Climate Change and Worldview Transformation in Finnish Education Policy

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Introduction

Climate change and the subsequent ecological crisis an existential threat to human life. There is an urgent need for major changes (Carpenter et al., 2019; Gills & Morgans, 2020). Many scholars have called for a profound paradigm shift to address the prevailing economic and political order that is responsible for the crisis (e.g., Cross et al., 2019; Kallis et al., 2018). The Covid-19 pandemic demonstrated the urgent need for a radical and global shift across all societies toward more sustainable lifestyles (Osmanagić Bedenik, 2020) and education that leads to significant change towards sustainability (Filho et al., 2018; Wolff, 2020). There is likewise a request for new ethical frameworks and new worldviews (Berzonsky & Moser, 2017; Carpenter et al., 2019; Van Egmond & De Vries, 2011) and rapid educational changes (e.g., Cebrián et al., 2020).

The quest for sustainability ethics is not a new concern—such thoughts were visible in the 18th-century Enlightenment discourses (e.g., Wolff, 2011). Since the 1980s, there has been increased attention to sustainable development and sustainability issues in both national and international policies. According to the United Nations Educational, Scientific and Cultural Organization (UNESCO), the sustainability concept is a long-term goal toward a more sustainable world, whereas sustainable development implies the processes toward this goal (Wolff & Ehrström, 2020). The more visionary sustainability concept gradually emerged from several sources in the 1960s, and sustainable development became a popular political agenda from the 1980s on. Yet not all voices have been satisfied with the sustainable development or sustainability approaches. The Brundtland report published by the UN’s World Commission on Environment and Development (1987), aimed to unite countries in the pursuit of sustainable development, and succeeded in making sustainable development a global political concept. However, O’Sullivan (1999, p. 113) accused the report of allowing the rich part of the world “to want to have the cake and eat it, too.” The opportunity for economic development and growth while addressing the climate crisis has also been questioned.

The sustainability debate was initiated by the environmental movement, especially the IUCN (International Union for Conservation of Nature) and WWF (World Wildlife Fund) (see Wolff, 2011). Since the middle of the 20th century, an increasing number of social movements have actualized the present world situation. Large-scale and sector-wide policy neglects of sustainability related requirements and basic human needs has resulted in local and worldwide protests, as well as positive actions. Movements related to sustainability issues
target climate change, animal rights, anti-consumerism, anti-nuclear power, anti-
globalization, ecofeminism, environmental justice, fair trade, and many more concerns (e.g.,
Wolff, 2016). The wide-ranging youth climate movement swept the world in 2018 and 2019
with numerous school strikes. These strikes were initiated by the Swedish schoolgirl Greta
Thunberg, who mobilized an estimated 6 million strikers worldwide in September 2019.
Thunberg challenged the world’s leaders about their climate inaction and asked them to take
responsibility. She became the leader of young people on all continents through the grassroots
movement Fridays for Future. This worldwide youth mobilization urges older generations to
“listen to the science” and has succeeded in raising a sense of urgency (De Moor et al., 2020;
Hahn & Ahn, 2020). The concerns of youth activists are voiced in diverse ways: As dutiful
dissent within existing institutional spaces, as disruptive dissent by questioning and seeking
to modify existing political and economic structures, or as dangerous dissent by activism that
defies business as usual to generate new and alternative ways of organizing society that can
fundamentally change the world (O’Brien et al., 2018). Finnish youth activists do not
genenerally reject established democratic norms or political authorities, but rather demand a
better-functioning representative system with politicians who listen to their demands
(Huttunen, 2021). Commonly activists argue, that critical to overcoming climate injustices is
the emphasis of values such as justice, fairness, and moderation, which are an integral part
of the Western cultural and moral heritage rather than radically new (Piispa & Kiilakoski, 2021).
Youth activism is closely connected to schools, which highlights the need for education to
address the climate crisis and the concerns of youth.

The need for fundamental change in worldviews has become more visible in international
policies and in research during the 2010s. The United Nation’s 2030 Agenda for Sustainable
Development, adopted by all UN member states in 2015, declares that sustainability and
climate education must be integrated into all learning on a global scale (United Nations,
2015). Therefore, education has a key role in achieving the core of this agenda, the 17
Sustainable Development Goals of 2030 (SDGs).

It is increasingly obvious that all educational levels need to support a profound worldview
change as a response to the climate emergency—a transformative change (e.g., Balsiger et al.,
2017). Yet, transformation may include changes at personal, cultural, organizational,
institutional, and even systems levels. Consequently, transformation is a complex process that
takes place at both individual and societal levels. O’Brien and Sygna (2013) held that the
climate change dilemma calls for a reconceptualization of transformation. In policy
discourses, it is often unclear what needs to be transformed and why, how the change would
be realized, in whose interest this change will be made, and what the consequences of the
transformation will finally be (O’Brien & Sygna, 2013; see also Wolff & Ehrström, 2020).

