

Swedish Teachers in the Process of Implementing Education for Sustainability in Early Childhood Education

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ABSTRACT

Background. We are living in challenging times, with an urgent need for transformation that requires new and sustainable ways of living. Young children are exposed to these global challenges. This study responds to the need for further understanding of how education for sustainability (EfS) is being handled in early childhood education (ECE).

Objective. This study investigated ECE teachers in the process of implementing early childhood education for sustainability (ECEfS). This was initiated by the 2019 revised Swedish National Curriculum for the preschool, where education for sustainable development is included as an overall value and objective. We based our work on a critical and transformative theoretical perspective that highlights the need for critical transformative pedagogies, with a focus on Education for Sustainability. The participating teachers were enrolled in a research and development program initiated by the Swedish institute Ifous.

Design. The data presented in this article was obtained in May 2021. An initial questionnaire was emailed to all Ifous participants. One hundred fifty-three teachers (76.5%) responded. The intention of the questionnaire was twofold: first, to investigate what the teachers considered to be education for sustainability in ECE; and second, to scrutinize the teachers' knowledge base, for the further planning of the research and development program. Content analysis was used to analyze the data.

Results. The findings of the study showed a tendency to describe education for sustainability as "business-as-usual" rather than treating EfS as a new field, and to contend that the teachers addressed EfS before it became a compulsory task in 2019. There were few connections made to the UN Sustainable Development Goals (2015) and to the ongoing pandemic. A common trend when describing the content and activities was to

divide the content into three areas, following the three dimensions of sustainability. The teachers described the physical changes and pedagogical changes made after the revision of the national curriculum. Most of the changes in the school environment seemed to be a result of priorities set at higher levels in the organizations, e.g., deleting toxic plastic and recycling food waste. Only a few of the teachers described an educational program that included transformative change.

Conclusion. The teachers in the study were interested in EfS, and some articulated a longing for more knowledge about ECEfS and for transformative change. The teachers also showed the need for courage and professionalism to lead the way in finding the relevant content and activities for EfS. The teachers were struggling to find new ways to meet the demands from the governing documents especially during a planetary crisis.

Keywords: Early childhood teachers; education for sustainability (EfS); early childhood education for sustainability (ECEfS); critical theory; sustainable development; transformative education; research and development program (R&D program)

Highlights:

- Education for sustainability as a content and a pedagogy has to begin already in Early Childhood Education.
- The Swedish preschool teachers' views on sustainability are both examples of “business as usual” and of new dimensions in practice.
- We can learn a lot from research and development projects, both about what is going on in practice, but also about how to influence practice.
- Transformative education may change non-sustainable structures and practices. It is the way forward in education for a sustainable world.

АННОТАЦИЯ

Актуальность. Мы живем во непростые времена, отличающиеся острой необходимостью в изменениях, требующих новых и все более устойчивых способов существования. Дети находятся под воздействием этих глобальных вызовов. Данное исследование вызвано необходимостью более глубокого понимания того, как организовать дошкольное образование в интересах устойчивого развития.

Цель. Исследование было направлено на изучение того, как дошкольные педагоги осуществляют внедрение системы дошкольного образования в интересах устойчивого развития (ECEfS). Этот проект был инициирован обновленной Шведской национальной учебной программой в 2019 году для дошкольных учреждений, в которых образование в интересах устойчивого развития является общей ценностью и целью. Наша работа основывается на критической и трансформационной теории, которая подчеркивает необходимость критической преобразующей педагогики с акцентом на образование в интересах устойчивого развития. Педагоги-участники проекта были включены в исследование и разработку, инициированную шведским институтом Ifous.

Дизайн. Данные, представленные в статье, были получены в мае 2021 года. Первоначальная версия опросника была разослана по электронной почте всем участникам исследования. Респондентами стали 153 педагога (76,5 % от всех участников). Анкетирование проводилось со следующими целями: во-первых, изучить то, что учителя считают образованием для устойчивого развития в дошкольном образовании; и, во-вторых, детально изучить базу знаний учителей для дальнейшего планирования программы исследований и разработок. Для анализа данных использовался контент-анализ.

Результаты. Результаты исследования показали тенденцию респондентов описывать образование в области устойчивого развития как “обычное дело”, а не рассматривать EfS как новую область; педагоги утверждали, что они занимались EfS и до того, как это стало обязательной задачей в 2019 году. Было обнаружено достаточно мало связей с Целями устойчивого развития ООН (2015) и продолжа-

ющейся пандемией. Общей тенденцией при описании содержания и мероприятий было разделение содержания на три области в соответствии с тремя аспектами устойчивости. Педагоги описали физические изменения и педагогические изменения, сделанные после обновления национальной учебной программы. Основная часть изменений в школьной среде, по-видимому, стали результатом приоритетов, установленных на более высоких уровнях в организациях, например, удаление токсичного пластика и переработка пищевых отходов. Только небольшое количество учителей описали образовательную программу, которая включала в себя преобразующие изменения.

Вывод. Педагоги, принявшие участие в исследовании, заинтересовались EfS, и некоторые из них выразили желание получить больше знаний о ECEfS и о трансформационных изменениях. Педагоги также указали на важность смелости и профессионализма, необходимых для поиска соответствующего содержания и мероприятий для EfS. Педагоги активно пытались найти новые способы внедрения требований государственных стандартов, особенно во время планетарного кризиса.

Ключевые слова: Дошкольные педагоги; образование в интересах устойчивого развития (EfS); образование в интересах устойчивого развития в раннем детстве (ECEfS); критическая теория; устойчивое развитие; преобразующее образование; программа исследований и разработок (R&D программа)

Ключевые положения:

- Образование для устойчивого развития как содержание и как педагогика должно начинаться уже в дошкольном образовании.
- Устойчивость с точки зрения шведских педагогов дошкольной ступени понимается одновременно как «обычное дело» и как наличие новых областей практики
- Мы можем многому научиться из исследовательских и опытно-конструкторских проектов: понять и то, что происходит на практике, и то, как влиять на практику.
- Трансформационное образование может изменить неустойчивые структуры и практики. Это шаг вперед в образовании для устойчивого мира.

