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Transformation toward sustainability in Finnish teacher education policy: Promises and shortcomings

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While the state of the world is becoming ever more unsustainable, transformation and transformative learning have become increasingly relevant and raised attention in various sustainability education discourses. This is obvious in both policy and research. As teacher educators, we have studied how this sustainability and transformative education trend is visible in education policy. We have first read international policy and research on sustainability education and transformation. In a more thorough study, our focus has been on two recent and fundamental policy documents outlining the Finnish teacher education. Our results show that even if several UNESCO policies documents for years have called for a transformation toward sustainability through education, the Finnish teacher education policy has not yet fully acknowledged sustainability issues and teachers' transformative agency in addressing them, but emphasize other aims. Therefore, it is mainly up to the individual teacher educators and the leaders of their faculties to decide on how to prepare student teachers not only to deal with changes in general, but to particularly bring about changes towards sustainability.

KEYWORDS

transformation toward sustainability, transformative learning, sustainability education, sustainable future, 21st century skills, teacher education policy, teacher education, Finnish education

Introduction

Transformation can be understood as a change at the personal, social, and planetary levels. When it comes to education, transformation can simply refer to education as a tool for change, but it can also imply transforming education itself to make it a better change initiator. The latter is a broad undertaking, which concerns all levels of education and starts from policy. Undeniably, the environmental crisis with an obviously changing climate and a widespread pandemic calls for a transformation in the ways many people live, think and act. To reply to this call, the transformation must take place in both personal lives and as collective activities acknowledging unsustainability and striving

toward a just and equal society, as well as creating viable ecological conditions. The focus must be on every part of society now and in the future. Specific local interests must not hurt interests of other regions. In addition, education as a social phenomenon requires a transformation that considers contemporary sustainability discourses. For years, UNESCO has promoted education, and especially 'Education for Sustainable Development' (ESD), as a transformation power to improve the world order and shape a better world (UNESCO, 2021).

It is easy to become overwhelmed by these words, but they are political rhetoric, and need to be read critically. In the overall sustainability and transformative discourse, multiple narratives appear in which the views on what sustainable is, and what transformation is and what it aims at, differ. One narrative is advocated by the *Club of Rome* (Meadows et al., 1972) and supports a radical transition to a more resource-efficient economy, or what the authors call a change 'from growth to equilibrium'. However, they are both hopeful and skeptic:

> ". . . any deliberate attempt to reach a rational and enduring state of equilibrium by planned measures, rather than by chance or catastrophe, must ultimately be founded on a basic change of values and goals at individual, national, and world levels. This change is perhaps already in the air, however, faintly. But our tradition, education, current activities, and interests will make the transformation embattled and slow" (Meadows et al., 1972, p. 195).

This quotation shows that education is not an easy path to sustainability. In addition, the growth of the sustainability discourse has stirred criticism. While the sustainability concept has become universal, its critics have increased in numbers. The arguments used are that the notion is 'too boring' to attract attention, 'too vague' to offer guidance, and 'too late' to meet the large contemporary problems (Dernbach and Cheever, 2015). Nonetheless, Dernbach and Cheever (p. 286) mean that it is too late to discuss the relevance of the sustainability concept, since "understanding of sustainability is not one of many trains that are parked in the station waiting for passengers; the train left the station more than two decades ago." Instead, the relevant question is *how*. Some environmentalists and researchers claim that transitions to more equality and nature acknowledging politics are not enough if the operating model for society remains hierarchical (e.g., Finley, 2019). However, there are positive experiences of involving grassroots innovations (Belda-Miquel et al., 2020), and youth climate movements are gaining strength. Young people from the entire world have started to blame adults for their indolence and the political processes for being too slow (e.g., Zummo et al., 2020). They have collectively started to take a stand and are acting to change the world order (e.g., Bhashyam, 2021), and many are inspired by the young Swedish climate activist and, thus, struck by the so-called 'Greta Thunberg effect' (Sabherwal et al., 2021) and her 'global transformational leadership' (Nässén and Rambaree, 2021) and 'extraordinary agency' (Stoecklin, 2021).

Undeniably, it is time for change, even if *how* must be discussed. In this change process, education has an important role. Bell (2016) stresses the necessity to prepare for the future by viewing 21st century education through a sustainability lens. He emphasizes that conventional teaching needs to become transformative to encourage a more sustainable life on the planet. This is also in line with Cohen et al. (2002) who point out the need for a changed education system to secure a sustainable future, and that this demands a changed teacher education, which in many countries is part of higher education (see also Shephard et al., 2015). However, "is higher education capable of promoting learning for change?", and "can transformative learning nurture spaces for innovation in education for sustainable development?" Balsiger et al. (2017, p. 357) ask (see also Moore, 2005). Nevertheless, Weinberg et al. (2020) argue that education is a critical element in a global transformation toward sustainability and is urgently needed to stabilize socio-ecological systems worldwide. Yet, education is also identified as a problem causing more harm than good when it comes to sustainability (Hopkins and McKeown, 2005; UNESCO, 2005; Balsiger et al., 2017). To change education into a solution "requires a deeper critique and a broader vision for the future" (UNESCO, 2005, p. 59).

At a personal level, transformation through education includes developing new understanding and habits, and adapting a critical attitude. Such a change happens in transformative learning, and concerns altering the frames of reference through critical reflections of both habits of minds and points of views (Mezirow, 1990, 1991; Ananiadoui and Claro, 2009). Therefore, addressing the quest for educational change is all but easy if it does not concern worldviews (Shephard et al., 2015), and involve teacher education (Wolff et al., 2017). As Zilliacus and Wolff (2021) argue, there is a pressing need at all educational levels to support a profound worldview change as a response to the environmental and climate emergency. This position not only calls for a transformative change at individual and societal levels in schools and other educational institutions, it also calls for teacher education to revisit the notion of transformative learning (see also Varpanen et al., 2022). Yet, even if sustainability education, education for sustainable development (ESD), global citizenship education (GCED), and issues like human rights, peace and inter-cultural understanding are visible in teacher education, they are often only included in optional courses (Bourn et al., 2017; Cockerell, 2020). Civil society organizations and policymakers outside education are those who have had a major influence on the practices of ESD and GCED within teacher education, not only educational policy makers (Bourn et al., 2017). In addition, the practical implementation has been in focus in teacher education, while deep theoretical perspectives

and values are neglected, according to Evans et al. (2017). Therefore, the need for reflexivity and critique is pressing (Evans et al., 2017), given that the aim is to enable in-depth understanding.

A recent UNESCO study including data from ten countries shows that ESD is mostly implemented as scientific knowledge, which is not enough to promote transformation (UNESCO, 2020). For that reason, the UNESCO report states that education must start to transform itself. Sustainability in teacher education is an emerging area and it is still theoretically weak (Evans et al., 2017). Teacher education must start transforming itself and develop methods based on both theoretical and empirical research.

Undeniably, it is urgent to not only examine the theory and practice of sustainability and transformative learning *per se*, but also to study and discuss how these targets are included in teacher education leadership and policy. Both international and national educational policies address sustainability and transformation, but there are also many other aims that are striving in other directions. Internationally, the *2030 Agenda for Sustainable Development* with its 17 goals (SDGs) and 169 sub goals is the most important sustainability education policy document. The role of sustainability is increasing in many countries, and besides other policies, the curricula at various levels are important control documents. Yet, even if some voices express that Agenda 2030 is not radical enough (see Wolff, 2020), its message is still far from being a central interest in all educational policy, and it may even be absent in teacher education policy. The policy is a strong rhetorical performance in which many issues, especially ideas related to a specific worldview, are beyond debate and discussion (Levin, 1998; Edwards et al., 2013; Zilliacus and Wolff, 2021). According to Levin (1998), educational policy development is not a story of mutual learning, but more like epidemics (outbreaks of disease) that spread from country to country.

> "Politicians, policy advisors and members of 'think tanks' migrate around the globe spreading certain messages" (Edwards et al., 2013, p. 169).

