kommer inte att framgå i studien. Jag kommer att nämna i studien att intervjuerna gjorts med gymnasieelever i Lund, utan att namnge skolan.

3. Fördelar med deltagande

Ert deltagande i studien kommer att hjälpa mig att undersöka temat jag är intresserat av, och kommer också att bidra med ny information om hur man kan inkludera hållbar utveckling i gymnasieutbildningen. Jag hoppas också att studien bidrar till en intressant diskussion som ni drar nytta av och som väcker intressanta tankar hos er.

4. Rätt till att avstå från studien

Ni har när som helst rätt att avstå från studien, även efter att intervjun genomförts. Isåfall kommer jag att radera era svar från studien. Ifall ni vill avstå efter att intervjun gjorts, så kan ni mejla eller ringa mig (ni har fått mina kotnaktuppgifter).

Samtycke

Min underskrift betyder att jag har skriftligen informerats om studien och samtycker till att delta. Jag är medveten om att mitt deltagande är helt frivilligt och att jag kan avbryta mitt deltagande i studien utan att ange något skäl.

Underskrift

Namnförtydligande

Appendix C

Below is an explanation of how the participants in this study were divided into Berglund & Gericke's (2018) four clusters, based on their responses to the short questionnaire at the start of the interview.

Q1: I think that economic growth is necessary for sustainable development

Q2: I think that economic growth is a threat for sustainable development

Q3: I think that economic development is necessary for sustainable development

I don't agree = 1 I partially agree = 2 I agree = 3 I strongly agree = 4

	Q1	Q2	Q3
The un-differentiating positive ones	3-4	1-2	3-4
The nuanced ambivalent ones	1-2	1-4	3-4
The two-way convinced ones	3-4	3-4	3-4
The critical ones	1-2	3-4	1-2