RESUMEN

Introducción. Vivimos en tiempos desafiantes, con una urgente necesidad de transformación que requiere formas de vida nuevas y sostenibles. Los niños pequeños están expuestos a estos desafíos globales. Este estudio responde a la necesidad de mejorar la comprensión sobre cómo se está manejando la educación para la sostenibilidad (EfS) en la educación de la primera infancia (ECE).

Objetivo. Este estudio ha versado sobre los maestros de ECE en el proceso de implementación de la educación infantil para la sostenibilidad (ECEfS). Esta implementación fue iniciada por el Currículo Nacional Sueco revisado de 2019 para preescolar, donde la educación para el desarrollo sostenible se incluye como un valor y objetivo general. Basamos nuestro trabajo en una perspectiva teórica crítica y transformadora que destaca la necesidad de pedagogías críticas transformadoras, con un enfoque en la Educación para la Sostenibilidad. Los profesores participantes se inscribieron en un programa de investigación y desarrollo iniciado por el instituto sueco Ifous.

Diseño. Los datos presentados en este artículo se obtuvieron en mayo de 2021. Se envió un cuestionario inicial por correo electrónico a todos los participantes de Ifous. Respondieron ciento cincuenta y tres profesores (76,5%). La intención del cuestionario era doble: primero, investigar lo que los profesores consideraban educación para la sostenibilidad en ECE; y, en segundo lugar, examinar la base de conocimientos de los profesores para seguir planificando el programa de investigación y desarrollo. Se utilizó análisis de contenido para analizar los datos.

Resultados. Los resultados del estudio mostraron una tendencia a describir la educación para la sustentabilidad como “lo de siempre” en lugar de tratar a EfS como un nuevo campo, y afirmar que los maestros abordaron EfS antes de que se convirtiera en una tarea obligatoria en 2019. Hubo pocas referencias realizadas a los Objetivos de Desarrollo Sostenible de la ONU (2015) y con la pandemia en curso. Una tendencia común a la hora de describir el contenido y las actividades fue dividir el contenido en tres áreas, siguiendo las tres dimensiones de la sostenibilidad. Los profesores describieron los cambios físicos y pedagógicos realizados después de la revisión del plan de estudios nacional. La mayoría de los cambios en el entorno escolar parecían ser el resultado de prioridades establecidas en niveles más altos en las organizaciones, por ejemplo, eliminar el plástico tóxico y reciclar los desechos de alimentos. Solo unos pocos maestros describieron un programa educativo que incluía un cambio transformador.

Conclusión. Los maestros en el estudio estaban interesados en EfS, y algunos expresaron su anhelo por más conocimiento sobre ECEfS y por un cambio transformador. Los maestros también mostraron la necesidad de valentía y profesionalismo para liderar el camino en la búsqueda de contenido y actividades relevantes para EfS. Los maestros estaban luchando por encontrar nuevas formas de satisfacer las demandas de los documentos rectores, especialmente durante una crisis planetaria.

Palabras clave: Maestros de primera infancia; educación para la sostenibilidad (EfS); educación de la primera infancia para la sostenibilidad (ECEfS); la teoría crítica; desarrollo sostenible; educación transformadora; programa de investigación y desarrollo (programa de I + D)

Destacados:

- La educación para la sostenibilidad como contenido y como pedagogía debe comenzar ya en la Educación Infantil.
- Los puntos de vista de los profesores de preescolar suecos sobre la sostenibilidad son tanto ejemplos de “lo de siempre” como de nuevas dimensiones en la práctica.
- Podemos aprender mucho de los proyectos de investigación y desarrollo, tanto sobre lo que está sucediendo en la práctica como sobre cómo influir en la práctica.
- La educación transformadora puede cambiar las estructuras y prácticas no sostenibles. Es el camino a seguir en la educación para un mundo sostenible.
- Maestros Suecos en el Proceso de Implementación de la Educación para la Sostenibilidad en la Educación Infantil

RESUME

Origines. Nous vivons une époque difficile, avec un besoin urgent de transformation qui nécessite des modes de vie nouveaux et durables. Les jeunes enfants sont exposés à des défis mondiaux. Cette étude répond au besoin de mieux comprendre comment l'éducation au développement durable (EDD) est gérée dans l'éducation de la petite enfance (EPE).

Objectif. Cette étude a porté sur les enseignants de l'EPE dans le processus de mise en œuvre de l'éducation au développement durable dans la petite enfance (EDDPE). Cela a été initié par le programme national suédois révisé de 2019 pour le préscolaire, où l'éducation au développement durable est incluse en tant que valeur et objectif global. Nous avons basé notre travail sur une perspective théorique critique et transformatrice qui met en évidence le besoin de pédagogies transformatrices critiques, en mettant l'accent sur l'éducation pour la durabilité. Les enseignants participants ont été inscrits dans un programme de recherche et développement initié par l'institut suédois Ifous.

Conception. Les données présentées dans cet article ont été obtenues en mai 2021. Un premier questionnaire a été envoyé par mail à tous les participants de l'Ifous. Cent cinquante-trois enseignants (76,5 %) ont répondu. L'intention du questionnaire était double : premièrement, enquêter sur ce que les enseignants considéraient comme une éducation à la durabilité dans l'EPE ; et deuxièmement, pour examiner la base de connaissances des enseignants, pour la planification ultérieure du programme de recherche et développement. Une analyse de contenu a été utilisée pour analyser les données.