In that situation, sustainability education easily draws the shortest straw. Teachers play an important role in any educational reform in general (e.g., de Vocht and Laherto, 2017), and particularly in the sustainability transformation process. Therefore, the authors of this article, as lecturers and researchers with a diverse subject background have undertaken this study. Our interest is how the policy of a specific system of teacher education, namely the Finnish education of teachers (early childhood educators, primary, subject, and vocational teachers) has integrated sustainability and transformation toward sustainability in its strategies. By this choice, we want to present an example of the situation from the view of a country with a high performance and renowned academic teacher education. A few earlier studies have focused on Finnish teacher education study programs (Hofman, 2012; Cockerell, 2020), the student teachers' change agency (Koskela and Kärkkäinen, 2021), student teacher preconceptions (Furu et al., 2018), obstacles for implementing sustainability in teacher education (Wolff et al., 2017), and curricula and educational policy in general (Jónsson et al., 2021). This study uses new lenses, and wants to shed light on the situation focusing on teacher education policy. More precisely, the aim of our study is to examine how the quest for sustainability and transformation in international educational policy by UNESCO is manifested in Finnish teacher education policy.

Policy request on transformation through education

Since the beginning of the 1970s, international sustainability policy has emphasized the role of education. Respectively, education policy has tried to include sustainability. Conferences have taken place and a myriad of policy documents on various levels have been published with sustainability and education as targets. In addition, many international guidelines on sustainability education refer to transformation and transformative learning. A few of them focus on teacher education. Yet, there are also other strong economic and political ambitions concerning education.

International general guidelines

In 1987, the report, *Our Common Future,* the *World Commission on Environment and Development* (WCED, also called the Brundtland Report) pointed out sustainable development as a political aim for all segments of society, not the least for education (World Commission on Environment and Development [WCED], 1987). The aim of this report is global, envisioning a better future for all humans and calling for new values and norms at all levels of society. However, the report does not diminish the technological and economic progress. In *Caring for the Earth* published by IUCN (International Union for Conservation of Nature), UNEP (United Nations Environment Programme), and the WWF (World Wildlife Fund) 1991, the concept sustainable development is "improving the quality of human life while living within the carrying capacity of supporting ecosystems" (International Union for Conservation of Nature [IUCN]/United Nations Environment Programme [UNEP]/World Wildlife Fund [WWF], 1991, p. 4). In collaboration with many other organizations, like the IUCN, and the WWF, UNESCO (United Nations Educational, Scientific and Cultural Organization) have been active in developing education in relation to the sustainability challenges (Wolff, 2011). Today UNESCO publishes most of

the international policy documents that relate transformation to sustainability and sustainability education. Other education policy documents may relate transformation to other aims. Among several UNESCO publications stressing transformative learning, one is *Education for Sustainable Development: A Roadmap* (UNESCO, 2020). Other important documents are *A Decade of Progress on Education for Sustainable Development*: *Reflections from the UNESCO Chairs Programme* (UNESCO, 2017), *UNESCO Global Action Programme on Education for Sustainable Development* (UNESCO, 2017), and *UNESCO Teaching and Learning Transformative Engagement* (UNESCO, 2019).

Between 2005 and 2014, the *UN Decade of Education for Sustainable Development* especially emphasized the role of education in the sustainability process (UNESCO, 2017). The aim was that the member states should implement sustainability education through the so-called *Global Action Programme on ESD* (GAP). Educational ministers and educational institutions were invited to create knowledge jointly and to broaden education for sustainable development.

A few years after the decade, the UNESCO roadmap (UNESCO, 2020) stresses education for sustainable development (ESD) as an integral element of the *Sustainable Development Goals* (SDGs, see United Nations [UN], 2015a,b), and simultaneously a 'key enabler' of all the other goals. This document sees education at all its levels as central to the implementation of the SDGs and addresses as the major actors in the sustainability process, education policy makers at institutional, local, national, regional, and global levels. Once again, the especially important target is the national ministries of education. Among the main targets, the document also underscores university leaders, and requests interdisciplinary, transdisciplinary, and whole-institution approaches. In addition, the roadmap announces that every 4 years, the United Nations (UN) member states must report how they have implemented SDG 4.7.1 (global citizen education and ESD national education policies, curricula, teacher education and student assessment) (UNESCO, 2020). This means that the country of our study, Finland, is obligated to show steady progress in the teacher education sustainability policy.

Education policy documents other than those published by UNESCO stress change to aims other than sustainability, such as documents that first and foremost emphasize economic development. For a long time, education has had a major role in improving national economic welfare (Levin, 1998), and various concepts have been used to emphasize this aim. Noticeably, many international policy documents stress competence for the twenty-first century (e.g., Organisation for Economic Co-operation and Development [OECD], 2005; Ananiadoui and Claro, 2009; European Commission [EC], 2021).

In the United States of the 1980s, the '21st century skills' concept was coined to address the various abilities required by the business community, such as interpersonal and problem-solving skills rather than traditional subject knowledge (Griffin and Care, 2014). Accordingly, the so-called '21st century skills' were initiated by market-oriented thinking, and the societal and economic changes caused by globalization. Economic organizations, like OECD (Organisation for European Economic Co-operation), are the main drivers behind this development (Ananiadoui and Claro, 2009).

The slightly indistinct set of 21st century skills has been embraced as being crucial in educational systems in many countries (Ananiadoui and Claro, 2009; Bellanca and Brandt, 2010). The sets have had an impact on educational policy, practice and research, not least in relation to higher education (Tight, 2021). During the last few decades, the 21st century skills thinking has accelerated due to the rapid development of information and communication technology (World Economic Forum [WEF], 2015). Therefore, these skills will facilitate the future workforce in keeping up with an increasingly digital and globalized competitive arena (e.g., Howard, 2018). At national and regional levels, the European Union and North America have emphasized and promoted the 21st century skills for teacher education and higher education (Coalition of Urban Serving Universities [AUSU], and Association of Public and Land-grant Universities [APLU], 2019; European Commission [EC], 2021). For instance, the *Joint Research Centre* (JRC) of the *European Commission's Science and Knowledge Service* focuses on '21st century skills,' 'innovating and modernizing education and training,' and 'open education' to address the *Learning and Skills for the Digital Era* (European Commission [EC], 2021). The JRC's Learning and Skills projects also cover multiple levels in the EU region, such as individual learners and educational professionals (micro), educational organizations (meso), and societies (macro) (European Commission [EC], 2021).

However, new thoughts have steadily emerged in the 21st century discourse, and the conceptualization changes. Thus, many similar concepts exist, and they are often used as synonyms, for example 'future skills,' 'generic skills,' 'key competencies,' 'core skills,' 'transversal skills,' 'transferable skills,' 'soft skills,' and several others (see, e.g., Martin, 2018; Viinikka et al., 2019; Tight, 2021). The concept that extensively is used in Finnish higher education in 2022 is 'generic skills' (see, e.g., Jääskelä et al., 2018; Ursin et al., 2021). The 21st century skills are listed in many ways, and this is only one of them: (1) *Ways of thinking*: creativity and innovation, critical thinking, problem solving, and decision making, learning to learn, and metacognition; (2) *Ways of working*: communication, collaboration (teamwork). (3) *Tools for working*: information literacy, ICT literacy. (4) *Living in the world*: citizenship (local and global), life and career, personal and social responsibility (incl. cultural awareness and competence skills) (Binkley et al., 2012). There have also been attempts to list and name the skills so that they all start with the letter 'C' (the 7 Cs) (see Tight, 2021), which shows the influential position of

the English language and English-speaking countries in this discourse.

In relation to sustainability, the '21st century skills' synonym 'key competencies' (also referred to as 'key competences,' even if the English word competence does not have any plural form) is common both in European research and policy, also in higher education contexts (see Wals, 2014; Novo and Murga-Menoyo, 2015; González-Salamanca et al., 2020; Jaakkola et al., 2022). In addition, the words competence and competency are often mixed, even if they do not mean the same thing (Salman et al., 2020; Arifin, 2021; Jaakkola et al., 2022). The quest for 21st century skills are mixed with the sustainability attempt, and transformative learning (see e.g., European Commission [EC], and Joint Research Centre [JRC], 2022), of which the two first are political concepts and the third theoretical.

