

Collective Resources as a Precursor for Educating Children Toward a Sustainable Global World

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Abstract

Purpose: Preserving and caring for nature in a sustainable way has long been part of Swedish preschool practice. However, recently has it been explicitly referenced in the Swedish preschool curriculum with the goal of incorporating sustainability holistically and coherently in all areas of children’s daily preschool experiences through play, care, and education. Research has revealed a potential roadblock to achieving this goal; the difficulty connecting the three inextricably linked dimensions of sustainability: ecological, social–cultural, and economic. The purpose is to generate knowledge about preschool teachers’ professional understanding of education for sustainable development (ESD) in early childhood education (ECE) by implementing and enhancing the operationalization of such work in four Swedish preschools.

Design/Approach/Methods: The design of the study rests on the involvement of teachers in work where they created sustainability activities supported by the *Environmental Rating Scale for Sustainable Development in Early Childhood* (ERS-SDEC). The data consist of teachers’ narratives and interviews, and a qualitative content analysis is used from which a number of themes emerged.

Findings: The initial interviews foregrounded three themes: the value of collective resources, the wonders of nature, and a global world. At the end of the project, the teachers’ expressions of their

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practice revealed three qualitatively transformed themes: broadened awareness of sustainability, ecology embracing culture, and expanded perspectives, as factors of ESD.

Originality/Value: Teachers did increase their awareness of working with children and expressed a strength in using each other as collective resources. By that, their professional understandings of ESD in preschool developed.

Keywords

Collective resources, preschool education, professional understanding, sustainability

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Background

In Agenda 2030 (www.un.org; goal 4.2), it is stated that all countries by 2030 should “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.” Today, only about 50% of children around the world receive care and education in early childhood settings, including preschool. Recognizing that today’s children will become the leaders of tomorrow, in this article, we argue for expanding and further integrating education for sustainable development (ESD) in early childhood education and care (ECEC). ESD promotes a holistic view of sustainability, including environmental, economic, and social–cultural aspects. Successful ESD in early childhood requires that preschool teachers be well-informed about sustainability pedagogy, cognizant of ways to engage young children in sustainable life practices, and aware of children’s capacities as agents of change in their preschools, homes, and communities.

Across age groups, geography, cultures, and life circumstances, there is a growing awareness of the myriad of environmental and social challenges affecting our planet. Influenced in part by Swedish teenage activist, Greta Thunberg,¹ children and young people have recently raised their voices and taken actions to combat these challenges. In 2018, various news media spotlighted Thunberg’s deep commitment to the environment and this publicity, in turn, helped spark school strikes, throughout Sweden and in numerous cities and towns in other parts of the world, to raise awareness about the need to urgently address climate change. In December 2018, Thunberg was invited to speak to world leaders during the Katowice Climate Summit at the United Nations. She emphasized growing awareness, knowledge, and activism about sustainable living among children and other young people.

The importance of sharing ideas and good examples from practices that integrate ESD within early education was highlighted by Bascopé et al. (2019) in their systematic literature review based on research articles about ESD. They argued that *citizenship* is a main interdisciplinary factor when

supporting children in transforming their context by thinking, acting, and collectively forming a more sustainable society (Bascopé et al., 2019). This article focuses on educative aspects within preschool settings where ESD was reviewed, reformulated, and reorganized by preschool teachers based on their participation in the research project. The project focused on sustainability and thematic project work to generate innovative ways of organizing early childhood education (ECE) for children aged 1–5.