Research has suggested that education can play a significant role as a social tipping point for
climate stabilization; education is a key factor in inspiring changes in behavior (Otto et al.,
2020). Yet, the response within education has been far from adequate, and there is concern
that educational systems are heading in the wrong direction (Sterling, 2021). As Hampson
(2012, p. 71) described it, “humanity as a whole appears caught in a lemming’s loop,” racing
toward a future that emerges as a “long emergency”—a possible scenario that by itself should
be sufficient to create a revolution in education. Hence, there is a pressing research and
policy question: How can education change fast enough to reach the ambitious sustainability
goals? Even if there were broad agreement on the need for climate change education, there
are still many whats, hows, and whys to be answered (Reid, 2019). Therefore, Reid (2019, p.
768), who discussed the many challenges of climate change education based on a large review, asked, “Who is responsible for ensuring quality climate change education takes place?” As Reid showed, the task to face the challenge of climate change by help of education is extremely complicated, since it touches the core of education. Unquestionably, education politics and policy development have a key role in advancing quality climate education and creating the groundworks for comprehensive change, even if well-developed policies do not always lead to successful implementation (Blum et al., 2013). This actualizes an increased emphasis on educational policy development and the role of policy in actively forwarding worldview transformation.

Worldview Transformation and Its Significance for Addressing the Climate Crisis

Our fundamental aim with this study is to investigate the role of education policy as a promoter of a worldview transformation, generating a change that the sustainability and climate crisis dilemmas request. The analysis focuses on a main question and concludes with a last critical inquiry. First, we ask: What worldview change does educational policy call for in the sustainability and climate emergency? Based on the answers to this question, we also question if and how educational policies can promote the change required. Methodologically our review draws on the traditions of critical policy analysis to discover the complexity, subjectivity and power relations within policies and their implementation (Diem et al., 2014).

The discourse analysis is influenced by Foucault, who challenged researchers to identify the rules that guide the discourse and how the “truth” is formed, what emerges from the text, and how the text operates (Doherty, 2007). Our focus is on the preconditions of the discourses, their processes, and effects. Of interest are the various layers and interrelated domains of the discourses, rather than to search for what is true (e.g., Foucault, 1998).

The study begins with a discussion of recent general international policy developments in relation to worldview, transformation, sustainability, and climate education, and it then proceeds to an in-depth analysis of policy documents from Finland. The international policy documents are policies from UNESCO and other major education agencies on sustainability, including white papers on Agenda 2030. The main Finnish policy documents are a ministry strategy and the core curriculum for basic education. We have also compared these documents with more general international policy documents, mainly from the OECD and the European Union, as well as several national educational policy documents, to see how the main documents in our study relate to a larger educational discourse. In addition, we have compared the main documents to international policy on sustainability with no specific focus on education. Finally, we have compared the policies to recent research on worldview, sustainability, and climate change education.

Before addressing the first research question, we should clarify the concepts of “worldview” and “transformation” and their significance for sustainability. The concept of worldview has its roots in the word Weltanschaung (sometimes Weltansicht) used in German philosophical theology “denoting the widest view which a mind can take of things in the effort to grasp them together as a whole from the standpoint of some particular philosophy or theology” (Orr, 1908, p. 15). In the last few decades, the word Weltanschaung and the narrower English worldview have become common (Naugle, 2002). In simple terms, a worldview is the outlook
individuals have on life, including how they normally view and conceptualize the world, and how they live their lives (Abi-Hashem, 2014). Worldviews can be thought of as our “entrenched ways of seeing the world” (Schein, 2014, p. 2) and as “cognitive, perceptual, and affective maps” (Hart, 2010, p. 2) that individuals continuously use to make sense of the world. These maps are developed throughout a person’s lifetime via socialization and social interaction and may often be unconsciously taken for granted and seen as self-evident (Hart, 2010; Schein, 2014). Worldviews are the “lenses” through which individuals form their understandings of the world and themselves and define their temporal and historical existence that include formulations of the past, present, and future. Worldviews commonly include a metaphysical dimension, which tries to incorporate the natural and supernatural. In sum, worldviews provide directions for how individuals orientate and act (Abi-Hashem, 2014; Schlitz et al., 2010).

The concept of worldview expresses a holistic orientation of the world and the human existence. This overarching nature is illustrated by De Witt and Hedlund (2017) in their definition of worldviews as

inescapable, overarching systems of meaning and meaning-making that to a substantial extent inform how we interpret, enact, and co-create reality; they are complex constellations of epistemic capacities, ontological presuppositions, and ethical and aesthetic values that converge to dynamically organize a synthetic apprehension of the world. (p. 307)

The spectrum of questions that worldviews encompass is thus wide, including the nature of reality and the universe, how someone can acquire knowledge and what is valid knowledge, as well as what a good and ethical life is. Worldviews also comprise an anthropological perspective on who human beings are and what their role in the universe might be and a societal perspective of how society should be organized and function (De Witt & Hedlund, 2017).