Résultats. Les résultats de l'étude ont montré une tendance à décrire l'éducation au développement durable comme « comme d'habitude » plutôt que de traiter l'EDD comme un nouveau domaine, et à affirmer que les enseignants ont abordé l'EDD avant qu'il ne devienne une tâche obligatoire en 2019. Il y en avait peu. Les liens établis avec les Objectifs de développement durable des Nations Unies (2015) et la pandémie en cours. Une tendance courante lors de la description du contenu et des activités était de diviser le contenu en trois domaines, suivant les trois dimensions de la durabilité. Les enseignants ont décrit les changements physiques et pédagogiques apportés après la révision du programme national. La plupart des changements dans l'environnement scolaire semblaient être le résultat de priorités fixées à des niveaux plus élevés dans les organisations, par exemple, la suppression du plastique toxique et le recyclage des déchets alimentaires. Seuls quelques enseignants ont décrit un programme éducatif qui comprenait un changement transformateur.

Conclusion. Les enseignants de l'étude s'intéressaient à l'EDD et certains ont exprimé le désir d'en savoir plus sur l'EDDPE et d'un changement transformateur. Les enseignants ont également montré la nécessité de faire preuve de courage et de professionnalisme pour montrer la voie dans la recherche du contenu et des activités pertinents pour l'EDD. Les enseignants luttèrent pour trouver de nouvelles façons de répondre aux exigences des documents constitutifs, en particulier pendant une crise planétaire.

Mots-clés: Éducateurs de la petite enfance; éducation pour la durabilité (EDD); l'éducation de la petite enfance pour la durabilité (EDDPE); théorie critique; le développement durable; éducation transformatrice; programme de recherche et développement (programme R&D)

Points principaux:

- L'éducation à la durabilité en tant que contenu et en tant que pédagogie doit déjà commencer dans l'éducation de la petite enfance.
- Les points de vue des enseignants suédois du préscolaire sur la durabilité sont à la fois des exemples de « business as usual » et de nouvelles dimensions dans la pratique.
- Nous pouvons apprendre beaucoup des projets de recherche et développement, à la fois sur ce qui se passe dans la pratique, mais aussi sur la façon d'influencer la pratique.
- L'éducation transformatrice peut changer des structures et des pratiques non durables. C'est la voie à suivre dans l'éducation pour un monde durable.

Introduction

We are living in challenging times, ecologically, socially, politically, and economically. It is a time with an urgent need for a transformation that requires new and sustainable ways of living (IPCC, 2021). Young children are exposed to these global challenges. Global economic growth has decreased the number of children living in poverty and the child mortality rate; however, we see global challenges in the form of obesity, segregation, poverty, and inequity.

There are also signs that inequality is increasing on a global scale during the Covid-19 pandemic, creating a larger gap between rich and poor, and negatively affecting children's access to high quality education and basic health care. Furthermore, increased migration puts new challenges to many countries, which demands reconsideration of traditional approaches in institutions for care and learning. And finally, we see clear environmental threats on a global scale in the form of global warming, surpassing of planetary boundaries, and natural disasters. Education and health, as two sides of the same coin, are in this respect prerequisites for sustainability.

Education, from preschool to higher education, has been recognized as playing a crucial role in the change toward sustainable ways of living, now and in the future (Davis & Elliott, 2014). And this task starts already in early childhood education (Pramling Samuelsson, 2011).

In this article the process of implementing education for sustainability in Swedish Early Childhood Education (ECE) is scrutinized. We answer the need for further understanding about how early childhood education for sustainability (ECEfS) is being handled in ECE practice (Elliott, et al., 2020) by studying teachers in the process of implementing ECEfS. In Sweden, the term “education for sustainable development” is evident in policy and politics (SOU, 2019, p. 13). In this article we use the terms “education for sustainability” (EfS) and “early childhood education for sustainability” (ECEfS) aligned with a critical perspective. However, when referring to or quoting from policy texts, we use their concept of sustainable development. In the research field of ECEfS, children are seen as both important agents for change and participants who are important for creating a sustainable future, and teachers have a crucial role to play to support children in this. Also, teachers’ knowledge about issues of sustainability and their awareness of the urgency of action are crucial to reorienting all education towards sustainability (UNESCO, 2020; Elliott et al., 2020).

This article relates to the topic of the journal *New Ideas in Child and Educational Psychology* because it addresses the need for more knowledge in a new field: sustainability and young children. The concept of sustainability as curricular content in preschool education is new, and probably not only in Sweden. The implementation process varies among countries, depending on how sustainability is incorporated into the legal framework. We consider this implementation to be of interest in investigating how a new phenomenon like sustainability, which teachers are forced to take on, is dealt with.

The aim of the present article is to describe Swedish early childhood education teachers’ implementation of education for sustainability in their everyday work with children. This includes learning what content and activities they consider to be linked to the formal task of education for sustainable development, a subject that was introduced into the Swedish ECE curriculum in 2019. More specifically, the research questions were:

- 1) What content and activities related to education and teaching for sustainability do the ECE teachers report? and
- 2) What changes toward sustainability in the preschool environment after the mandated revised curriculum do ECE teachers report?

A Global and Planetary Commitment

As discussed in the introduction, one of our time’s most important questions in education is to transform it toward creating a more sustainable world (Jickling & Sterling, 2017; Kopnina, 2020). International policies such as Agenda 2030 (UN, 2015) are part of numerous initiatives to facilitate such a change in all areas of human life. All countries have agreed to work towards reaching the 17 global goals stated in Agenda 2030 — goals that all directly or indirectly influence children and their future.

In Sweden children start preschool during their second year of life, and 90% of the two-year-olds participate (National Agency for Education, 2020). SDG goal 4 deals with quality education, and goal 4.2 is specifically focused on early childhood education, formulated as follows:

By 2030, ensure that all girls and boys have access to quality early childhood development, care and pre-primary education so that they are *ready for primary education*. (UN, 2015)

The educational goal also points out content of importance for sustainability in goal 4.7:

By 2030, ensure that all learners acquire the knowledge and skills needed to promote sustainable development, including, among others, through education for sustainable development and *sustainable lifestyles, human rights, gender equality, promotion of a culture of peace and non-violence, global citizenship and appreciation of cultural diversity and of culture's contribution to sustainable development*. (UN, 2015)

UNESCO has been the engine during the whole process of working for sustainable development: first with the Decade for Education for Sustainable Development (DESD) (2005-2015); then with the Global Action Program (2015-2019), with the focus on scaling up what was learned during the Decade; and now with Education 2030, achieving the Sustainable Development Goals. This means that sustainability has been on the educational agenda for quite a long time, but, as is common in educational policy, the last level to be introduced is preschool education. In Sweden, preschool education is a right for 1–5 year-old children. Sustainable development was introduced as a fundamental value in the Swedish national curriculum for the preschool as late as in the revision in 2019 (National Agency for Education, 2019).