The perceptions and attitudes of in-service teachers in ECE toward ESD in South Korea and Sweden (Park & Pramling Samuelsson, 2016) revealed that there were double as many teachers from South Korea who had heard about sustainability and who claimed they understood it than from Sweden; mainly, they said they had received the information via media or in workshops. Most South Korean teachers explained ESD as maintaining biodiversity in the local environment and recycling waste products, while the Swedish teachers explained it as exploring natural resources for human benefit while maintaining critical natural capital. When answering questions about which content to work with in ECE, the Swedish teachers focused to a much larger extent on human rights, cultural diversity, health and food, gender equality, sustainable communities, and sustainable products and consumption. The South Korean teachers, on the other hand, focused on natural resources, disaster risk reductions, market economy, and poverty reduction. They were also asked about difficulties in implementation of ESD. The largest differences were that the South Korean teachers said that there was a lack of understanding among teachers, while the Swedish teachers said that a problem with implementation was a lack of teaching and learning materials for ESD. Both barriers were identified by Lasen et al. (2017) who also foregrounded three other constraints in the early years of primary school (aged 4–7) when implementing ESD in education. These are linked, first, to teachers' perceived obstacles to implementing ESD due to curricular issues where a main focus on literacy and numeracy may be of primary focus. Second, teachers' perceptions of children's capabilities may function as a holdback, and third, there may be a gap in teachers' professional knowledge and their access to resources and theoretical didactical competence (Lasen et al., 2017).

A qualitative study on 17 teachers ranging from preschool to high school in Sweden was carried out by Björneloo (2007), focusing on their understandings of the phenomena of sustainable development (SD) as it was expressed in their teaching. The perspectives taken by the group of teachers were as follows: (a) ESD as an *ethical* project, which aims to develop the pupils' responsibility; (b) ESD as a *cultural building* component, which aims to give pupils a holistic view of the surrounding environment; and (c) ESD as children's *individual sustainability* where *empowerment* is essential. Furthermore, Hedefalk (2014) identified teaching traditions in the preschool context, for example, how teaching and critical actions are conducted in a preschool and which conditions allow preschool children to develop their action competencies in relation to a sustainable future. In

Hedefalk, Almqvist, and Östman's (2015) review of research literature, they put forward that blind spots exist in empirical research on teachers' supporting children's capabilities to handle and take action in global arenas, such as starvation, pollution, and child labor.

Regarding teachers and ESD, research has shown that teachers often have difficulties interconnecting the three inextricably linked dimensions of sustainability: ecological, social-cultural, and economic (Kultti et al., 2016), which are highly important when forming high-quality education for sustainability. Teachers', as well as parents', knowledge is of great importance when supporting children's knowledge toward ESD. Borg et al. (2017) identified differences between eco-certified and non-eco-certified preschools in how the preschool and the families influenced children's behaviors and attitudes on social, economic, and environmental sustainability. The study found a positive relationship between children's declarative (i.e., children's descriptions of what they know) and functional knowledge (i.e., what children do in relation to their understandings) of sustainable issues and the involvement of teachers and guardians in sustainability-related discussions and activities. Ärlemalm-Hagsér and Sundberg (2016) also identified variances connected to eco-certified and non-eco-certified preschools, mainly focusing on associations of the concept of SD. The certified preschools explicitly linked SD to the word *future* twice as often as the non-eco-certified preschools did. Furthermore, some aspects, such as managing waste, recycling, and sorting, were more common in non-eco-certified preschools (Ärlemalm-Hagsér & Sundberg, 2016). Even though these concepts and actions toward a healthy planet are of importance, ESD goes well beyond such actions.

Research has also focused on the importance of having a critical stance on children's participation in ESD. For example, Hedefalk (2014) pointed out the importance of teachers creating *real* opportunities for children to take part in situations in which they can make their voices heard and at the same time have the space to disagree. Such positions demand high awareness and professional stance of teachers; a preschool practice where pluralism, multiple voices, and perspectives are acknowledged; and teachers who welcome and foreground children's diverse understandings. These three aspects are, according to Hedefalk (2014), of great importance in developing children's action competencies.

Research aim

The aim of this research was to generate knowledge about preschool teachers' professional understanding of ESD in ECE by implementing and enhancing the operationalization of the work with sustainability-related issues in four Swedish preschools. This was done by the means of a rating scale focused on the three pillars of SD (Siraj-Blatchford et al., 2016). The research questions at issue were

- What aspects of teachers' changing understandings of ESD in preschool were possible to identify during the course of their work?
- In what ways did teachers' changed understandings have bearing on children's possibilities to develop their understanding of ESD and its relation to local and global sustainability?