Worldviews particularly emphasize perspectives, such as ontological or social perspectives. A general distinction is between personal and organized worldviews. Organized worldviews represent a group’s more or less coherent and established traditions, whereas personal worldviews represent individual views on life and humanity, which may be inspired by more than one organized worldview (Van de Kooij et al., 2013). Worldviews are often perceived through dichotomies. In sustainability research, common dichotomies include, for example, anthropocentric (human-centered) vs. eco-centric worldviews (Eckersley, 1992), and modern scientific (dualistic and utilitarian) vs. ecological (holistic and integrated) worldviews (Peterson, 2020). Polarized and clashing worldviews are an increasing global concern both in politics and society (Huntington, 1996), including stances about the climate crisis (De Witt, 2015). In climate discourses, differences between religious and scientific worldviews are visible, representing divisions that have been debated since the Enlightenment and relate to the ancient Platonic split between the materialistic and the idealistic world (Van Egmond & De Vries, 2011; Wolff, 2011). In slight contrast to the presence of dichotomies, an increasing awareness of other diverse worldviews is emerging, partly due to increasing secularization, which has brought forth a wide array of spiritual, political, ecological, and cultural
perspectives (Zilliacus & Kallioniemi, 2016). Indigenous worldviews have also increasingly attracted attention, particularly through postcolonial and sustainability research perspectives (Sepie, 2018).

The theoretical concept of worldview has been criticized because of its haziness, width, and manifold, as well as its overlapping, concepts such as ideology and paradigm. According to De Witt (2016), the differences between these is that the concept of worldview intrinsically has a certain openness rather than justifying only one ideological perspective or practice or prescribing a certain paradigm. The notion highlights the relativity of humans’ perception and understanding of reality by emphasizing the multiple ways of relating to the world and to the diversity of individuals and cultures. The contemporary concept of worldview is therefore in essence postmodern. In this perspective, worldviews are multiple and dynamic. According to Sepie:

> The most helpful way of thinking about worldview is as a “system of relationships,” visualized in a circular (or “nested”) form, with feedback loops, via which we might constantly be comparing and contrasting ideas with experiences, forming new conclusions or making decisions as a result.

(Sepie, 2018, p. 87)

While De Witt (2016, p. 233) underlines that worldviews “are the fundamental ‘lenses’ through which humans see and filter life and the world, and they interface with people’s perceptions of global issues like climate change in ways that are profound, persistent, and frequently overlooked.” Worldviews shape how individuals perceive issues and are highly significant for their willingness to partake in, or politically support, different solutions.

From an educational point of view, this openness and dynamic nature of worldviews is most important, and it offers direct potential for worldview education to address the climate crisis. Children and youth often have multiple identifications simultaneously, which are influenced by family members, school, media, and various communities. The multitude of worldviews in society and among youth calls for an approach that is inclusive of diverse worldviews (Canty, 2014; Laine, 2019). An important goal in climate change education is to advance reflectivity, mutual understanding, and synergy among different worldviews. Rather than proclaiming one worldview as sustainable and others as not, the goal is to inspire individuals and groups with different worldviews to actualize their worldview potentials and mitigate their pitfalls in relation to the climate crisis (De Witt, 2015). For climate education, as for the Finnish comprehensive school in general, the scientific worldview, which emphasizes knowledge seeking through systematic empirical observation and testing, appears as the cornerstone for understanding and teaching about the crisis, and therefore it cannot be disregarded or questioned on a fundamental basis.

These days, there are voices loudly requesting a global worldview transformation (e.g., Malhi, 2017), among them geoscientists, who call this epoch Anthropocene. By the word Anthropocene, geoscientists define an epoch when humankind has caused tremendous changes in the atmospheric, geologic, hydrologic, biospheric, and other earth systems that have vast consequences for the whole planet (Crutzen, 2006; Steffen & al., 2006). Climate change is one of the more obvious signs of the Anthropocene. Without doubt, climate change
belongs to what Klafki (1997) calls an epochal key issue of education (Wolff et al., 2020). Yet, if climate change demands worldview transformation, this must become obvious in both education policy and practice.

Schlitz, Vieten, and Miller define worldview transformation as

> a fundamental shift in perspective that results in long-lasting changes in people’s sense of self, perception of relationship to the world around them, and way of being. Such major transformations can be distinguished from minor alterations in people’s conceptual understanding of the world.

(Schlitz et al., 2010, pp. 19–20)

Transformation is a common, but often loosely used concept in education. In the 1970s, Mezirow (1978) created transformative learning for adult contexts, and he and many other scholars later modified his first theory (e.g., Kitchenham, 2012; Taylor, 2017). A core element in transformative learning is critical reflection; it entails a process in which people learn to recognize and critically reflect on unjust ideologies hidden in everyday practice (Mezirow, 2000; Taylor, 2017). According to Mezirow (2000, p. 14), transformative learning involves “a deep, structural shift in basic premises of thoughts, feelings, and actions” and requires a shift in one’s “frames of reference.” These changes in habits of mind, or epochal transformations, are in many respects analogous to changes in worldviews (Hathaway, 2017).

When aiming at sustainability, transformative learning implies a fundamental change of worldview, which emerges as a holistic process that has a Pestalozzian “head, heart, hands” framing (Sepie, 2018). According to Rieckmann (2018), education for sustainable development (ESD) has to build on an “action-oriented transformative pedagogy” which generates interactive, learner-centered educational settings. Transformative learning underpins social actions and social change (e.g., Mezirow, 2009). Importantly, one can argue that it cannot be achieved solely at the individual level but needs support via changes in cultures and institutions (Hathaway, 2017), a perspective of substantial impact for educational policymaking.