The *European Commission* has worked with the EU member states to support and reinforce what the Commission calls 'key competences [*sic*] and basic skills for all' as a part of its Lifelong Learning policy (European Commission [EC], 2018). These "key competences include knowledge, skills, and attitudes needed by all for personal fulfillment and development, employability, social inclusion, and active citizenship." A noteworthy approach is the European Commission's 'science for policy report' *GreenComp: The European Sustainability Competence Framework* (European Commission [EC], and Joint Research Centre [JRC], 2022). In this report the authors aim at developing a 'European sustainability competence framework' as policy actions set to promote sustainability learning in the European Union. GreenComp distinguishes sustainability competences [*sic*] that will "help learners develop knowledge, skills and attitudes that promote ways to think, plan and act" (Abstract, n.p.). However, transformative learning is also shallowly included as an approach in this framework. This shows how concepts and theories are freely mixed, when behavioristic aims are intertwined with critical transformative objectives, and the faith in skills and competence. According to Arifin (2021), competency is a set of knowledge, skills, abilities, attitudes, and behaviors, whereas competence is the ability to meet specific performance criteria. Yet, there are many other interpretations.

As Kuusisaari et al. (2021) note, the inclusion of 21st century competencies and skills in national curricula might be considered, on the one hand, as a political way to manage and control human capital through education. On the other hand, these competencies might generate necessary future skills. It is much up to how the competencies are interpreted, implemented and what the policy of the context is. Is it overall aiming at sustainability? (see also Burns, 2018). It is also a distinction between if transformation toward sustainability is addressed as a norm or as an open-ended continuous discourse (see Wolff et al., 2020).

In the book *Deeper Learning: Beyond the 21st Century Skills,* the editors Bellanca and Boss (2015) want to take a further step and stress the *depth* of education. Even if the many authors of the book do not agree about what deep learning is, Chow states in the preface that all authors believe that students must be prepared to meet a radically different world with environmental and social problems. Still Chow (2015, p. 11) sees as the principal challenge of contemporary education and the aim of the entire book "how to achieve excellence and how to do it equitably, rapidly and at scale." In the OECD document *Teaching as a Knowledge Profession: Studying Pedagogical Knowledge Across Education Systems* (Ulferts, 2021), "teaching is the mother of all professions," and the document emphasizes that teachers need deep knowledge to meet transformative challenges, such as COVID-19. Yet, sustainability is not an issue in the document.

There are also many critical voices to the 21st century skill discussion. Howard (2018) is critical to the 21st century skills, as well as to the later '21st century learning,' and overall, to the ideas of deep learning and new pedagogies for the 21st century. As an alternative, he emphasizes deep transformation, and education aims associated with living systems and life values. He means that an emphasis on 21st century skills is "sustaining a view of education that is contrary to the flourishing of life" Smith (2020, p. 159). Dishon and Gilead (2021) request a greater focus on normative questions:

> "[w]ithout grounding education in precise and substantive values, an education that aims solely at developing skills fails to fulfill the aims it was intended to achieve – adaptability to a complex and constantly changing world" (p. 409).

Dishon and Gilead (2021) call for a stronger emphasis on what has taken place in the past when discussing the future. They also want to view the future as something that education can have an influence on. According to Howard (2018), the current situation raises the *why* question of education. He finds this question much more crucial than to aim at an instrumental transformation, which may refer to addressing a series of educational goals such as 21st century skills, economic returns of higher education, national or regional competitiveness, and anthropocentric preoccupation on solving the core sustainability issues. People with merely cultural and social skills might not be prepared to build a sustainable future, not even if they are able to interact and think critically. Such skills are essential, as are learning to learn, and expression skills. Yet, Sterling (2011) claims that although 'learning to learn' is an important educational practice, it does not necessarily address context criticism or reflexive learning. Consequently, how the 21st century skills are implemented, definitively depends on the values of the educational institutions (Wolff et al., 2020). The basic values, and the basic aim of education need to be reflected on and deliberated. Questions like what the meaning of education is, what future society the current generations are aiming for, what education future teachers will need, and what the transformation is for, become most relevant.

Teacher education as policy target

A technical UNESCO paper focusing on especially teacher education is *Guidelines and Recommendations for Reorienting Teacher Education to Address Sustainability* (Hopkins and McKeown, 2005). This document is a result of the collaboration between 30 teacher education institutions between 2000 and 2005. The network made efforts to highlight sustainability within teacher education curricula, programs, policy, and practices to make teacher education adequate to what is needed for the environmental, social and economic aims of the institutions' communities, regions and nations. Many members of this network constantly stressed the need to act and to deeply change teacher education and one member even called for a total transformation of teacher education. (Finland did not participate in this work).

Another document called *A Decade of Progress on Education for Sustainable Development* (UNESCO, 2017) highlights as its main targets: educational and sustainability policy that integrates national and international guidelines, a holistic transformation of learning environments, capacity building among educators and trainers, mobilization of youth, and local networking. Transformation is visible, but the document *Teaching and Learning Transformative Engagement* (UNESCO, 2019) has a stronger transformative profile. Instead of elaborating with the theoretical transformative learning concept, the document uses 'transformative engagement' and thus succeeds in dodging a deeper theoretical discourse. In places, the rhetoric is clearly normative, such as when stressing what knowledge, skills and competencies education institutions should promote, and through what platforms, as well as what an effective education is in that regard. The publication identifies a possible transformation at two levels for how to promote youth engagement and various approaches to social, economic and political interaction. A teaching and learning approach can center on a personal transformation, such as identification of gaps between beliefs and reality, internalization, and empathy-based actions. For social and political interaction, the teaching and learning approach can promote duty-based, justice-driven, and liberatory youth engagement that takes place across digital platforms and civil society platforms in formal or informal settings. Finally, according to the agenda put forward by the *5th UNESCO Forum on Transformative Education for Sustainable Development, Global Citizenship, Health and Well-being* UNESCO (2021), "transformative education involves the teaching and learning geared to motivate and empower learners to take informed decisions and actions at the individual, community and global levels" (p. 2).

Finnish teacher education as an example

Finland is a country with a reputation for offering 'miracle' education (e.g., Niemi et al., 2012). However, as Schatz et al. (2017) note, although the Finnish education 'brand' has gained international attention by performing well in the PISA assessments (the OECD's Programme for International Student Assessment) 2000–2009, recently ranking has been less outstanding for Finnish learners (e.g., Schleicher, 2019, p. 11). Furthermore, although Finnish society stress both research and policy concerning sustainable development, the average annual carbon footprint per capita is high due to the amount of energy and food (esp. dairy) consumption, and a high mobility (Akenji et al., 2021). However, as a member of the United Nations, and signatory to many agreements on sustainability, the Finnish educational system including teacher education needs to participate in the transformation towards sustainability through education (UNESCO, 2020). Finland has been active in this field in many arenas.

While UNESCO provides an international education agenda that largely targets global issues (e.g., climate change and sustainable development goals), member countries often support and work together to address these issues through national education policies. Finland has both produced several of its own environmental and sustainability education strategies and has participated in collaboration on policy development with other countries. Therefore, Finland has collaborated within the Baltic region (with the eight other countries surrounding the Baltic Sea: Denmark, Estonia, Germany, Latvia, Lithuania, Poland, Russia, and Sweden. In addition, there has been collaboration at the Nordic level (with the four other Nordic countries: Denmark, Iceland, Norway, and Sweden), and Finland has been active as a member of UNESCO (see, e.g., Jónsson et al., 2021). In general, these policies underscore teacher education as an important target. Environmental education was stressed as a task for all the society in a national UNESCO strategy on environmental education in 1992 and as an obligatory issue in Finnish teacher education (Suomen UNESCO-toimikunta, 1992). Yet, this has not been realized 30 years later, but there are still many obstacles that hinder a thorough implementation of transformation towards sustainability in Finnish teacher education (Wolff et al., 2017; Cockerell, 2020; Jónsson et al., 2021; Koskela and Kärkkäinen, 2021).