Let us start by looking into the policy influences on Swedish ECE practices, which embrace the autonomy of the teachers and formulate goals to strive toward for the children enrolled in the programs.

Policy influences on Swedish ECE practices

Since 1998, preschools in Sweden have been steered by a National Curriculum for Preschool (Ministry of Education and Sciences, 1998), the first step in the education system, although not obligatory. The national curriculum has been revised five times, and since 2019, ESD has been included very strongly (National Agency for Preschool Education, 2019). At the very beginning of the section about sustainability, health, and well-being, the curriculum states:

The education must be conducted in democratic forms and lay the foundation for a growing interest and responsibility among the children in order to actively participate in society and for sustainable development—both economic and social and environmental. Both a long-term and a global future perspective should be made visible in the education. (p. 9)

Everyone who works in Swedish preschools should promote respect for each person's own value and promote SD, which is also related to health and well-being. The preschool education should give every child opportunities to explore, ask questions, and talk about phenomena and connections in the world around them and thus challenge and stimulate their interest in health and well-being and for SD. Such an inherent view of children is that they are learning and developing during the course of the day by the means of play and activities, indoors and outdoors, and specifically the children are not separating when they play or learn—but devote themselves to creating meaning about the world around them. Such a view embraces both a child's perspective (child-centeredness) and children's perspectives (the children's own voices) and can be attributed the label of a playing–learning child (Pramling-Samuelsson et al., 2011). The children should be given the opportunity to develop knowledge about how the different choices that people make can contribute to SD, economic, social, and environmental, which is clearly related to the content of sustainability stated in the Global Sustainable Goals 4.7 (www.un.org). There are also three direct goals in the curriculum related to SD:

To develop:

- a growing responsibility and interest in SD and to actively participate in society (p. 12);

- understanding of how people's different choices in everyday life can contribute to SD (p. 14);
- understanding of relationships in nature and for nature's different cycles and for how people, nature and society influence each other (p. 14).

Teachers are also instructed to create conditions for the children to understand how their own actions can affect the environment and contribute to SD (National Agency for Preschool Education, 2019). Teachers are expected to make sense of this by themselves since the curriculum includes nothing about how to implement it. Similar to all goals of the Swedish curriculum, there is space to act within the framework of the curriculum as long as it fits within the frame of the curriculum. This means that it is quite challenging for teachers who are not newly educated since this topic is considered a new, expanded, focus of preschool teacher education.

The basis for including sustainability in ECE is the United Nations Convention of the Right of the Child (UNCRC), and therefore, children's own agency and right to be heard. Still, there may be limitations in just using the UNCRC as a basis when working with ESD in the early years. As noted by Davis (2014), the right-based values go beyond individual rights and urge for a reconceptualization of these matters. That entails going beyond UNCEC's foundational rights: to embrace the right to become an active participant, to have collective and intergenerational rights as well as embrace bio-ecocentric rights (Davis, 2014).

A child's right to their own perspective (as stated in UNCRC) is strong in the Swedish curriculum and will become even stronger in 2020 when the UNCRC will be brought into the law, with children's legal rights strengthened in all matters (www.government.se). On the other hand, embracing the important values of UNCRC is not enough when working toward a sustainable future by supporting young children's learning and development in early childhood settings around the world. This will be elaborated on later.

Theoretical starting points

SD, as well as ESD, may well be understood as a complex and challenging area of knowledge inherently intertwined in a range of political, economic, and social levels in a multitude of diverse ways of understanding life on earth. The general area of SD is researched from a range of theoretical starting points, stretching from individuals to groups of people, from culture to economy, from children to elderly people, from agricultural societies to hi-tech communities—all of which are responsible for the impact they have on the planet's natural ecosystems.