During the UNESCO campaign for education for sustainable development, the focus has to a large extent been related to three dimensions: environmental, social, and economic. These three dimensions have to be integrated to approach or achieve sustainability. However, it may be a good start for teachers to become aware of what these dimensions mean, before their work can be more directly focused on sustainability and Global Agenda 2030. We also want to point out that the UN Convention on the Rights of the Child is closely related to the issue of teaching sustainable development in preschool, since children's agency is important for them becoming local and global citizens (Višnjić-Jevtić et al., 2021).

The OMEP Commitment

In 2009 the World Organization for Early Childhood Education (OMEP) started a global project on education for sustainable development. The overall aim of the project and its different parts was, and still is, to enhance awareness of Education for Sustainable Development (ESD) among young children, OMEP members, and the international early childhood community, with a special focus on a child-oriented perspective and making young children's voices heard. During its 12 years of experience in running ESD projects, OMEP has involved around 142,491 children (birth-8 years); 15,574 teachers; 50,000 families; 489 student teachers; and 4,200

local communities in 1,200 projects in 35 countries (Pramling Samuelsson et al., 2021).

OMEP's research methods have included child interviews, children's dialogues, and child-driven, theme-based projects as part of children's early education programs. The findings showed that young children have significant knowledge about the Earth and important ideas about environmental issues, as well as knowledge of the responsibilities which individuals carry with respect to sustainability (Engdahl, 2015). OMEP's research findings make it apparent that adults often underestimate the competencies of young children (Engdahl & Rabušicová, 2010). It is argued that education for sustainability can be a driver for quality early childhood education (Engdahl, 2015; Pramling Samuelsson, 2011; Višnjić-Jevtić et al, 2021).

OMEP-associated researchers from 10 countries developed *The Environment Rating Scale for Sustainable Development in Early Childhood or ERS-SDEC* (Siraj-Blachford et al, 2016). The rating scale describes indicators of different qualities in specific content areas linked to the three dimensions of sustainable development; social and cultural, economic, and environmental sustainability. Today, the scale is most often used within in-service and pre-service education and for professional development. A second edition, *The OMEP ESD Rating Scale*, was launched in 2019 (OMEP, 2019), where the political dimensions of ESD were highlighted, as well as the need for transformative and systemic change. Today, the scale is translated and used in projects in 19 countries.

Although there are several studies presenting best practices (Williams, 2020) and organizations (OMEP Resource Bank for Education for Sustainable Development), there is an urgent need for further empirical research (Elliott et al., 2020).

The Swedish National Curriculum for the Preschool

Preschool education in Sweden has always been focussed on nature, children spending time outdoors every day, and learning about animals and plants, an aspect of sustainability that seems to be what preschool globally also typically involves (Årlemalm-Hagsér, 2013). Already in the 19th century, educational theorist Friedrich Fröbel introduced *nature* as an important part of young children's lives, and related it to teaching mathematics and morality (Fröbel, 1995[1863]). Taking care of *plants* in the garden and taking care of *animals* was part of the content of early childhood education from the beginning of Fröbel's Kindergarten.

Even though the word sustainability was not used in earlier versions of the national curriculum for the preschool in Sweden, the mission of preschools has always included values and content areas that pointed in that direction: *i.e.*, democracy, solidarity, equality, environmental conservation, and respect for nature (Årlemalm-Hagsér, 2013). In the revised curriculum, sustainable development is asserted to be a fundamental value, guiding ways of thinking and acting in the preschool environment, education, and teaching. The Swedish National Agency for Education states in the curriculum (National Agency for Education, 2019, p. 5):

Every single person working in the preschool should promote respect for the inviolability of human life, individual freedom and integrity, the equal value of all people, equality

between women and men, girls and boys, and solidarity between people. No child in the preschool should be subjected to discrimination on the grounds of the gender, transgender identity or expression, ethnic origin, religion or other belief, disability, sexual orientation or age of the child or any person with whom the child is associated, or to any other abusive treatment. All such tendencies should be actively counteracted.

Education should be undertaken in democratic forms and lay the foundation for a growing interest and responsibility among children for active participation in civic life and for sustainable development — not only economic, but also social and environmental. Both long-term and global future perspectives should be made explicit in education.

Everyone who works in the preschool should promote respect for the intrinsic value of every person and strive for sustainable development.

The curriculum points out how values and knowledge should be both the content of communication between teachers and children, and a pedagogy, a way to live everyday life in preschool (Pramling Samuelsson et al., 2021).

When it comes to goals, the curriculum states, for example (National Agency for Education, 2019):

The preschool should provide each child with the conditions to develop:

- a growing responsibility for and interest in sustainable development and active participation in society (p. 13)
- an understanding of relationships in nature and different cycles in nature, and how people, nature and society affect each other, (p. 15)
- an understanding of how different choices people make in everyday life can contribute to sustainable development (p. 15), and
- an understanding of natural sciences, knowledge of plants and animals, and simple chemical processes and physical phenomena. (p. 15)

These four goals could be viewed respectively as linked to 1) global citizenship; 2) climate change; 3) a sustainable lifestyle; and 4) how humans and nature are dependent on each other as within an Anthropocene perspective. Beside these goals, general principles are pointed out, *e.g.*, that children's agency and participation are central to their learning and acting. Borg and Pramling Samuelsson (in press) claim that children's agency can be gauged by observing change in their active participation in preschool activities, as stated in the Swedish National curriculum (National Agency for Education, 2019). Examples were found showing how they act independently; how they care for others; and how they say no to authority (the teacher) if they do not want to participate (Borg & Pramling Samuelsson, in press).