**Perspectives of Worldview Change in Policies in Finland and Internationally**

In the following we will address our main question: What worldview change does educational policy call for in the sustainability and climate emergency? First, the focus is on a review of key worldview perspectives in international policy development. This is followed by a closer focusing on policy development in Finland.

**Key International Policy Developments**

At a political level, there was a rise in environmental awareness in the 1960s. In 1972, the Club of Rome published *Limits to Growth*, a text that questioned the viability of continued economic growth (Meadows et al., 1972). Since then, sustainability has been a frequent issue in local, regional, and international policies. In 1980, in collaboration with the United Nations
Environment Programme, the nongovernmental organizations IUCN and WWF published the *World Conservation Strategy*. This document underscores the relationship between socioeconomic development and nature conservation in a world in which plants, animals, and people can share a good life. The Brundtland report (World Commission on Environment and Development, 1987) pointed to sustainable development as a global vision of a better future for humankind in all parts of society. However, it was a call for new values and norms without reducing technological and economic improvements. The sustainable development policy work has continued at both global and local levels. Many milestones have emerged on the way. One of the latest of them is the already-mentioned Agenda 2030 with its 17 Sustainable Development Goals (SDGs), adopted by all United Nations member states in 2015 (United Nations General Assembly, 2015). However, there are voices, loud voices, asking for more radical action. Among them are ecological justice movements in the Global South and degrowth movements in the North, which question dominant societal capitalist models, and they request a redistribution of wealth and a change in the way societies organize themselves.

There is strong agreement that world citizens of the 21st century need skills other than education provided in the previous century, but the opinions about what future citizens will need vary greatly. Not all policies ask for sustainability, even if Agenda 2030 has moved the issue to the forefront. The imprecise and commonly used term “21st-century skills” has a focus on completely different elements compared to climate change. Conversely, it encapsulates the knowledge, skills, and dispositions necessary to succeed in a workplace where the future is unpredictable (Care et al., 2012; Delores, 1998). The development of 21st-century skills is also related to digitalization and the competitive aspects of the market economy (Wolff & al., 2020). Changes in the economy and the labor market caused by globalization and internationalization triggered the development of 21st-century skills (Wolff et al., 2020). In relation to the labor market and the economy, there is also an increasing recognition of the relevance of transversal knowledge, skills, and competencies (UNESCO, 2016). UNESCO, the European Commission, and many other agencies are involved in the development of these educational elements.

According to Bell (2016), 21st-century skills are more premised on servicing than transforming the global economy. He asks for educational institutions that view the aims of education through a sustainability lens and prepares students to live sustainably (see also Wolff et al., 2020). In the perspective of Global Partnership for Education (GPE), which has a focus on low-income countries 2020, the 21st-century skills emphasize the role of education as contributor of peace, tolerance, human fulfillment, and sustainable development (Global Partnership for Education, 2020). Contrastingly, the OECD (2019, p. 2) asks for education aimed at values transformation and “better lives, such as creating new jobs, businesses and services, and developing new knowledge, insights, ideas, techniques, strategies and solutions.”

In the foreword of the report of World Economic Forum 2015, UNESCO’s Director-General Irina Bokova sees education as a transformative force and states that “education is the path to sustainability — to poverty alleviation, better health, environmental prediction and gender equality” (UNESCO, 2015, p. 5). Even if this document stresses equality and inclusion, it also wants to educate learners for the workforce of tomorrow and as flexible, lifelong learners. Simultaneously, Education for Sustainable Development (ESD) and Global Citizenship Education (GCED) are regarded as crucial transformative elements, reflecting a paradigm shift. The question is, If education can be both adaptive and transformative, as this policy
suggests, which worldviews does this policy promote? A UNESCO policy brief from 2018 states that for education to play a role in halting climate change, it has to be transformative and must support change. According to the brief, national policy has to align with national commitments in arrangements, such as the Paris Agreement, and support a fundamental shift and re-envisioning of values and norms (UNESCO, 2018).

**Finnish Educational Policy Developments**

Finnish legislation and educational policies have a strong tradition of forwarding a worldview grounded in social equality, Bildung, and democracy (Zilliacus et al., 2017). The Bildung approach is based on the ancient Greek concept of paideia. It builds on an anthropocentric humanistic principle viewing human needs as the most primary (Wolff, 2011). Even if Bildung implies individuals’ conversation with themselves, it does not come about without educational actions. Like paideia, Bildung regards the goal of education to change the world to be a better place for humans. According to the idea of Bildung, humans possess intrinsic potentials for self-improvement and the capacity for jointly improving the society.

The Basic Education Act (Finlex 628, 1998, §2) states that education should promote Bildung and societal equality and offer students opportunities to self-develop throughout their life. Furthermore, in the governmental regulation of the national goals of basic education, the aim of education is to promote the development of students as humane and harmonious individuals and citizens, who have good self-esteem and can judge critically (Finlex 1435, 2001, Ch. 2, §2).