The theoretical starting point of this article captures the range of perspectives and complexities by the use of Rogoff's (2003) theoretical positioning, by foregrounding a relationship between individuals and cultures:

The related proposals for sociocultural theory represent a general agreement that individual development constitutes and is constituted by social and cultural-historical activities and practices. In the emerging sociocultural perspective, culture is not an entity that *influences* individuals. Instead, people contribute to the creation of cultural processes and cultural processes contribute to the creation of people. Thus, individual and cultural processes are *mutually constituting* rather than defined separately from each other. (p. 51, italics in original)

To participate in such sociocultural environments, people are required to share knowledge and to synchronize actions, thoughts, ideas, hopes, and worries, regardless of age, gender, occupation, social status, level of income, appearance, weight, height, and so on. All around, there are possibilities to share strategies and actions for working toward a changed way of living, which contributes to altered conditions for life, regardless of where this alteration starts. Alteration of conditions for life includes both increased opportunities for schooling and access to clean water, and at the same time, for others, it includes reduction of using clean water and changing what may be considered unsustainable patterns. When Rogoff (2003) talked about prerequisites for children's progress through guided participation, she explained that "communication and coordination during participation in *shared endeavors* are key aspects of how people develop" (p. 285, italics added). Here, the shared endeavors are interpreted as the collective responsibility for saving the planet while still making it possible for people to prosper.

Furthermore, Rogoff talked about insider and outsider communication depending on the positions taken. Such perspectives are essential for children to be aware of existing preconditions of the world and to develop a critical stance. She also highlighted that

the argument that only members of a community have access to the real meaning of events in that community, so outsiders' opinions should be disregarded, run into difficulty when one notes the great variations in opinions among members of a community. (Rogoff, 2003, p. 24)

Members of a community may "have difficulty noticing their own practices because they take their own ways for granted, like the fish not being aware of the water" (Rogoff, 2003, p. 24). This implies that a lot of what is done in everyday life in a community (such as within a preschool) may be taken for granted, and to broaden someone's views, such notions need to be consciously considered.

Method

The method section of this article is divided into three parts: (a) how the researchers worked with the teachers on an in-service project, (b) how a rating scale was used as a quality developmental tool when organizing a project embracing ESD, and (c) how the data were generated and analyzed.

A joint endeavor

This approach to research could be called action research (Rönnerman, 2011) since it is about critiquing and developing the preschool teachers' competence, but with some main differences. The definition of a problem in traditional action research derives from the teachers, who define what they want to develop, while in this study the initiative came from the researchers. The incentives from the researchers were to raise the awareness for ESD in ECE since it is a relatively new content area in work with young children. While the researchers guided the process, they also collaborated with the preschool teachers (Pramling Samuelsson & Pramling, 2013).

The outline of the project was formed as a four-phase collaborative venture where researchers initially asked the four participating preschools to choose an area suitable to the children in their group and to arrange a thematic project. In the first phase of the project, the participating teachers were asked how they perceived the concept of ESD and then to give a brief description of their present work conducted in the preschool setting. At a meeting at the collaborating university, all teachers were given time to discuss their statement, and the researchers contributed with recent research about ESD.

The researchers also introduced and supported the teachers in how to use the Environmental Rating Scale for Sustainable Development in Early Childhood (ERS-SDEC) (<http://eceresourcebank.org/>), described in more detail below, as a tool for evaluation and professional development. The preschool teachers formed groups and discussed concepts such as children, childhood, education for sustainability, and the scale. During the second phase, and in alignment with action–research processes, the teachers' self-chosen and self-organized thematic work advanced at the preschools. The researchers were available via email for support. The researchers visited all preschools during the third phase. This phase included a discussion based on the teachers' reflections on the ERS-SDEC in semi-structured interviews. When the preschool year was coming to an end, the teams of preschool teachers participated in a concluding meeting to share their insights about the tool as well as the children's understandings during the process of the ESD-oriented thematic work. This last phase was conducted in terms of presentations, discussions, as well as in-depth and focused questions from both participants and researchers. By the use of action research in this particular project, change was supported and engineered as an integral part of the process. Furthermore, practice did not only support researchers with opportunities to in-depth studies—they also improved theory (Robson, 2002). In this case, the collaboration has generated both didactical and theoretical knowledge of ESD in preschool settings.