Theory and the Research field

This article is based on a critical and transformative theoretical perspective. This perspective highlights the need for critical transformative pedagogies with a focus on EfS (Jickling, 2017; Jickling & Sterling, 2017; Kopnina, 2020; Wals et al., 2017). Transformation, from this perspective, aims at structural reconfigurations or systemic changes to address sustainability challenges in diverse ways.

Pedagogical transformation towards a sustainable future will not happen automatically. There is a need for transformation that contests and disrupts unsustainable ways of thinking and doing (Jickling, 2017), and for new modes of action to support this development. As Kopnina (2020) stresses, there is a need for education that can encourage “teaching for sustainability [...] that emphasizes planetary ethic and degrowth” (p. 280). Jickling (2017) points out that it is necessary to develop the critical perspective in EfS; he calls it post-sustainability education, an education that is disruptive and transformative.

The research field of Early Childhood Education for Sustainability (ECEfS) has expanded considerably since Davis’s (2009) meta-study, which essentially initiated the research field. Several research overviews have further developed the field since then (Bascope et al., 2019; Boldermo & Eriksen Ødegaard, 2019; Davis & Elliott, 2014; Elliott et al., 2020; Green, 2015; Hedefalk et al., 2015; Somerville & Williams, 2015). Studies investigating teachers’ perceptions of education for sustainability (EfS) in early childhood education show that teachers are unsure what education for sustainability means and how it can be realized in early childhood education (Inoue et al., 2016), as they struggle to handle the complexity and ambiguity of sustainability issues (Årlemalm-Hagsér 2013; Hedefalk et al., 2015).

The research also shows that there is a need for teachers to get assistance in translating sustainability knowledge into pedagogy and in developing pedagogies that reflect a deeper understanding of sustainability (Elliott, 2012). A study by Furu and Heilala (2021) explored sustainability practices and pedagogies in Finnish early childhood settings. The findings indicated that there was no common basis for how sustainability was being addressed pedagogically in these settings. Other researchers have shown that teachers already think that they practice education for sustainability since they already have a nature-orientation in their curriculum work (Elliott & Davis, 2009).

Vaealiki and Mackey (2008) stressed that education for sustainability tends to be implemented by teachers who are passionate about sustainability. In a study by Årlemalm-Hagsér and Sundberg (2016), EfS was mainly associated with nature experiences, recycling, and reuse of resources. Descriptions reflecting the economic and social aspects of sustainability were missing. This limitation was reflected in the types of activities the children were afforded. The study also showed that early childhood centers supported by in-service training had a broader understanding of the concept and worked more actively on environmental and sustainability issues with the children.

Park and Pramling Samuelsson (2017) pointed out three preconditions for involving all children in sustainability in ECE. Firstly, teachers need to become aware that learning is life-long and that education must be of high quality and address sustainability questions. Secondly, it is not enough to leave educating young children for sustainability to the educational staff; both the world as a whole and every government need to take the same kind of responsibility for educating the staff, as they do for primary school children. The third precondition is the development of curriculum plans that include sustainability.

Larsson and Pramling Samuelsson (2019) have presented a plan for work with teachers in four Swedish preschools. The OMEP Environment Rating Scale for

Sustainable Development in Early Childhood (ERS-SDEC) was used in teachers' professional development to support them in reflecting on and changing their own practice, so they could see their everyday activities toward ESD for young children in a new light. Three overarching themes were derived from the initial interviews: 1) the value of *collective resources*; 2) *the wonders of nature*; and 3) *a global world*. At the end of the project, the teachers' expressions of their practice revealed three qualitatively different themes as factors in education for sustainable development: 1) *broadened awareness of sustainability*, 2) *an ecology-embracing culture*; and 3) *expanded perspectives*.

In a study by Borg and Gericke (2021) about preschool teachers' teaching practices related to social sustainability, the teachers involved initially viewed sustainability from an environmental perspective. However, after the teachers took part in an Efs-school development project, they began to integrate the social sustainability dimension into their teaching, and to associate local sustainability challenges with those that are faced internationally.

As shown in research about teachers' perspectives within ECEfS, three main trends are evident. First, early childhood teachers are struggling to understand how sustainability can be developed into a pedagogy and to develop pedagogies that reflect a deeper understanding of sustainability. Second, teachers stress that they are already working with education for sustainability within their centers, since nature-oriented content is part of their program. Finally, there are some indications that education for sustainability is often implemented by teachers who are already passionately engaged in issues about sustainability. To change current practice will require more than a new guiding document. It will take time and require development of competence by the staff, especially since the Swedish National Curriculum only outlines an overall mission about what to focus on, not a detailed national regulation, as is the custom in some other national curricula.

Method

This was a qualitative study, intended to determine how preschool teachers describe what they do to meet the relatively new curricular demands of implementing education for sustainability, which is now a national mandate.

The participants in the study were employed in preschools that were just entering a Swedish three-year research and development program called *Sustainable Preschool* (Ifous, 2021). The organizer of the program is the independent institute *Ifous — innovation, forskning och utveckling i skola och förskola* (Institute for Innovation, Research, and Development in School and Preschool). Eight municipalities and one independent national provider of ECE have enrolled around 200 preschool teachers and 50 preschool principals in the program.

As researchers in this program, we had a twofold task. On the one hand, we sought to support the overall development of the program; on the other hand, we designed research and collected various kinds of data, by inviting the teachers to take certain actions in their work with their children and to document their practice. The program works in accordance with the ethical principles stated by Uppsala University (2021), where all participants give written consent to their participation.