All Finnish teacher education takes place in higher education institutions. Early childhood educators have a bachelor's degree (180 ECTS), while primary, lower secondary and upper secondary school teachers have a master's degree (300 ECTS). Vocational teacher education is based either on a bachelor's or a master's degree. Only the universities

offer master's degree teacher education, and the teaching must be research based. One central obstacle is the academic freedom, for better or worse, at the universities in Finland. Wolff et al. (2017) found the following reasons for neglecting sustainability in Finnish teacher education. First, sustainability conflicts with overall trends in society and politics since Finland is a rich country with mass consumption as a lifestyle. Second, as it is university based, Finnish teacher education must conform to the *Bologna Declaration* and thus the aim is to make student teachers more competitive in the world educational market (see European Higher Education Area [EHEA], 1999; Diogo, 2016). Third, sustainability is complex and interdisciplinary, but based on a long tradition, university education is divided into disciplines and has split curricula that complicate the implementation of sustainability topics. Fourth, sustainability is difficult to understand because it strongly relates to ecological literacy. To understand the environmental problems in all their complexity and thus relate to both social and ecological factors a basic ecological understanding is needed. Fifth, sustainability is a value dependent topic entwining nature and social dilemmas, which actualize even extremely difficult normative questions. According to Wolff et al. (2017), the Finnish universities must acknowledge and overcome these hindrances to become forerunners in the sustainability education process.

However, student teachers no longer stand aside and wait for sustainability education. Among the aims of the *Teacher Student Union of Finland* (SOOL, n.d.) in 2019 was to have sustainable development integrated into Finnish teacher education, and, thus, the teachers' roles as sustainable lifestyle models is underscored (Jónsson et al., 2021). In 2019, SOOL challenged the Finnish teacher education universities and polytechnics (vocational teacher education) to include climate change and sustainability education in their study programs (SOOL, 2019).

In the context of this article, Finland is a member of the *UNESCO Executive Board* (2017–2021), which is one of the UNESCO decision-making bodies. The current priorities of UNESCO focus on the implementation of the *2030 Agenda for Sustainable Development* (United Nations [UN], 2015b; UNESCO, 2020), which focuses on (i) the education 2030 process, (ii) science for sustainable development, (iii) cultural diversity and inter-cultural dialog, (iv) access to information and freedom of expression. Since Finnish teacher education takes place in higher education institutions, Finland's higher education policy simultaneously aims at developing higher education institutions into internationally competitive entities, in which each institution also responds flexibly to regional needs (Diogo, 2016; Ministry of Education and Culture, 2021, n.p.). Moreover, the *Ministry of Education and Culture* specifies five target areas and strategic objectives, of which three are related to the UNESCO current priorities in the following areas:

> "The activities of universities and universities of applied sciences promote Finnish competitiveness, well-being, education and learning as well as sustainable development."

> "The higher education institutions exercise foresight and help regenerate society, culture and working life and make sure the required highly educate workforce is available."

> "The objective is to establish a higher education system that is of a higher standard and more international as well as more influential and effective than at present." (Ministry of Education and Culture, 2021, n.p.)

In addition, the other two higher education policy objectives are oriented toward the international level. For instance, the aim of the higher education policy is to establish a more international, influential and effective higher education system than at present, and international and attractive learning and research environments (Ministry of Education and Culture, 2021). Overall, these objectives on higher education policy are intertwined with teacher education. Finland's aim is to safeguard the openness of research and science, make full use of the opportunities offered by digitalization, and "improve the quality of education by revamping education content, teaching methods, learning environments and the competence of teachers, as well as to increase cooperation" (Ministry of Education and Culture, 2021, n.p.). Although 'quality of education' is not elaborated and specified, the above target areas and strategic objectives may suggest instrumental transformation as a response to social change and global problems.

The Finnish *National Core Curriculum for Basic Education 2014* (Finnish National Board of Education, 2016) conveys the metaphor of social reconstruction, with the curriculum being a means to a better world (Mäkinen and Kuijala, 2017). According to Zilliacus and Wolff (2021), this principle constitutes an ethical commitment to transformative ideals that aim for normativity. Instead, the teacher needs to shape reflective spaces to encourage the learners to consider a wide range of viewpoints, rather than to choose ready-made options. This raises a critical educational issue about whether a certain worldview, sustainable or not, sets the ground for sustainable education (Zilliacus and Wolff, 2021). In addition, it leads to the question about what the vaguely yet widely used transformative learning concept may encompass, as policy in general lacks theoretical bases and concept descriptions. In contrast to the skills and competence concepts we have presented above, the *Transformative Learning Theory* is based on a foundation of great number of philosophical, psychological and educational theories. Built on the first transformative theory basis several researchers have spent years developing a learning approach suitable for adult learners (Wolff, 2022). Below we will give an account on transformative learning by drawing on the

development of the transformative learning theory, critiques and current interpretations.

Multiple perspectives on transformative learning

While transformative learning has become ubiquitous in sustainability education literature and policy documents, at the same time it has become problematic due to multiple interpretations of the term in both research papers and policy documents. Therefore, consensus is lacking concerning what constitutes transformation and how transformative learning relates to sustainability education and teacher education. In addition, the interpretation of the transformative learning concept is often vague. Since transformative learning especially is interpreted and used shallowly in relation to sustainability education (Rodriguez Aboytes and Barth, 2020), we will now discuss what transformative learning implies. However, in a short article like this, the description cannot be very deep.

The transformative learning theory

Transformative learning was initially created as a response to the needs of teaching and learning as a meaning making process that could make a change, and the theory was created explicitly for adult learning situations. Several practitioners and theorists have discussed transformative learning drawing from the field of education and the social sciences. Transformative learning is a blend of basic educational theories, and therefore the emergent perspectives are multiple. For a start, Mezirow's seminal work on transformative learning draws from Habermas' *Theory of Communicative Action*, from Freire's idea about critical consciousness as well as from many other thinkers (e.g., Mezirow, 1991).

Jack Mezirow started to develop transformative learning arguing against what he regarded as being a learning approach that was too instrumental. According to Mezirow (1991), transformative learning defines the process by which the individual learns to critically and reflectively reason about meaning and values instead of passively adapting to values set by others. Thus, transformative learning is about meaning making, and in addition, about coherently interpreting experiences. In this way, the adult learner considers former assumptions and repressions and starts to reflect critically on presumptions used for arriving at 'truth,' and even change perspective and solve problems in alternative ways (perspective transformation, in Mezirow's, 1978, terms). In education, value-laden topics and intense experimental activities can trigger critical reflection and promote change as a consequence (Taylor, 2009). An aim of transformative learning is that presuppositions like social norms, language codes and ideologies become detectable and open for change (Mezirow, 1991).

In a social learning situation both the learners' prior experiences and actual joint activities encourage critical reflection, empathy and dialog. The reflections occur at three levels, as a reflection on content, on process, and on premises (Mezirow, 1990, 1991; Taylor, 2009). The last of these three (reflection on premises), is the foundation, as it might include questioning fundamental worldviews. Reaching such a reflection level might be strongly emotional and penetrate deeply hidden traumatic experiences. In addition, it is time consuming. However, transformative learning takes time; it is allowed to do so (Taylor, 2009).

Although Mezirow's work offers solid ground and integrates transformative learning into the field of adult learning, it has met criticism for being a proponent of mainly western values and understandings of transformation (Cranton and Taylor, 2012; O'Sullivan, 2012; Gilpin-Jackson, 2014). For instance, unlike Freire's pedagogy that aims to address the needs of the oppressed, Mezirow's work has been scrutinized for its individualistic character that sets it apart from collective action. In addition, Mezirow's approach is a linear, rationalized version of transformative learning that has been criticized for disregarding issues of, for instance, inequalities about gender, class and race (e.g., Irving and English, 2011). This creates a gap in adult learning and raises the question about who the adults are that the transformative learning should aim at and for what purposes.