Using the OMEP rating scale for ESD as a quality developmental tool

The official name of the rating scale is the ERS-SDEC. The scale is available in nine languages (www.worldomep.org) and was developed with inspiration from the Early Childhood Education

Rating Scale (ECERS) established by Harms, Clifford, and Cryer (1998). The ECERS is a scale for evaluating the general quality of preschool education. The scale has seven steps including 1 for not sufficient, 3 for minimal, 5 for good, and 7 for excellent quality. For each grade, there are indicators to use for evaluation. These levels have been adopted by the Environmental Rating Scale for Sustainable Development in Early Childhood (ERS-SDEC). A group within the World Organization for Early Childhood Education (OMEP) worked a number of years developing the rating scale. It was revised and tested several times in the process by representatives from various countries. When coming to an agreement of the base outline, pilot studies were performed in 10 participating countries: Chile, China, Kenya, Korea, Norway, Portugal, Sweden, Turkey, the U.K., and the U.S. (Siraj-Blatchford et al., 2016).

The original version of the scale (<http://eceresourcebank.org/>) was meant to be used for comparison between countries. However, all scales like this create a certain dilemma. If the scale is too general, it will not really measure reality in a specific context, and ECE is very different in countries around the globe in terms of quality, staff, program, and so on (Pramling Samuelsson et al., 2018). This means that adaptations of the scale to each country's national and curricular guidelines are optional, for example, if using it for professional development as in Sweden. The Swedish adapted version (<http://www.omep.org.se/esd-rating-scale-1>) was tested and reviewed in collaboration between researchers and preschool teachers a number of times (Kultti et al., 2016).

Analytical process

The analytical process rested on two sets of data: (a) transcribed group interviews and (b) teachers' talk in relation to their PowerPoint presentations. During analysis, a split of the data was done to capture notions of change in teachers' professional understanding of ESD. The analytical process was undertaken according to procedures of qualitative content analysis as outlined by Graneheim and Lundman (2004). The two sets of data were independently refined into meaning units, further analyzed and abstracted into condensed meaning units. The themes derived from each data set were thereafter explored according to three theoretically grounded characteristics stated by Rogoff (2003): (a) the creation of cultural processes and their contributions to the creation of people, (b) the participation in shared sociocultural activities, and (c) the noticing of one's own practice.

Results

The result of the qualitative content analysis revealed six themes, three from each data set. The first three themes originated from the teachers' professional talk about their educational projects in the beginning of their projects in terms of "collective resources," "the wonders of nature," and "a global world." The second set of themes emerged in the end of the projects, showing altered or

expanded ways of understanding ESD in ECE; in terms of “broadened awareness,” “ecology embracing culture,” and “expanded perspectives.”

Collective resources, the wonders of nature, and a global world

This part of the results foregrounds collective resources, nature situated within a global world. It is about children’s right to participation, which must be understood as more than the individual’s right to choose. Because of this, collective resources are an important theme for sustainability. The following sections explain how this was expressed by the preschool teachers in diverse ways.

Collective resources. The collective resources central for elaborating ideas around ESD that emerged from the data reflect preschool teachers’ talk about available resources as vital to their ECE practice, such as communal playgrounds, child-friendly museums, parks, and public transportation. The teachers at the preschool, here named Orange,² used children’s interests in vehicles as an entrance toward transportation as teaching content:

The children were very interested in buses and various vehicles and so they talk about trams and then *Mulle* [A figure in a Swedish outdoor activity for children] . . . he sent a postcard to the children where he wrote that he thought we could find out a little more about what was beyond the preschool yard. So we made an excursion, and we used the public transports available. This is important, as our children are mostly car-borne. There are a few parents who walk to preschool together with their children, but mostly they go by car. So using the bus is very big and exciting for the children and we made an excursion where we used bus, tram, boat, and walked. And then we got into this about public transports and talked about why it is good to use the public transports. This led to discussion about different fuels, and how to travel in a more sustainable way. [Orange]

The use of communal libraries free of charge was also mentioned as an important resource for the preschools:

We have been to the library several times, and we also get visits to the “library-bus,” a bus filled with books instead of people. We do excursions, look at trees, pick chestnuts and have picnics. Sometimes during these excursions we notice garbage . . . Once we found a bed . . . and a suitcase . . . and the children became very upset about this. They could not understand why someone had left their things in the neighborhood. This experience was turned into a fairy tale, which was developed by us and the children together. [Orange]

The participation in national projects attempting to tie ESD practices together (here: all preschools in Sweden) was also foregrounded, as when teachers vividly described with words and gestures how children participated in garbage-picking days as part of a wider community initiative.