The empirical data for this article was collected through a written questionnaire with three open questions. The questionnaire was administered to approximately 200 preschool teachers in the *Sustainable Preschool* program. The three questions were related to the revised Swedish curriculum (National Agency for Education, 2019):

- 1) In what ways does your preschool environment express education for sustainable development? Have you made any changes after the revision of the preschool curriculum?
- 2) How is the mission about sustainable development visible in the education in your preschool?
- 3) Give some examples of themes or projects with teaching goals directed towards sustainable development that have been initiated by the children or by staff.

The data was collected during the semester before the official start of the program. Our intention in asking all participants to write about their practice was twofold: first, to see how they themselves presented what they did, and thereby show us what they considered to be education for sustainability; and second, to scrutinize the knowledge base among the teachers for further planning of the program. One hundred fifty-three teachers (76.5%) responded to the questionnaire.

A content analysis of the preschool teachers' answers to the questionnaire (500 pages, in toto), was carried out by all three researchers independently, based on the critical theoretical approach (Alvesson & Sköldbberg, 2009; Åkerblom et al., 2020). They then had a comparative discussion, which resulted in the synthesis of categories to describe the teachers' different views. The analysis focused on what could be understood as their views of what education for sustainability means, and what content and activities they include in their education today. Since we researchers had done our own analysis separately, the conformity between the results is evidence of the validity of the findings.

Results

The analysis of the teachers' understanding of the concept of sustainability and of the educational content and activities related to sustainability which they described, reflected four major themes: 1) a need for more knowledge about sustainable development; 2) business as usual; 3) changes in the preschool environment; and 4) transformative change.

1) *A need for more knowledge about sustainable development*

The requirement for everyone who works in the preschool field to strive toward sustainable development was not instituted until the latest revision of the Swedish National Curriculum for the Preschool Lpfö 18 (National Agency for Education, 2019, p. 5). A couple of years later, this is a well-known mission among the teachers who participate in the Sustainable Preschool program (Ifous, 2021). Many teachers reported that this was a new area, although they were partly familiar with it, and they asked for more information. A common answer was that they had been “working with sustain-

able development” for 2, 3, and even 5 years. This was often the result of a decision made by their municipality and/or private provider to prioritize EfS. Some teachers, with long experience, said: “We have always worked with sustainability; however, we haven’t used the concept as such.”

The teachers’ answers can be interpreted in two ways: On the one hand, they show that preschool teachers have a long tradition in EfS-related content; on the other hand, it may indicate that the teachers haven’t changed or developed their teaching after the curriculum reform in 2019. This interpretation is further underlined by the demand for more information about early childhood education for sustainability. There was an awareness of the complexity in the field of sustainability, and the teachers were interested in support on how to work directly with the children for sustainability.

Likewise, the three dimensions of sustainable development mentioned in the national curriculum — “not only economic, but also social and environmental” (National Agency for Education, 2019, p. 5) — seemed to be recognized and accepted by the teachers. This was shown in their descriptions of what they actually do with the children (see the next theme). However, how integrated the teachers’ knowledge about the new task of promoting sustainable development actually is, may be questioned. They made few references to the UN Sustainable Development Goals (UN, 2015). Even the ongoing pandemic was only mentioned by a few teachers, although it is an obvious example of non-sustainability. Most teachers wrote that they wanted to get a deeper understanding of the concept of sustainable development and an update on the latest research.

2) *Business as usual?*

The descriptions of what sustainability-related content the teachers included in their teaching showed a great similarity in multiple answers. Clearly, some of the content was not new; for instance, environmental education has for many years been an important content area in Swedish preschools (Ärlemalm-Hagsér, 2013). There was a tendency to describe education as “business-as-usual,” indicating that EfS is not a new field, and that the teachers had been addressing EfS before it became a compulsory task in 2019. It is hard to know whether planting seeds, for example, was a continuous routine in preschools, or if it returned as a new activity following the revised curriculum in 2019.

A common trend when the teachers were describing their content and activities was to divide the content into three areas, according to the three dimensions of sustainability. We will now illustrate this trend by presenting some examples.

The environmental dimension

Most of the examples of content and activities related to the environmental dimension. Taking care of *plants* in the garden and taking care of *animals* were common themes in the teachers’ answers, with activities such as planting seeds and watching them grow and studying animals close to the preschool. Here one can see an openness for biological diversity, and the richness of differences. One may claim that preschool education today is relating traditional content to environmental sustainability.

However, the environmental dimension today is not only about animals and plants but *has expanded* to include waste-management, compost, soil, and food on the table, making the ecological cycle visible. More specifically, it includes how degradation occurs; how organisms pick up rubbish; links between natural science, environmental protection, and preservation; and how to deal with issues like biodiversity loss. Only a few teachers wrote about presenting preliminary understandings of the fact that planetary systems and humanity's behavior are inextricably linked.

Food and health were central contents in the teachers' responses, both broadly and in terms of what kind of food should be eaten: it should be healthy, ecological, and grown nearby. The teachers also said that they talked with the children about the food they were eating every day, where it came from, where it was grown, etc. Some pointed to letting the children become part of the cooking process, but most common was to work *against food waste*, since it is common in society for a lot of food to be wasted. They stressed that healthy food does not include sugar — which seems to be a reaction based on physicians' warnings against overweight and obesity.

Still another aspect related to health was the issue of movement. Many teachers associated sustainability with physical activities, and they reported that they planned for exercise, dance, yoga, and so on; children should not only be outside and play, but they should also be involved in physical training of various kinds.

The social-cultural dimension

The social aspect related to sustainability was mainly discussed in terms of the *relationships between children*, which included values of how to behave toward each other. The teachers related social sustainability with emotions, how one feels, and how one perceives one or another situation. Many teachers cited specific programs about emotions they used for making children aware of feelings.

The UN Convention on the Rights of the Child (UN, 1989) was another focal point within the social-cultural dimension. Quite a few responses addressed children's "rights and obligations"; others wrote about accepting differences. Some teachers related education for democracy to this dimension.