Although Mezirow and Taylor focus on the intra-personal and inter-personal levels of transformative learning, Lange's (2019) conceptualization takes a different direction, toward a more systemic approach to transformative learning. Lange identifies three change levels of transformation in sustainability education. The first level is a change in the individuals' thoughts through critical reflection that often takes place in dialog with other learners. This 'micro level change' is in accordance with Mezirow's' view of transformative learning (e.g., Mezirow, 1990) and Immanuel Kant's appeal for people to think for themselves (see Kant, 1784). Lange calls the second level 'meso level change' and describes it as a change beyond the individual including an understanding of the human role in the world in a larger perspective. This level is challenging since it may awaken emotional pain. However, it is triggered by alternative methods, like art-based activities. It is also the level that is the most important from a sustainability view. This level "requires incorporating a cosmic horizon, drawing from older wisdoms, celebrating life systems of the Earth, interspecies awareness, and helping learners see their presence within a much larger historical process of geological evolution, human cultural development, and scientific-technological development" (Lange, 2019, p. 6).

The third level on Lange's list follows Paulo Freire's notion of critical consciousness (see Freire, 2021). At this

level the transformation involves structural changes on economic, technological, political, and even ideological grounds. Transformative learning is then a process in which the learners develop awareness of far-reaching power structures and develop agency to transform society, even if the context is a familiar environment (Lange, 2019). According to Lange, the current unsustainable situation demands deep ontological and epistemological changes. Other scholars have also developed transformative learning approaches that focus on social change and ideological critique (Mezirow, 2009; Taylor, 2009).

To summarize, the levels Lange (2019) presents progress from a critical personal perspective to a joint planetary responsibility. Nevertheless, the distinct levels interact and multi-faceted considerations on transformation can be promoted simultaneously. This may sound promising, but transformative learning is no quick fix. It is a demanding learning and teaching approach that it is all but easy to implement in various educational settings (Taylor, 2009), especially higher education (Lange, 2019). Even if the intentions are set high, the implementation may fail. Unfortunately, this circumstance is often forgotten or hidden in sustainability education discourses, not the least in policy and research. Nevertheless, there is a clear request for a wide range of deep transformative learning approaches.

Current interpretations of transformative learning

A planetary view of transformative learning takes in the totality of life's context beyond the individual and addresses fundamental issues in the field of education on a larger scale (O'Sullivan, 1999; Taylor, 2009). Casebeer and Mann (2017, p. 234) argue that a planetary view of transformative learning addresses human experience beyond the individual, and therefore, a planetary view offers a holistic conceptualization of transformative learning. Such a view "seeks to reorganize the entire system, not only in the context of education and society, but also in the wider context of politics, industry, and the environment." This view recognizes the interconnectedness between the Universe, the planet, the natural environment, human communities, and a personal world. It is most significant to recognize the individual not just as a social-political prospect but also from an ecological and planetary view. As O'Sullivan (2003, pp. 326–327) notes, transformative learning means that the fundamental task of education is to create a sustainable planet environment for interdependent life forms, rather than emphasizing a global competitive market.

Current new materialist thinking brings also these multiple strands together in discourses that adopt a multi-disciplinary approach. For instance, Burns' (2018) consideration on transformation as a relational process is in alignment with the need stressed by new materialist thinkers (e.g., Barad, 2007; Geerts and Carstens, 2019; Oinas, 2021) for education grounded upon a relational ontology. A relational ontological orientation seeks ethical responses to bodily entanglements and material assemblages and is based on the principle that these are co-constituted in relation to multiple others, human and more-than-human. Under this lens, Lehtonen (2021) also argues for a relational ontological orientation to sustainability education (relational sustainability). In this sense, transformative sustainability is also relational, aiming to interconnect different standpoints (e.g., cultural, social, and ecological) of sustainability (see Wolff, 2022). Therefore, the stake is not only to find out how to make such interconnection possible. In addition, it is about how the process of interconnecting sustainability can become a transformative experience. The ontological orientations and underlying assumptions in policy documents set the overall goals and aims for teacher education.

Considering these arguments along with the need for transformation that the environmental and other crises dictate, we now aim to investigate current conceptualizations and practices of transformative learning in a particular national sustainability education policy. Through this example from Finland, we hope to make visible the route from international sustainability policy to national, and how sustainability and transformation are dealt with in national educational policy.

Materials and methods

The aim of our study was to examine how the quest for sustainability and transformation in international educational policy by UNESCO is manifested in Finnish teacher education policy. As argued in the previous sections, teachers play a crucial role in any educational reform, and national level policies on teacher education are an important yet under-researched factor. Therefore, we address the needs through two research questions:

(1) How is sustainability represented in Finnish policy on teacher education?
(2) How does the Finnish policy on teacher education reflect the call for transformation toward sustainability?

To respond to the research questions, we chose to analyze two high-level policy documents that set guidelines and evaluate Finnish teacher education at the national level. While the Finnish educational system, including teacher education, is relatively decentralized, these two documents are the most influential nationwide policy documents on teacher education at the time of writing this article, and they provide a general outlook on the Finnish approach and aim for reforming teacher education at all educational levels.

The first document is called *Guidelines for the Development of Teacher Education: Ideas and Suggestions for the Teacher Education Forum*, and is published by the *Teacher Education Forum*, which was established by the Finnish *Ministry of Education and Culture* (MEC) in January 2016. The objective of the Forum is to respond to needs caused by the changing system and settings of education in Finland by reforming the structures, goals and procedures of teacher education. The document is referred to as "MEC" in our analysis. The document indicates that there is as an "urgent" need to develop teacher training and educate teachers to meet the forthcoming social challenges. The document states that these future challenges and a rapidly changing society require teachers with transversal and innovative skills for renewal (Ministry of Education and Culture, 2016, p. 6). Common in policy texts, the rhetoric being used in this document is at a general level and the objectives are not spelled out in detail. However, the document includes priorities that are regarded important, such as digitalization, internationalization, cultural diversity, special education, and school leadership (Ministry of Education and Culture, 2016, pp. 7–8).

The second document in our study is called *Becoming the Most Competent Teachers of the World: Evaluation of the Teacher Education Forum in 2016–2018* published by the *Finnish Education Evaluation Centre* (Niemi et al., 2018). This document evaluates the reform of teacher training in Finland (i.e., the objectives of the MEC document). The body under evaluation is the *Teacher Education Forum,* and in the report, external evaluators analyze the Forum's work. Thus, it comments on the guidelines and the work reported in MEC and makes recommendations for the ongoing reform of teacher education. In our study, we refer to this latter report as "FINEEC". Both documents, MEC and FINEEC, are written in Finnish, with some parts translated into English by the publishers (abstracts and recommendations). When citing the documents, we used our own English translations in passages where translations were not provided by the publishers.

We applied document analysis as the method (Bowen, 2009). According to Bowen (2009), this method involves data that can be examined and interpreted to elicit meaning, gain understanding, and develop empirical knowledge. These educational policy documents contain text (words) that have been written without a researcher's intervention (e.g., Bowen, 2009). We carried out the document analysis (Bowen, 2009) using a qualitative content analysis (see also, Vivitsou, 2019). The category formation of the thematic analysis (Saldana, 2009) was primarily an inductive bottom-up process, but still influenced by the theoretical considerations discussed in the previous sections (e.g., Patton, 1990).

First, we examined both documents to recognize passages that discuss or relate to the notions of sustainability. Second, we examined both documents to identify aspects related to transformative learning as discussed in previous sections, and to study how the notions of sustainability in the documents reflect and demand an inclusion of transformative learning approaches in teacher education. We grouped the passages into categories, each representing a theme emerging from the documents (cf. Patton, 1990; Saldana, 2009).

Two of the researchers carried out the qualitative content analysis independently. After that, they compared and discussed the findings and interpretations with each other. In the third stage, all authors negotiated the interpretations until a consensus was reached. Based on the results, we discuss the need for teacher education to address the request of individual and societal transformation necessitated by the *Sustainable Development Goals* (see Section "Introduction").

Results

In this section we present the results of our analysis of the two policy documents, MEC and FINEEC. First, in Section "Sustainability as a topic in the policy documents," we present how sustainability is addressed as a topic in the documents. In Section "Paths to transformative education in the policy documents," we present our findings on how the documents reflect the aspects of transformative learning.