Comprehensive school education must be nonpolitical and nonconfessional, the latter meaning that “education shall not demand or lead to religious, philosophical commitment of the pupils” (Finnish National Board of Education, 2016, p. 16). However, the neutrality of the curricula is a contested issue as Finnish schooling has historically had a strong connection to the Lutheran church. Even today, most of the teachers and pupils are members of the Evangelical Lutheran Church of Finland (Zilliacus & Kallioniemi, 2016). Distinctive to Finnish education is that the subjects of worldview education, including both religious and secular ethics education, recognize the diversity of students’ religious and nonreligious worldviews by offering worldview education alternatives. The education must be nonconfessional, and the aim of the curriculum is to support students in developing their own worldview independently. However, in educational practice, some confessional elements have been shown to exist (Zilliacus, 2019; Zilliacus & Kallioniemi, 2016). This question of normativity and socializing students into a certain worldview is a critical educational issue, regarding if and how a certain worldview can or should be promoted (Zilliacus, 2019; Zilliacus & Kallioniemi, 2016).

According to Mäkinen and Kuijala (2017), the Finnish curriculum of 2014 is characterized by the metaphor of social reconstruction, noticing the curriculum as a means to a better world. This is an ethical commitment to transformative ideals. However, the normative aim is not sought by proclaiming certain truths or values, but by a teacher who creates reflective spaces where learners are encouraged to consider a wide range of viewpoints. Hence, individual agency and student self-formation is vital (see Wolff, 2011; Ylimaki et al., 2017). This question of normativity and socializing students into a certain worldview is a generally critical educational issue, and we may ask whether a certain worldview, sustainable or not, can or should be promoted.
The Finnish Constitution clearly expresses sustainability as a core aim. “Nature and its biodiversity, the environment and the national heritage are the responsibility of everyone,” according to the Constitution of Finland (Finlex 731, 1999, §20). Even in 1985, environmental issues and nature protection were noticeably present in the Finnish core curriculum for basic education (Finnish National Board of Education, 1985). Yet, the term “sustainable development” occurred in the core curriculum for this educational level for the first time in 2004 (Utbildningsstyrelsen, 2004). In the National Core Curriculum for Basic Education 2014, sustainability emerges as a fundamental aim (Finnish National Board of Education, 2016). The phrase “sustainable development” occurs in the first paragraph, and the schools have a duty to build a sustainable future. The curriculum regards humans as a part of nature and dependent on vital ecosystems. According to the curriculum text, basic education must foster students for global citizenship and culturally sustainable development. This implies that the students must understand the seriousness of climate change and develop an aspiration for sustainability.

“Participation, involvement and building a sustainable future” is one of seven transversal competencies in the curriculum that students must acquire. Sustainability is likewise a core concept in the other six competencies. These competencies link various fields of knowledge and skills to promote personal growth, studying, work, and activity, also in the future. A sustainable lifestyle is also at the core in the development of school culture. Sustainability is also included in most of the subjects in the Finnish core curriculum. Within the subjects relating to worldview education, the subject of secular ethics has a visible orientation toward sustainability (Koirikivi et al., 2019).

Even though the 2014 curriculum mentions “sustainable” more than 180 times, the curriculum never clearly defines the concept; it attempts to explain it through the concept of eco-social knowledge (in Swedish Eko-social bildning, in Finnish Ekososiaalinen sivistys). Eco-social knowledge is described as follows:

Humans are part of nature and completely dependent on the vitality of ecosystems. Understanding this plays a key role in growth as a human being. Basic education acknowledges the necessity of sustainable development and eco-social knowledge and ability, follows their principles and guides the pupils in adapting a sustainable way of living. Sustainable development and ways of living comprise an ecological and economic dimension as well as a social and cultural dimension. The leading idea of eco-social knowledge and ability is creating ways of living and a culture that foster the inviolability of human dignity and the diversity and ability for renewal of ecosystems while building a competence base for a circular economy underpinned by sustainable use of natural resources. Ecosocial knowledge and ability means that the pupils understand the seriousness of climate change, in particular, and strive for sustainability.

(Finnish National Board of Education, 2016, p. 16)

The curriculum presents the concept of eco-social knowledge as interlinked with sustainable development and a sustainable way of living that includes an ecological and economic dimension as well as a social and cultural dimension. Yet, this perspective is strongly anthropocentric; when it emphasizes the inviolability of human dignity and human’s ability to
renew ecosystems, it comes close to a view of humans as masters over the rest of the “creation” (see Wolff, 2011). It is obvious that the ideas behind the word *eco-social* derive from eco-socialism and the philosophical thoughts of Marx. Eco-socialism is a strong political red/green concept combining socialism and green politics, and it represents a strong objection to capitalism. It asks for a social transformation. The concept of eco-socialism has been present in English-speaking contexts since the 1980s, and *Ökosozialismus* and the adjective *ökosozial* simultaneously in German speaking red/green contexts, often in relation to education and *Bildung* (Borgnäs et al., 2015; Löwy, 2015; Pepper, 1993; Stöhr, n.d.; Wagener, 1992).