Other aspects of social and cultural sustainability were related to working with norms and values, preferably with a critical approach. Addressing children's rights by reading and dramatizing stories to promote non-discriminating attitudes and behavior were other common examples. A multicultural approach was mentioned only in a few texts, and then mostly exemplified by the importance of developing the Swedish language as well as the mother tongues.

The economic dimension

In this dimension, the teachers wrote mostly about content for staff to handle. Economic aspects of sustainability became a question of being an informed consumer, who is aware of buying toys made of natural materials, avoiding plastic, and insisting that everything should be free of toxic chemicals. But economic sustainability also means buying fewer materials and having the children use (only) different kinds of left-over material, containers, boxes, etc., for art and creative work. Some also claimed

that children should not bring their creative work home; instead they should dismantle it into its constituent pieces so that the pieces could be reused.

Reuse and *Saving* were two central notions the teachers used to describe economic aspects. The children were encouraged to save water, turn off the electricity, and use both sides of a piece of paper when making drawings. Together, they also fixed things that were broken instead of buying new things, if possible.

3) *Changes in the preschool environment*

The teachers described both concrete *physical changes* and more *pedagogical changes* that were made after the revision of the national curriculum (National Agency for Education, 2019). But there were also teachers who wrote that there were no visible changes in the preschool environment. Even teachers who had worked in preschools for almost 40 years claimed that they couldn't see any actual change in the environment. One reason given was that there were different opinions within the team of educators about what should be done.

The teachers did identify some changes in the *physical environment* which they associated with the emphasis on sustainable development. They arranged for calm places where the children could relax, be re-energized, and experience well-being many times during a day. Another example was creating environments for promoting play.

Other reports on changes in the preschool environment seemed to be a result of priorities made higher up in the organization. One common example of this top-down guidance was a mandate to delete all toxic plastic and other dangerous chemicals from the preschools. Likewise, when municipalities and private providers organized the sorting of different types of waste, the preschool teachers introduced bins and boxes for the various materials. This activity could be done in two different ways: either by buying ready-made "Waste sorting-monsters" (Hässleholm, 2021) and placing them on the premises, or by having the children make the sorting bins and boxes, including deciding on their location and rules. Such containers were marked with symbols or characters so the children knew where to put things. The containers were for paper, metal, glass, plastic, and sometimes other things.

To promote sustainable routines, teachers described that they put up signs and photos, reminding the children not to waste water, electricity, and to reuse things. Many answers described the sorting of waste and bringing it to garbage stations, and recycling food waste in brown paper bags, to be collected by the local garbage system.

Quite a few teachers had installed a Give-and-Take cupboard for clothes, shoes, toys, and equipment that some children had outgrown, for other parents to take and use for their children.

Outdoors, the most common change reported was that the teachers arranged different corners or framed areas for planting vegetables and flowers. Others have kept some area of the garden uncut, thereby creating a meadow for insects to live in.

4) *Transformative change*

As shown above, there was a clear tendency to identify content areas and activities linked to the social-cultural, the environmental, or the economic dimensions

of sustainability. A few teachers described an education based on a more holistic view, where these dimensions were intertwined, and they included the additional goal of empowering the children. EfS has a political dimension that calls for systemic transformation (UNESCO, 2020). Some teachers highlighted the view that this is no time to do business as usual, since it is urgent for everyone to work toward a more sustainable world.

Campaigns and tools from non-governmental organizations, such as the Keep-Sweden-Tidy foundation, Eco-Schools, UNICEF, and OMEP, were often referred to as inspirations for change. These were mostly the result of bottom-up initiatives, where one teacher would propose an activity, and it would grow within and between preschools. Picking up garbage outdoors was one example that might lead to transformative change. The activity started by joining the “Garbage picking Day” (Keep-Sweden-Tidy, 2020), but soon every walk in the neighborhood or into the forest became a garbage-picking walk, with the potential for transformative change. Yet another example had to do with collaboration between the preschools and the children’s homes. It was quite common for children who were trained in sorting waste, reuse, and recycling, to bring these ideas home, and thus initiate change in a wider sense.

The Covid-19 pandemic has also led to some possibly transformative changes. Children were outdoors more than before, and the teachers have moved many activities from indoors to outdoors, thus making use of nature and physical activities in a new way.

A few of the teachers shared experiences where their education included transformative change. One example talked about addressing democracy in such a way that the children would perceive that they are part of something larger, and where they try to connect the preschool to society and to the world. Formal democracy, as represented by making a choice and voting, were used as methods for children to understand how larger decisions in society are taken: “One person, one voice can make a difference.” Another teacher brought up the importance of addressing poverty and unequal economic living conditions, which opened up the situation for actions leading to transformation.

Discussion

The aim of this article was to describe what Swedish preschool teachers say they are doing in their everyday work with children in respect to the formal task of education for sustainable development, an educational task that recently became mandatory in Sweden (National Agency of Education, 2019). The two research questions were:

- 1) What content and activities related to education and teaching for sustainability do ECE teachers report? and
- 2) What changes towards sustainability occurring in the preschool environment after the revised curriculum do ECE teachers report?

Below we will first connect the findings to the research questions, and then open up an overall discussion about Swedish ECE teachers and education for sustainability.

We then will discuss a broader perspective about the need for a new, critical approach to EfS that contests, disrupts, and transforms unsustainable ways of thinking and acting into sustainable ways of doing things (Jickling, 2017).

Content and Activities

It was interesting to see how the environmental dimension both dominated the type of educational content and also represented what was most familiar to the teachers in their teaching and learning activities. There were links leading back to the 1975 Pre-school Reform (SOU 1972: 26, 27) and the mandate to work with Nature and science, but also all the way back to the influence of Fröbel (Fröbel, 1995[1863]). The teachers set goals of getting to know nature, being in close contact with nature, and developing an understanding of the holistic relationships between humans and Nature, a view that is still common (Davis, 2009). However, the findings showed that there is a need for updated knowledge about sustainability.