Sustainability as a topic in the policy documents

When describing the broad, contemporary changes and challenges which affect schools, teachers, and teacher education, *Ministry of Education and Culture* (2016, p. 8) lists "flexibility of learning environments, digitalization, internationalization, cultural diversity, diverse learners, learning at work, multi-professional teams, and personalization of learning." However, the upheaval in the broader societal surrounding of schools, caused by sustainability challenges are not addressed. Internationally, such issues are central in recent views of the contemporary challenges of education discussed above. In the Section "Current status and challenges" (Ministry of Education and Culture, 2016, pp. 12–14), the Finnish guidelines repeat the same above-mentioned challenges. In addition, the Finnish guidelines also include the descending and diverging achievement levels of pupils and students, wellbeing of the young, transferring phases between primary, secondary and vocational/higher education, interplay with families and work life, and the scarcity of professional development and networking opportunities for teachers. The same issues and trends are addressed when setting the aims for "creative and communal teachership" (Ministry of Education and Culture, 2016, pp. 16–19), where human interaction, communality and research-based practice are highlighted as the key stones of the profession.

In the recommendations, the guidelines document mentions the word 'sustainable' (in Finnish 'kestävä') only three times:

when discussing the role of teachers in liberal adult education to provide "sustainable well-being of citizens" (Ministry of Education and Culture, 2016, p. 17). When it comes to environmental sustainability, the only mention is in the "ideas and examples" section: "Ethical issues, value competence and the ability to act in a responsible and sustainable way in global environments are to be strengthened in the content of teacher education" (Ministry of Education and Culture, 2016, p. 21). According to the evaluation report (Niemi et al., 2018, p. 56), the "ideas and examples" collected in MEC are ideas that were brought forward by working committee members in the events organized by the Forum. However, the document also states that to integrate the process (that tended to scatter in all directions), the working committee decided to leave these ideas outside the actual development program. Yet, in relation to change, the MEC document raises the question: "Is something sustainable if it connects all teachers across ages, levels of education and subject boundaries?" (Ministry of Education and Culture, 2016, p. 9). (In MEC, the concepts 'sustainable development' ('kestävä kehitys') and 'sustainability' ('kestävyys') are lacking).

Despite the scarcity of notions of sustainability, the guidelines for teacher education state that the future teachers should be able to "integrate societal, global and ethical issues into their teaching" and "foresee changes" (Ministry of Education and Culture, 2016, pp. 16–19). Nevertheless, the document does not explicitly state what "social, global and ethical issues" mean (p. 17), but presumably, the text refers to global challenges in societies, such as equality and sustainability. Furthermore, the guidelines suggest that teachers should practice "active local and global agency" (p. 15). Thus, the document identifies societal and global challenges but does not explicitly declare which themes they refer to.

The absence of an analysis of global and societal changes in the teacher education reform program was noticed in the evaluation by the *Finnish Education Evaluation Centre*. The FINEEC document points out that the online brainstorming sessions, in which the teacher education development process was planned, did not highlight climate change and other global issues as challenges of the future for teacher education:

> "The vision work highlighted the general generic skills that will be required of teachers in the future, such as learning to learn and interaction and collaboration skills. On the contrary, global challenges related to changes in people's living conditions, work and economy, climate change, increased inequality and radicalization, technological changes and artificial intelligence (see, e.g., UN Agenda 2030) did not emerge as future challenges in teacher education." (Niemi et al., 2018, p. 48)

With reference to this shortcoming, FINEEC argues that the program should have incorporated a consideration of global long-term issues such as sustainable development and climate change:

> "The time horizon of the development program is relatively short, dating back to about the 2020s. It would have been useful to include in the development program process an assessment of long-term global drivers of change that will have a strong impact on the educational structures, the curricula, and the teachers' work. These include the equality of future education, radical changes in the labor arena, the challenges posed by representative democracy, sustainable development and climate change, artificial intelligence and robotization, and the increasing demands for media literacy (see, for example, World Bank, 2018)." (Niemi et al., 2018, p. 62)

Paths to transformative education in the policy documents

The MEC guidelines document mentions the constantly changing societal context of the educational sector, the need to keep up to phase with the change, and the quest for teachers who generate new ideas:

> "We live in a world in which only change is certain. Competence and education (Bildung – in original *sivistys*) is more important than ever for Finland and for the world. The challenges of the future and the rapid changes in society require teachers with comprehensive and creative skills." (Ministry of Education and Culture, 2016, p. 6)

The guidelines for teacher education list a number of skills teachers need to deal with this continuous change. Collaboration and creativity are seen as key factors in teachers' professional development:

> "Teachers' abilities and opportunities to work together, to network, to continuously develop personal skills are the keys to change." (Ministry of Education and Culture, 2016, p. 6)

> "Future teaching is based on a wide range of pedagogical and content skills, co-working, self-development, in addition to creativity and entrepreneurship." (Ministry of Education and Culture, 2016, p. 15)

> "Learning environments and methods are collaboratively reformed through experimentation and innovation." (Ministry of Education and Culture, 2016, p. 7)

> On the same note, "the skills of future teachers" (Ministry of Education and Culture, 2016, p. 17) include "change competence" (*muutososaaminen*), "the competence to change one's own action," "self-efficacy and agency," and "the competence to diffuse new educational innovations (e.g., digital skills)."

Furthermore, MEC considers the ability to keep up with change to be crucial in fostering the quality of the Finnish education system and teacher education in international comparison:

> "The present material outlines the goals and measures that help Finnish teacher education to remain strong, attractive and internationally valued, developing toward a new creative teaching profession." (Ministry of Education and Culture, 2016, p. 9)

> "Many countries want to develop education systems that are forward-looking and support learning in the best possible way. The biggest challenge has often been that the education sector is not very good at renewing itself and innovating new solutions to deal with its own problems. Creating a long-lasting change is difficult. Achieving a genuine and lasting change is a complex and multidimensional process for the education system." (Ministry of Education and Culture, 2016, p. 10)

When evaluating the teacher education guidelines set by MEC, the FINEEC document also stresses the management of change and calls for a national structure to support the ongoing change at all levels of the educational system.

> "Its [the national structure's] mission would be to ensure that the ongoing changes is teachers' basic, induction and continuing training are carried out at all levels of the education system; at macro level (structures, resources, and legislation), institutional level (teacher education institutions and education providers and schools), and at micro level (the personal development and competence of teachers and students)." (Niemi et al., 2018, p. 8)

However, the approach to change and renewal seems to be mostly *responsive* in the documents, and to refer to learning environments and pedagogies – not a wider value-based change related to the purposes and aims of education. For teachers, change appears frequently as something to anticipate and respond to, instead of something to bring about. MEC calls for the education sector to embrace and facilitate change, but the direction of the change is not outlined. While the guidelines document poses questions such as "How will people learn in the future and what kind of training and skills will be needed?" and "How will the change affect teacher education?" (Ministry of Education and Culture, 2016, p. 9), it does not aim to answer these questions in terms of the content of the change but solely focuses on managing the change itself – in a collaborative fashion:

> "Teachers [. . .] are able to think and act creatively in the changing operational environment and in national and international networks." (Ministry of Education and Culture, 2016, p. 18)

> "Teachers [. . .] are able to change their own actions and circumstances, and lead toward change and in change processes." (Ministry of Education and Culture, 2016, p. 18)

> "Teachers [. . .] foresee changes and are enterprising." (Ministry of Education and Culture, 2016, p. 18)

> "Teaching is an interpersonal profession that requires enthusiasm, ability to encounter change, and an innovative approach." (Ministry of Education and Culture, 2016, p. 15)

> "Teachers and leaders of early childhood education and educational institutions work together to reform the operating environments and the culture of education and teaching. In a culture that supports renewal, teachers need diverse skills." (Ministry of Education and Culture, 2016, p. 7)

In the evaluation report, the FINEEC points out the restricted vision of teachers' agency as presented in the aims of the development program:

> "In the vision written in the context of the Forum, teachers are seen as transversal pedagogical and societal actors. On the contrary, the aims of the development program see the future teacher mostly as a pedagogical expert." (Niemi et al., 2018, p. 63)

When evaluating the program, FINEEC presents five recommendations (Niemi et al., 2018, p. 4) for continuing the reform of teacher education. These recommendations deal with facilitating change though structural measures, evaluation and collaboration. For instance, structural problems hindering in-service teacher training in Finland should be solved to support renewal. While FINEEC criticizes MEC for not considering the global issues (Niemi et al., 2018, p. 62) and directing the reform on that basis, in its recommendations FINEEC does not seize the opportunity to give suggestions related to the purposes and objectives of the reform. This choice may be due to the nature of the assignment that the *Finnish Education Evaluation Centre* received from the *Ministry of Education and Culture*. The assignment was to "evaluate the course of action, the concept that has been chosen to reform teacher education" (Niemi et al., 2018, p. 14). This may explain why FINEEC confined its recommendations to consider the process of the reform rather than its purposes and objectives. The directives or the purpose of the reform seems to be given by the *Ministry of Education and Culture* in its outlook on contemporary and future challenges,

and the MEC neither explicitly discusses sustainability issues as a challenge, nor makes a call for transformative learning. Both the Forum and FINEEC seem to have followed the assignment quite narrowly and did not decide to add transformative aspects.

Discussion

The aim of this study was to examine how the quest for sustainability and transformation in international educational policy by UNESCO is manifested in Finnish teacher education policy. To reach this aim and answer the two research questions regarding sustainability and transformation, we examined two recent national policy documents on teacher education, here referred to as MEC and FINEEC. We allocate the discussion on the findings in this section.

Sustainability

Our first research question was how sustainability is represented in Finnish policy on teacher education. At a first reading, it is obvious that sustainability does not hold a key position in the two documents we have examined. Nevertheless, these policy documents introduced a broad view on the need to change society and teacher education.

The MEC document emphasizes that the future teachers need a range of skills and lists several skills as important for a professional teacher. In general, teacher education must prepare the students for the challenges of the teacher profession by promoting broad basic skills, creative professionalism, and a willingness to develop both personally and in collaboration. At the general level, the document describes teachers as active agents both locally and globally in a world with great challenges and a fast-changing society, but does not contextualize this in relation to sustainability.

The FINEEC document points out that education needs to address urgent societal challenges when aiming to tackle climate change. Thus, this policy document takes at least one step toward a planetary vision of transformative learning, even if it does not stress ecological and planetary perspectives in depth (cf., O'Sullivan, 2003; Taylor, 2008; Casebeer and Mann, 2017). The Finnish national teacher education policy guidelines seem to remain rather ambiguous and do not clearly present any distinct objectives with regard to goals of sustainability education. For instance, the policy mentions climate change, but does not deal with the issue and its educational implications in depth. On the one hand, this may be due to the timing of the policy guidelines that were prepared and published between 2015 and 2020 (e.g., Niemi et al., 2018; Ministry of Education and Culture, 2021), at a time when climate awareness was increasing, but not so much discussed. On the other hand, this ambiguity may suggest attentiveness instead of a clear position in relation to climate change and other sustainability issues in teacher education. Later policy, like the objectives of Ministry of Education and Culture (2021) are more in line with the UNESCO current priorities, such as sustainable development. In addition, the Finnish educational policy agendas are aligned with UNESCO's educational policy with a planetary view on sustainability. However, the general higher education policy objectives of the Ministry of Education and Culture (2021) also prioritize international competitiveness and regional needs over planetary and ecological concerns.

Transformation

Our second research question was how the Finnish policy on teacher education reflects the call for transformation toward sustainability. To understand the national Finnish policy, it should be noted that a key feature of the Finnish educational system is the independent, expert role of teachers. They not only implement the curriculum, but also interpret it and contribute to its development at the local level, since each municipality develops its own curriculum based on the national standards (Finnish National Board of Education, 2016). In line with this national context, the guidelines document (Ministry of Education and Culture, 2016) states "What is important is the local and global agency and participation of the learner, teacher, and the leader of the unit or school" (Ministry of Education and Culture, 2016, p. 15). Therefore, it is not surprising that the aims outlined for teacher education (Ministry of Education and Culture, 2016) include developing teachers who are competent in forming the curricula, implementing innovations, and initiating, guiding, and leading creative processes. In addition, the future teachers need skills to use, combine and develop new learning environments, implement digital tools, and jointly develop the schools' learning environments.

In the general tone of the guidelines, teachers' agency seems limited to primarily dealing with changes instead of making them happen, to implement rather than create reforms, and to develop rather than to participate in a transformation (see also, Varpanen et al., 2022). When discussing the roles of teachers and students as actors in the educational sector, the documents do not particularly denote the transformative function of education. Yet, they do not manifest a solely utilitarian function either. The 'learner' concept indicates all children and adults as joint learners and developers on various educational levels. This is in line with Balsiger et al. (2017), who emphasized that sustainability education calls for a role shift, making teachers facilitators of both students as joint co-learners, but also the teachers and students as mutual co-learners.

However, there are some aims in the MEC document that can be seen as presenting teachers as not only reproducing but also reforming the society. For example, the aims for future teachers involve being "societally and culturally active and competent" and "bold in developing and experimenting" (Ministry of Education and Culture, 2016, p. 18). Yet, as argued before, and as FINEEC points out too, the development program presents teachers mostly as experts in teaching, and thereby

the take on teachers' agency appears limited. The documents do not state in what area the teachers should be bold and experiment. In terms of pedagogical approaches, the guidelines for teacher education call for teaching and learning that are student-centered, research-based, collective and innovative. These approaches are referred to consistently throughout the documents, both in the MEC guidelines and in the FINEEC evaluation report.

Summing up, even if the documents highlight the teachers' agency, in terms of promoting change through action, they do not push forward action-based methods. MEC mentions that future teachers should be "societally and culturally active and competent" (p. 18), but this is not expanded on elsewhere in the documents and there is no consideration of promoting students' own activism. Hence, the teacher education documents might insufficiently 'promote and prepare learners to regenerate the society, the culture and the labor market,' or to 'promote wellbeing and sustainability development'; which are objectives laid out in Finland's higher education policy (Ministry of Education and Culture, 2021).

Critical reflections on the results

In many decades, UNESCO has called for sustainability education, and recently the organization has called for transformation, and transformative learning. Simultaneously, other strong international policy influencers like the OECD and the EU have highlighted other more instrumental aims consisting of long lists of necessary skills and competencies for the future world inhabitants including teachers. Finland has also participated in and distributed material in the skill and competence genre, of which MEC and FINEEC are examples. Therefore, objectives other than sustainability seem to have had a stronger impact on the teacher education policy. Accordingly, the basic aim of Finnish teacher education is something else than a sustainable planet.

The title of the FINEEC policy document is *Becoming the Most Competent Teachers of the World: Evaluation of the Teacher Education Forum in 2016–2018*, but the rationale for having a country with the world's most competent teachers is not mentioned. The title may suggest that teacher education in Finland adheres to the Finnish higher education policy objectives (e.g., international competitive entity) rather than to UNESCO's current priorities (e.g., sustainable education or transformative engagement). The superlative ideal of teacher education and teaching vocation conflicts with the critical and relational aspects of transformative learning. The policy document inadequately explains the rationale and implications on being 'the most competent teachers of the world.' Hence, it raises several existential questions. Why should Finland have the world's most competent teachers? What roles do the world's most competent teachers play in Finnish society and globally? What is the basis of comparison between countries to determine the extent of teachers' competence? This aim seems to oppose an idea of justice, global equality, and social sustainability.

Furthermore, the notions of equality and sustainability are used in a de-contextualized way, without any reference to the causes of the phenomena (e.g., inequalities and unsustainability) and how these are reflected on the Finnish society (e.g., how do migration and climate change relate to each other? What are the influences of migration because of climatic change on the Finnish society, Europe, and the world? How has change in the population in Finland influenced education and teacher education? What radical changes in the curricula are needed? These questions open further discussion about issues related to values, competence and action). They are concepts and practices presented in the Finnish regional and international policy documents addressing sustainability education, transformative learning and teaching, including higher education.