An interlinked development to that of eco-social knowledge in the current curricular framework from 2014 includes the broad aim of developing an ethical stance. The framework expands the aim of developing ethical reasoning present in the 1994 curriculum. Key to an ethical stance in the 2014 curriculum lies in relation to oneself, others, and to nature. To develop an ethical stance is seen as fundamental to becoming a humane and educated person. This includes striving for the ancient ideals of truth, goodness, and beauty as well as aiming for justice and peace. The ideals such as democracy and humanism are also strongly present, and they echo the *Bildung* tradition and the 1970 curriculum. To be educated is manifested “in our attitudes to ourselves, other people, the environment and knowledge, in the ways we act and in our willingness to take action. Educated persons strive to act righteously and show respect for themselves, other people and the environment” (Finnish National Board of Education, 2016, p. 16). This is similar to Wolff’s (2011) view of the three ethical dimensions of sustainability education. Accordingly, students must learn to respond to others without prejudice and to value their own and other people’s linguistic and cultural backgrounds. A reflective and critical approach to diversity is also included. The curriculum embraces a development from focusing on transferring cultural heritage to more strongly focusing on students’ abilities to develop a new culture and new ways of thinking (Zilliacus et al., 2017).

In the Finnish curriculum from 2014, signs of a global worldview are clearly visible. The curricular aims obviously include global—rather than limited, national—perspectives, and it widens the ethical perspectives toward a global ethics (Widdows, 2014; Zilliacus, 2019). The curriculum emerges as a policy that creates an imaginary of every student as multicultural and global or possibly even cosmopolitan (Zilliacus et al., 2017). The document is intertextually linked to both national and international legislation and educational recommendations. It does not explicitly mention Agenda 2030 and the SDGs. Yet, global learning lays the ground for a fair and sustainable development in accordance with “the UN’s development goals.” As Zilliacus et al. (2017) claim, transformative aims emerge. However, goals seeking to change existing power and inequality relations in education are largely absent, likewise teacher guidelines on how to promote social equality. Also, relatively fixed views of the students’ worldview development indicate that there is still room to promote transformative aims.

Along with the normative aims of sustainability, the curriculum expresses parallel discourses not necessarily compatible with this idea. The notion of eco-social knowledge normatively promoting a given, political worldview at the same time as the curriculum strives for consensus and worldview openness is controversial. Also, discourses connected to technological development and promoting workforce competencies include aims not necessarily in line with sustainability. The curriculum claims that humans have a responsibility to develop technology that maintains the future of humans and the environment. Education must focus on environmentally related conflicts between conservation and consumption and
“to steer the development of technology into a direction that safeguards the future of humans and the environment” (Finnish National Board of Education, 2016, p. 16). This is a goal that might be in line with sustainability, but it craves further explanation on how it will come true.

**Discussion**

Our analysis clearly shows that the Finnish curriculum calls for change of worldviews for a sustainable future. The aim of education is to promote ecological and economic sustainability combined with a reinforced tradition of enhancing cultural sustainability. There are evident reflections of international sustainability policies and signs of a shift toward worldview perspectives that widen the focus from human-centered to eco-centered worldviews. The worldview changes in question encompass both the individual and society, with transformative features. However, the policies have significant inadequacies when it comes to the scale and pace of the change. We have identified several elements in Finnish education policy that affect the implementation of responses to large worldview quandaries with consequences for the entire planet. The promotion of sustainability is contested because (a) other policy objectives are integrated (also hidden) in the curricula, (b) a gap exists between policy and practice, and (c) the relationship between research and policy is unclear. This last element includes the issues of spaces for radical change, the curricula seldom being research based, and new ideas emerging suddenly in the rhetoric. The most crucial and fundamental problem is that the curricula do not have the most urgent global dilemmas at the core. These critical elements will be discussed further.

**Various Policy Objectives Are Integrated (also Hidden) in the Curricula**

Even if the shift from social democratic to neoliberal political orientations in Finland is not as clear as in many European and Nordic countries (Imsen et al., 2017), this general trend is nonetheless visible in Finnish educational policies, and it interweaves with the policies for sustainability. According to Rizvi (2009), the neoliberal trend can be understood as a social imaginary created and promoted by the global forces of capital and corporate interests rather than a focus on the common good. This mix of different imaginaries creates a problematic policy context for the enforcement of sustainability and transformative worldviews. Educational policy is connected to global markets, especially the labor market, and to international and national policies. International educational policies and trends are replicated in national educational policies, which are also dependent on national policies overall (Lubienski, 2018; Uljens et al., 2016). At a policy level we see that different interests and voices, sometimes diametric, exist in the educational policy. We have noticed this in concepts such as eco-social knowledge and transversal competence in the Finnish curriculum where different discourses do not necessarily align.

The presence of different discourses is also visible in recent policy initiatives. Since the enforcement of the current curriculum, sustainability has strikingly reached the governmental policy level in Finland. The entire program of Prime Minister Sanna Marin’s government in 2019 has the title “Inclusive and competent Finland—a socially, economically and ecologically sustainable society” (Finnish Government, 2019). The Finnish Ministry of Education and Culture has developed its own sustainable development policy, including a section titled “Better knowledge, skills and competence” (Ministry of Education and Culture, 2020). Yet,
even if it focuses on Goal 4 of Agenda 2030, two main concepts in this section are “competence” and “lifelong learning,” concepts common in international education policy, especially in Europe. On the one hand, even if lifelong learning has its roots in Bildung theories, it currently denotes formation of human capital as an investment in economic development (Biesta, 2006). Competence-based education, on the other hand, denotes a shift in education policymaking from inputs to outcomes and aims at educational effectiveness (Lassnigg, 2015). Thus, the education forwarded through these concepts are not necessarily compatible with the aim of sustainability and the worldview change needed. Traditionally, Bildung strives to transform both oneself and the society, and a Bildung that acknowledges humans’ responsible role among other species on the planet is still relevant in contemporary sustainability education (see Wolff, 2007, 2011).