The traditional themes of animals, plants, and the cycles in nature need to be put into a new framework, with the goal of participation in achieving sustainable development. For example: In addition to exploring insects, the risks linked to biodiversity loss could be addressed, and actions like building insect hotels taken. Educational themes could be related to the complexity of sustainable development. Well-trained teachers with an awareness of the urgency of the situation and an ambition to include EfS in their work with the children are preconditions for successful reorientation toward sustainability.

Looking at what the teachers wrote about their activities within the social and cultural dimension, it is clear that they were focusing on the individual child and how he or she relates to other children, and a view of children as active but not as agents of change (Ärlemalm-Hagsér, 2017) or global citizens. The role of the child is seen differently by teachers and researchers. Teachers in the study described “the ideal child” as one who is nice to everyone and doesn’t hurt anyone’s feelings (Emilsson, 2008).

Over the last 40 years, Sweden has grown into a heterogeneous and multicultural country, with, on average, 25% of children having a migrant background (National Agency for Education, 2020). Individual preschools have anywhere between 0 and 99% children with a migrant background. This change in society is recognized in the revised national curriculum:

The increasing internationalisation of Swedish society places high demands on people’s ability to live with and understand the values that derive from cultural diversity.

The preschool is a social and cultural meeting place that should promote children’s understanding of the value of diversity. Awareness of different living conditions and cultures can help to develop an ability to understand and empathise with other people’s conditions and values. (National Agency for Education, 2019, p. 6)

Compared with the many examples given in relation to the environmental dimension, there were few examples linked to working with multicultural education; this showed a weak awareness of the links of such an education to social and cultural sustainability. Likewise, there was almost nothing about inequality, the fact that Swedish

preschools are not equitable, and the unjust living conditions of children throughout the world.

Some of these issues are clearly present in the UN SDGs (UN, 2015), and the lack of practical examples of them in their answers indicates that the teachers are not so familiar with these goals, or how to address situations beyond the here-and-now in their preschools.

Turning to the economic dimension, the examples focused on individual actions, such as savings and reuse, but really said nothing about lifestyles and economy. On the other hand, research about children's ideas of economic question related to sustainability shows that most children are aware of sustainable aspects of everyday life at home, for example, when it comes to transport related to sustainability (Borg, 2017).

Changes towards Sustainability

It is interesting that the actual changes reported quite often were initiated by political or policy decisions made higher up in the preschool administration. There seemed to be a reorientation in some societal fields related to sustainability that has trickled down to the preschools and called for structural and organizational changes. The examples given were about sorting waste, recycling food waste, and eliminating toxic chemicals and old plastic.

How to implement these top-down changes varied. For both children and staff, it seemed important that they were involved in setting up the processes, *e.g.*, where to place waste and what rules to follow (for example, whether to use purchased or school-made waste sorting bins and baskets). EfS is about empowerment, raising the awareness and competence to act of all participants (The Gothenburg recommendations, 2008). UNESCO, in the *Roadmap for ESD*, called for transformative action:

Fundamental changes required for a sustainable future start with individuals. ESD has to place emphasis on how each learner undertakes transformative actions for sustainability, including the importance of opportunities to expose learners to reality, and how they influence societal transformation towards a sustainable future. ESD in action is citizenship in action. (UNESCO, 2020, p. 18).

Education for sustainable development is not about passing on knowledge. There is an overarching goal to raise the awareness about the disrupted status of planet Earth, and to encourage and promote transformative changes. In the 1970s, Swedish preschool teachers were inspired by Agenda 21 (Forsberg, 2002) and introduced environmental education in the preschools, including activities towards sustainability with the children. Now, with the UN Global Goals (2015) and the revised Swedish National Curriculum (National Agency for Education, 2019), there seems to be a new era and a growing interest in education for sustainability. The findings of this study show that there is an interest in EfS and a longing for more knowledge and for change. Teachers also need courage and professionalism to lead the way in finding the relevant content and activities for early childhood education for sustainability. The teachers are struggling to find new ways to meet the demands from the guiding documents and in light of the planetary crisis. As is well stated by Stefania Giannini, Assistant Director-General for Education in UNESCO:

We are increasingly asking if what people learn is truly relevant to their lives, if what they learn helps to ensure the survival of our planet. Education for Sustainable Development can provide the knowledge, awareness and action that empower people to transform themselves and transform societies. (UNESCO, 2020, p. 2)

Conclusion

Contemporary research on education for sustainability stresses the need to contest, disrupt, and transform unsustainable ways of thinking and doing (Jickling, 2017) and an education that emphasizes planetary ethic and degrowth, as suggested by Kopnina (2020). The interest and longing for more knowledge and for change, shown by the teachers in our study, may indicate that this is the time to initiate changes in early childhood education curricula all over the world. ECE might well take an active role in steering the journey towards a sustained climate and a planet for humans and all life on earth.

Ethics Statement

The data in the present article was collected among participants-to-be in the research and development program *Sustainable preschool* (Ifous, 2021). The participants had all been appointed by their principal or the Head of education in the municipality/organisation where they work. As researchers, we wanted to collect a pre-program position related to the participants' knowledge and views on sustainable development.

The program manager from Ifous for *Sustainable preschool* had collected informed written consent for the program and for the research project from all participants, using a Form for consent that was developed jointly by the program manager and the researchers. Parallel to this pre-program data collection, we prepared the start of the program and the research project, e.g., a part of the development program *Sustainable preschool*, and made an application to the ethical committee of Mälardalen University.

Author Contributions

The questionnaire used for data collection was developed jointly by the three authors. The distribution was made by the program manager from Ifous. The participants wrote their answers in a Word document individually and up-loaded their text via a link to a closed platform at Ifous. All three authors downloaded and read the texts and analyzed the data individually. The authors then made a comparative analysis together, which showed a high agreement. The comparison then resulted in the themes, categories and quotes chosen for presenting the result of the questionnaire. When producing this article, the authors have taken turns writing, and all three authors take responsibility for the whole article.

Conflict of Interest

The authors declare no conflict of interest.

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