The policy texts are conceptually incoherent especially regarding the ontological orientations underlying the documents and the directions in which they are pointing. For instance, the fact that "value" is seen as "competence," and inserted into the adjective-noun phrase "value competence" indicates that this is a skill that can be developed as part of a series of courses or training. However, rather than a competence, it is critical consciousness and empathy that are required, if the aim is to educate teachers able to "act professionally, ethically and value-consciously" (Ministry of Education and Culture, 2016, p. 18). Acting professionally requires an understanding of the historical, political and economic processes across local, regional and global boundaries that lead to environmental and climate crises. It also requires an understanding of how knowledge is constructed; what and whose knowledge is legitimized in the Global North *vis-à-vis* Global South. Without these conditions, value is treated in a moralistic manner rather than as an ethical matter. Similar considerations apply to other newly coined skills, for example the so-called 'climate competence.'

A key reason for the scarcity of transformative aspects in the documents we have analyzed, is that the tone in both is quite value neutral. Such neutrality may be typical for policy documents but problematic when envisioning any kind of reform. The vision for Finnish teacher education, as stated in the national guidelines document, is based on two values (Ministry of Education and Culture, 2016, p. 15): *equality* and *communality*. One of the transversal competencies of future teachers is "value competence," that is to "act professionally, ethically and value-consciously" (Ministry of Education and Culture, 2016, p. 18). Yet, the document does not expand on the meaning of value-consciousness or justify its recommendations for teacher education in a value-based way. The scarcity of explicit value considerations in the documents does not support a transformative approach. In addition, several key values typically associated with sustainability, such as responsibility, solidarity or respect for nature, are not stated in the documents. Nevertheless, they could be read behind the lines in the vague rhetoric.

Both documents call for educational reforms as mutual processes. MEC focuses on the objective of bringing together the stakeholders in teacher education at national and local levels, and FINEEC considers this network-like approach to be the central strength of the reform of teacher education. FINEEC is also complimentary that the development program aims to enable teachers to take responsibility and participate in leadership processes. Such an interactional and de-centralized approach, promoting the significance of partnerships and the sense of community, probably contributes to the agency of teacher educators at various levels. In addition, teachers' mutual networking is supported in the development program. However, one FINEEC criticism is that the program gives relatively little guidance for future teachers on how to develop their work at the local (school or municipality) level.

Reflections on the research procedure

In this article we presented a literature study based on international education policy mainly from UNESCO, but also other agencies, covering research from the fields of sustainability education, transformative learning and teacher education. The empirical sections included an examination of two education policy documents on teacher education from Finland. We could have used many other documents and research studies, but tried to focus on a few of those that we found to be the most relevant in terms of national policy guidelines at the time of study. We could also have reflected more deeply on what the documents tell about issues other than sustainability and transformation, but we did not recognize this as our task.

The authors' backgrounds and fields of research draw from the social sciences, the humanities and the natural sciences. Therefore, our standpoints on transformative learning and sustainability vary as well. However, despite our various positioning, our thoughts converged in that teacher education needs a profound transformation. Yet, a transformational leap to practices with a deep understanding of sustainability requires an ontological shift in teacher education. In turn, this would require revisiting the definitions of what human life is and how to relate to the rest of the world. Based on these considerations, we first decided to discuss and analyze the ontological basis of transformative learning in relation to sustainability in teacher education policy in Finland. Yet, the text in the documents had very little to say about sustainability and deep transformations. As our analysis has shown, the narrative approach in policy documents is strategic rather than ontological and scientific. This has had an impact on the conceptual basis of this paper and has shifted the weight toward the body of literature that primarily focuses on skills-related studies and research. Further studies on teacher education in relation to sustainability and transformation at a more theoretical level are needed.

Conclusion

While we were compiling the final revision of this paper in May 2022, the Finnish Ministry of Education and Culture published a brief document (8 pp.) outlining a renewed development program for teacher Education for 2022–2026 (Ministry of Education and Culture, 2022). This document lists and briefly elaborates on four objectives that repeat the arguments in the more extensive guidelines document that we analyzed in this paper: teacher education should be anticipatory, research-based, continuous and collaborative, and it should promote leadership competence. However, we notice that this new document addresses sustainability issues more than the earlier MEC document. When listing "the great challenges emerging from society," Ministry of Education and Culture (2022, p. 6) now begins by "issues related to climate change" and "strengthening participation and active citizenship." The document also acknowledges that teachers' expertise should entail studying, solving and adapting to "wicked problems" (Ministry of Education and Culture, p. 3). According to this policy document, it might sound like Finnish teacher education should respond to the challenges caused by the sustainability crises. Despite a few promising sentences, we argue that the view of teachers' agency of this new policy document is still limited, and that the shortcomings apparent in earlier guidelines apply to this new document, too. Similarly, our arguments on the lack of transformative approaches and visions for value-based changes apply to the new document.

The conclusion of our study is that Finnish teacher education policy does not live up to UNESCO's quest for transformative sustainability education. Even if the message from the latest document from 2022 is more promising than the earlier documents, in the contemporary world situation it is still a shortcoming. It is obvious that neither this nor the two main documents in our study have taken UNESCO's call for the transformation toward sustainability seriously. When choosing between the transformation toward the economic aims of the OECD and the sustainability aims of UNESCO, Finland has chosen predominantly to prepare teachers (and consequently, students) to serve the global economy before learning to create sustainable global conditions. In some way, the two documents in our study are examples of typical Finnish consensus seeking approaches. Even if there might be conflicting thoughts about what is important in future teacher education, the document texts try to sketch a complete picture of excellent teacher education. In that situation, sustainability is easily sidetracked by other political and economic aims. Undoubtedly, the educational policy makers in charge of these documents tend to avoid "controversial" value related concepts like sustainability and instead refer to more general terms such as "social and ethical questions." This raises questions about who the authors and committees behind these documents are, what

their guiding principles were, and whose voices are conveyed and whose silenced.

The power of the policy is not self-evident. As Levin (1998, p. 134) states: "the road from ideological belief to political commitment to formal policy to actual practice is rarely a straight one." Consequently, whatever is written in a policy, the result can vary a lot. This means that the Finnish higher education institutions offering teacher education may implement sustainability in their own way, in any case. Thus, how teachers in Finland are prepared for implementing the core curricula in schools, and how they emphasize sustainability, is much up to the leaders of the teacher education institutions and to the teacher educators (Wolff et al., 2017). Transformative learning is one way, but it requires effort, time and research; it cannot be rushed and performed shallowly. Yet, according to Balsiger et al. (2017), capability and knowledge for sustainability transformation of higher education are widely lacking. Therefore, the training of teacher educators in sustainability education is the first step. However, the UNESCO's following up (see Section "International general guidelines"; UNESCO, 2020) might hopefully have an influence and start a discussion leading to actions for change in many countries. Finally, a relevant question that arises when discussing the issue of sustainability and transformation in connection to teacher education is whether research (theoretical and empirical studies) on teaching and learning *or* politics and economic objectives are to lead the transition toward a more sustainable future by means of education.

Data availability statement

The original contributions presented in this study are included in the article/supplementary material, further inquiries can be directed to the corresponding author.

Author contributions

L-AW, AL, SC, MV, and MA contributed to the conception and design of the study and discussed all the sections together. L-AW, SC, and MV were responsible for Sections "Introduction" and "Policy Request on Transformation Through Education." SC, MV, MA, and L-AW were responsible for Section "Multiple Perspectives on Transformative Learning." AL and MA performed the content analysis and wrote Sections "Results" and "Discussion." SC wrote the first draft of the manuscript. AL, L-AW, SC, and MV wrote the discussion. L-AW was responsible for the entity and structure. All authors are responsible for that all aspects of the work are critically, accurately and appropriately investigated and resolved. They have all contributed to manuscript revision and read and approved the submitted version.

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Conflict of interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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