According to Lubienski (2018), education policy networks are marketplaces of ideas for buying and selling ideas, and Simola et al. (2017) underscore the complex discourse dynamics among policymaking, governance, families, educational strategies, and classroom cultures. Lubienski states that “policy objectives are heavily contested by myriad actors in policy arenas” (2018, p. 4). It is not only research that guides the educational development, and it is even questionable if the policy is evidence based. The chorus of voices is diverse and fast-growing (Lubenski, 2018). Writing the 2014 Finnish core curriculum was a long and complicated process involving over 300 authors (teacher educators, educator providers, teachers, school leaders, etc.) (Halinen & Holappa, 2013). Therefore, the result is neither a clearly focused nor an ideologically unambiguously based document.

A Gap Between Policy and School Practice

Gaps between policies and reality is a common problem (Ng, 2008). Therefore, another point of critique lies in that the curriculum lacks guidance on concrete goals on sustainability and how these could be reached in practice. This is in line with Laine (2019), who, arguing from the perspective of cultural sustainability, says that the curriculum lacks teaching guidance and clear learning goals that ensure education that is truly inclusive and simultaneously recognizes different identities and positions among students. Similarly, Siirilä (2016) concludes that implementation has obviously been difficult for teachers regarding sustainability education at large, partly because many concepts and goals are left to the teacher to interpret. The invisibility of the obligations that Finland has committed to for future sustainability is also obvious. The agenda of the National Commission on Sustainable Development (2013), led by the then prime minister, are not included in the curriculum. According to Siirilä (2016), there is a lack of commitment to principles such as global responsibility and acknowledging the limited capacity of nature to sustain the human population.

There are also many other circumstances impeding the implementation of a more sustainable educational policy. The dynamic interaction between diverse levels of governance and various other systems with dissimilar values affects the implementation (Ng, 2008). When local schools implement curricula, they are influenced by diverse aims from various policy levels. This means that schools at the national level are guided by both international and national guidelines that work in a top-down direction. The success of the adaptation process depends on the local actors’ or users’ agency and the sense they make of the policy when they interpret and redefine it (Ng, 2008). A Finnish study by Saloranta (2017) showed that creating
a sustainable school culture is crucial for the implementation of sustainability education. Likewise, the commitment and values of the school leaders and other staff members are most relevant for a successful implementation of sustainability in schools. This is in line with Wals’s (2020) ideas about “the whole school approach” and Kemmis’s (e.g., 2018) “practice architecture” that both highlight the necessity of creating a school environment in which sayings and doings correlate.

**The Connection Between Research and Policy**

Another critical issue for policymaking is the link between research and policy. Sometimes research influences policy and other times vice versa, but this link often remains unclear and underdeveloped. Several Finnish research initiatives developing teaching guidelines and interpretations of the curricular aims emerged after the curriculum came into force. A new framework for climate education, the “Bicycle model,” incorporates a worldview perspective where identity, values, and worldviews form the frame of climate education (Cantell et al., 2019). Current developments within climate education include an effort to move away from a fragmented worldview toward holism and interconnectedness (Lehtonen et al., 2018, 2019; Wolff et al., 2020). This worldview perspective of interconnectedness is notably not explicit in the current curriculum. Another visible development is the increasing emphasis on cultivating creativity and incorporating artistic and intuitive perspectives, as well as emotional awareness (cf. Lehtonen et al., 2019). The role of emotions and values have not been fully recognized in climate change education (Lundholm, 2019) and, similarly, the link between sustainability and well-being (O’Brien & Howard, 2016). Pihkala (2017) highlights the role of emotions in relation to climate anxiety and perspectives on hope for the future. His research exemplifies how the experiences and emotions of children and young people need to be considered as vital in education (see also Wolff, 2011). When sustainability is an issue, knowledge is not enough to guide the actions because emotions are strongly related to values and agency (Tappolet, 2016).

A visible goal in the curriculum in connection to eco-social knowledge is to support the development of systemic and holistic understandings. Current research also brings this aim to the forefront. However, a strong critique of consumerism and capitalist society as an intrinsic part of eco-social education is also present, as is the goal of moving away from a materialist worldview toward and post-humanist worldview (Lehtonen et al., 2019; Salonen, 2012). This perspective creates a radical interpretation of curricular aims of eco-social education, a perspective that is not visible in the curricular discourse. Also, in a more radical vein, Värri (2019) argues for a redefinition of the task of education and a radical rejection of the current ideology of progress. Instead, he proposes ecological wisdom as an educational aim.

Research needs to be one step ahead of the curriculum process. However, curricula are seldom strongly research based, and it is difficult to decipher how research and evidenced knowledge have been integrated in policies. According to Lassnigg (2015), policy tends to bring in new ideas and thus be ahead of research and evaluation. Likewise, research often tends to follow the policy’s footsteps. This means that the research risks standing on shaky ground instead of being based on major educational theories. This links to the question,
Where do the new ideas that emerge in policy come from? New ideas may emerge suddenly in the rhetoric. An example is the concept of eco-social knowledge in the Finnish curriculum, which is strongly political, but this fact is hidden.