The teachers also put forward the importance of collaborating with other preschools and their teachers:

We have a specific profile at our preschool, based on outdoor life, outdoor education, and experience-based learning. We have a troll as a symbol; it is named Mulle and functions as a unifying factor for the children. Once, we started a thematic work based on Mulle as a troll. We used the story of Bockarna Bruse (the three Billy Goats Gruff) and the troll under the bridge. Most of the children were familiar with the story but they had never taken the troll's perspective. It became very interesting and then we got to examine different versions of the same book . . . this troll, he looks happy in some books and angry in others, *why* is it like that and why is the troll angry and happy? [Orange]

It may be an overstatement that preschool teachers are seen as a homogenous group with similar professional attitudes, but still there were commonalities in the participants' utterances within this project, which became visible by the way they talked about children, child-child relations, and adult-child relations in preschool. The shared and collective resources identified in these relations were a strong impetus for the emerging theme "Expanded perspectives" that became evident at the end of the project. Further, they mentioned participation in children's play as an important resource to support notions of sustainability that may be difficult for children to grasp without adult support:

We had agreed that we would work with the ecological aspect of sustainability and use play as means. We considered that to be the easiest way when working with the youngest children aged 1–3 years old.

One challenge is to organize the economical dimension as content in preschool, we thought we might set up a store. We decided to use the fruits from the garden, such as apples, for props in the play. We were playing together with the children buying, selling, and so on. The children then transformed the play accordingly, suddenly it became a fish shop. One day, Ellen was selling leaves in the shop for two Swedish Kronor, and the money were stones. [Apple]

Economically related aspects as trading goods and services is part of a societal need and knowledge regardless of cultural heritage and has materialized differently during the evolution of humankind. Understanding this in terms of exchange and receiving is an uncomplicated part of children's play and is important for lifelong learning, even so, it is a small step in the process of learning about economics and resource management processes. For a playing-learning child in preschool, this can mean trading a pine with a stone, a flower with a hug, and so on.

The teachers noted that using language as a resource is important, as in conversations with children, to connect past and future generations and discuss what "a good life" might be. This was mentioned with an urge to broaden and develop children's responsibilities and action competencies. For example, by taking the troll's perspective and discuss diverse ways of acting depending

on shifting points of views or taking responsibility of the nearby environment by cleaning the forest and recycling the items found. Competencies were also mentioned in relation to children doing “their own research” about a self-chosen area and then spreading what they have learned to other children at the preschool. Letting children explore and elaborate as a means toward altered knowledge is one way to create competence:

We were using water as a focus for our work at the preschool. One day, some children were sitting by the water hose and you could see that they thought it was awesome that water came pouring out. Others were interested in all the bubbles (because we had poured some detergent into the tub). It was very fun to follow them and see what they liked, what they expressed and how they played together. The goal was to give them so much opportunity to explore water in different ways before we did more teacher-initiated activities. [Orange]

Teachers, independent of which of the four participating preschools where they worked, stressed the importance that the children get support from teachers *and* peers when interacting and collaborating to find competencies in each other. The abovementioned collective societal resources were described as highly contributing to children’s educational processes in terms of social awareness.