A last important question on the link between research and policy is whether policy can lead to radical change of practice. Within both Finnish and international sustainability research, there is an obvious occurrence of more radical transformative approaches and new worldview paradigms that are still absent from Finnish education policy. Some approaches are ontological, and their aim is to refocus humans’ position in the world. Among them are various forms of post-humanism that strive to break the hierarchical pattern between humans and other creatures, even nonbiological things (Hackett & Rautio, 2019; see also Wolff et al., 2020). Other approaches emphasize indigenous worldviews that highlight holistic and different cosmologies built on traditional values (Sepie, 2017). In relation to climate change education, research highlights postcolonial perspectives and the hegemony of Western worldviews. Issues like Whiteness, power, exclusion, and injustices are the focus of these studies (Andreotti et al., 2018). As to the growing research on transformative learning, the cultural-historical activity theoretical (CHAT) perspective on expansive learning represents a growing stream in Finnish research. Expansive learning is about learning something “that is not yet there.” That is, learning where learners as a part of communities are involved in creating and implementing radically new and complex understandings and activities (Engeström & Sannino, 2010). One more expanding research area within climate education is futures studies, which aims to support students by creating a wider awareness and developing future scenarios (Branchetti et al., 2018). The question is if and how a consensus-seeking policymaking process such as the curriculum can incorporate new radical initiatives.

Conclusion: Can Education Policy Promote Worldview Transformation?

In this article, we have discussed unsustainability and climate crises and the quest for worldview transformation that this quandary raises. In addition, we have reflected on the role of education in this process. The most pressing issue for policymaking in Finland and internationally is that the crucial planetary issues need to be put in the forefront. The current curriculum specifically articulates the need for an understanding of the seriousness of climate change. However, the term “climate change” is mentioned only four times in the 550-page document. One may ask whether future policies need to drastically reframe the core aims of education. Taking the human condition into consideration, the question occurs whether the core aim of the comprehensive school should be to give students a general education or if this aim needs to be articulated in relation to humanity being in a crisis. The crisis is an utmost primary concern of survival, which requires changes on all fronts, both in relation to adapting and mitigating and trying to safeguard and protect ecological and cultural life. There is apparently a need for both a reorientation and an action orientation in curriculum reform. The current documents do not reflect how pressing and fundamental the situation is.

A final current question in both sustainability and worldview education research concerns education promoting a worldview grounded in a global ethics. Widdows (2014) argues that a key feature of developing global ethics lies in creating a global scope to ethical questions in which the rights and interests of all world inhabitants are significant. In 2000, the Earth Charter, an international document endorsed by UNESCO was launched as an integrated,
ethical framework for sustainable development. The charter introduced six key “values for human-Earth flourishing” shared by the world religions, including the values of reverence, respect, restraint, redistribution, responsibility, and renewal (Tucker, 2008). However, universal values such as those articulated in the Earth Charter have been questioned on many fronts, and the incommensurability of different worldviews is commonly emphasized in worldview education (McGrady & Regan, 2008; Rissanen et al., 2019). Arguments raised against universal values include that they represent a potential threat to national and local values, connect to various forms of exclusion and domination, are relativistic, and do not recognize worldview particulars (Wieviorka, 2013). However, Wieviorka (2013, p. 1955) proposes that universality can be possible through a conceptualization in which “universal values are not principles ensuring the theoretical inclusion of all, in one and the same world of rules and norms, but values that allow for individual subjectivation and the collective discovery of new possibilities and new horizons.” As such, universal values do not prevent religious and cultural diversity.

Nevertheless, Van Egmond and De Vries (2011) warn about the risk of searching for one new worldview because worldviews can easily be pulled apart and become peripheral and one-sided. Like several other sustainability researchers, they suggest an integral worldview that reflectively strives to include various worldviews as alternatives. In this integral worldview, a fundamental and typically human balance has to be maintained between material and immaterial value orientations and between individual and collective orientations. Instead of remaining implicit, these values and worldviews should become as explicit as possible. That would allow politicians to recognize the centrifugal forces that polarize the public debate and reinforce one-sidedness (Van Egmond & De Vries, 2011).

Climate change affects people and societies all over the world. To solve the extremely complex problems, world citizens need both scientific knowledge and skills to take joint action (e.g., Wolff et al., 2020). To tackle the complexity of challenges raised by climate change, students need extensive knowledge and understanding about the operations of the physical world, societal structures, and power relations. However, knowledge and understanding are not enough as such but need to be discussed and reflected on from an ethical point of view. Education needs to vigorously support students to reshape their worldviews and act responsibly. Therefore, engaging youth in policymaking is an urgent matter. As the youth climate movement has shown a new image of young people as agents of change and architects of future climate policy, educational policy must support education in which the students’ agency is acknowledged, as well as children’s and young people’s knowledge, emotions, and commitments (e.g., Han & Ahn, 2020; O’Brien et al., 2018). Further research on how policies can support worldview transformation in a way that supports students’ agency is needed. A strong educational policy that focuses on solving the contemporary hazardous problems is a precondition for education that can make change.

References


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