The wonders of nature. To spend time in nature and explore, observe, reflect, and learn about ethics related to all living things has habitually triggered young children’s interest. Nature has been a strong aspect of preschool education in the Nordic countries (Sandell & Sörlin, 2008). Most preschool children are outdoors every day, once or twice, regardless of weather conditions. One of the participating settings had snails as pets at their preschool, something which became more common:

The one- and two-year-olds have learned to take care of the snails, to feed them, to observe them and to take care of them in a sensitive manner. Often, when they see snails out in the yard, they go a detour and say “do not step on them” as the older kids sometimes do. By this, we have noticed that they have learned about respect for the living, equal value, and that one should safeguard animals, nature, and the environment. [Apple]

The teachers also highlighted that cherishing, nurturing, and gaining experience of staying in the forest are important skills to develop when immersing children in a sustainable way of being in the world. Weather conditions and different times of the year challenge and nourish children’s play activities. The entrance toward wonder of nature can also be done by the use of literature and various stories; stories may also be one of the foundations for children’s imagination and creativity. Storytelling and books were evident in the teachers’ reflections about nature and sustainability and seemed to function as a window to a global world:

In this group of children there are not so many nationalities represented, so we must work to make diversity visible. We have children from England and Brazil . . . though it depends on how far in generations you go. We have begun to introduce fairy tales from other countries. For example, we have read and discussed the “Puss in the Boots” [Mästerkatten i stövlar] and it is originally from France. [Banana]

The children may, through books, get a glimpse of global issues as children living far away, having other living conditions, and living in different diverse ecological systems. Giving children this awareness rests on teacher’s distinction when selecting, reading, and discussing books with children. The insight in the variation in living conditions and possibilities for a good life is an ethically fragile process; still, this kind of pictures is reaching children through media and Internet. Through the support of skilled and competent teachers, children may be given an arena for discussing these important issues of social sustainability.

When foregrounding their thematic work, the teachers described a number of strategies with links to “the wonders of nature” when focusing on ecology and nature in preschool. They stressed the importance of starting from children’s own questions (and that the adults really are curious about what children are curious about and expand their inquiries). The importance of experiments and explorations was foregrounded and mentioned together with the formulation of hypotheses. Finally, children were given time to play together in spacious places and were free to be amazed and be full of life.

A global world. Much of the phenomena going on in the world is invisible for children if we do not point it out to them by talking about it (Præmaling et al., 2017). Many of the questions about the Sustainable Development Goals (SDG’s) are of this kind, invisible if they are not put on the agenda to observe or reflect about. How would children know about inequality, lack of clean water, or how living conditions in society have changed during the last generations if we do not bring it into their awareness? In addition, international agreements like the United Nations Human Rights (1989) need to be pointed out to children by their parents and through education.

The participating teachers foregrounded the importance of going out of their comfort zone and beyond the everyday ways of working when expanding children’s perceptions of a global world. By the use of digital technology, partner preschools in Australia may be “visited” without traveling, supporting awareness toward careful use of global resource management for the future, even if this has become less used:

A couple of years ago, we used the smart board a lot. There was a gigantic focus on digital media and we got a lot of tools and support. After a few years, and a re-organization within the municipality, this support decreased. The setting that had been in the digital forefront was now put on hold in order to give space to others. The smart board is still used but not as frequently since there is a lack of upgrading and technical

support is needed. The structure and implementation used back then influenced circle time sessions, we travelled the world by the use of Google Maps and searched for animals and places we heard of. We also had storytelling sessions and watched pictures of children playing or doing other activities. [Banana]

Digital technology is also used to broaden children's horizons about plants, animals, and habitats globally. The global world can be explored in books and digital media since children cannot get first-hand experience of everything. Beyond the ecological foundation, which in Sweden is culturally grounded by the tradition of outdoor education and the influences within the Froebel tradition (Pramling Samuelsson et al., 2011), the social and timely aspects of people's vulnerability are important. In times of high immigration rates due to conflicts and war, the Swedish children have become aware of refugees begging for money and food—something which has, until recently, been unusual in Sweden:

We as teachers have talked a lot about the social and cultural diversity. The world and its tragedies are close to children through media and digital tools. Yesterday, the children were playing, and I did not understand, at first, what they were doing. They had cardboards and cotton lace and were writing on the cardboard. After a while I understood that they were playing refugees. I felt that this is something we should build on because the refugees are placed outside the shops, begging for money and the children meet them every day. I read the *Convention on the Rights of the Child* for half the group and my colleague had a circle time session and talked about it. During the circle time the children raised questions such as “Why do they come?” . . . so we talked a little about it and another child expressed that “just because you come to Sweden does not mean that you can stay here . . . then you can be forced to go back to the war.” As teachers, both of us felt that this is the way we want to steer the ship, we need to focus on multicultural and global issues, it was a moment where we felt “aha, this is what we need to focus more on.” [Banana]

This urged the preschool teachers to scrutinize their own perceptions and to use their professional attitudes and competencies to handle children's upcoming play to give voice to empathy. Importantly, they exposed knowledge about taking the other's perspective and put forward their understandings of why the refugees had fled their homeland and found shelter in Sweden. The children gave voice to conflicting arguments about how to act and to address these occurrences. Using the United Nations Human Rights (1989) became one way for the teachers to handle this ethical dilemma with the children.

What we have seen in the first thematic category of how teachers try to make ESD visible to children is in line with Rogoff's (2003) characteristics mentioned earlier. The creation of cultural processes is important. The teachers expressed that they plan their teaching, and interact with children, in a way that makes communication and participation in collective activities possible; they listen and observe and at the same time communicate and interact. The cultural processes here are first understood as the way the teaching is organized, as similar to a Swedish preschool tradition, and second, as the way they make children's collaboration and working in a way where

wonder about phenomena, exploration, and social aspects of life are intertwined. Teachers' talk has a tendency to embrace the larger global questions, but they grapple to do that on a level of understanding that is known to children. They keep not only the content in focus but also the understanding that teaching has to be dialogical (Pramling et al., 2017). The reflections made during the semi-structured interviews provide a sense of their emerging understanding and awareness of the process of noticing one's own practice, that is, they are progressing toward a cognitive meta-understanding about their thematic work with ESD.

Broadened awareness of sustainability, ecology embracing culture, and expanded perspectives

The second set of themes was derived from the teachers' presentations and retrospective reflections on their performed thematic work, which took place 6 months after the semi-structured interviews. When looking back on their performed work at their preschools and simultaneously reflecting on the use of the ESD-SDEC scale, the teachers foregrounded aspects categorized as *broadened awareness, ecology embracing culture, and expanded perspectives*.

Broadened awareness of sustainability. The use of the scale initiated and supported a broadened perspective and understanding of sustainability issues, urging for changing views on materials and the preschool environment. It contributed to discussion, provided support, indicated and opened up toward global perspectives. While the scale was used to create discussions, it also functioned as a frame when operationalizing the work, and thereby broadened the teachers' perspectives:

When we used the scale, it is the economic sustainability that we find most difficult to get with. But at the same time, we have talked a lot that you should turn off the water taps and where the water comes from. We have talked about, for example, when you dry your hands, you do not have to take several paper napkins, one is enough. One should not waste resources. We also talk a lot about the recycling of materials, something which we have worked with for a long time. [Orange]

Regarding the three dimensions of SD, the dimension of nature/ecology seems to have strengthened (and expanded) the work that the teachers have been doing for several years. When thoroughly grounded in nature and explorative work, the ESD aspects of social/cultural and economic sustainability were given space and time for elaboration, even if the work was described as challenging:

We have been thinking about challenges and experiences in regards to the focus of our work with water and sustainability . . . it is a great challenge to bring in economic sustainability. It is also a challenge to have children to raise hypotheses. For example, I had a child in my group who said, "But I don't *know what will happen*," and I answered, "No, you don't have to *know*, I just want to know what you *think*," and then he

started to draw a picture and said to me, "It's not about having the right or wrong, it's about that *I believe something* and then I think maybe like . . . this." This was a challenge for us teachers as well, since we hadn't worked so concrete with hypothesizing before. [Strawberry]

Some teachers foregrounded the advantages of using pictures and children's literature as well as the importance of parental cooperation to develop ideas about sustainability:

Is it really possible for children to understand the lack of water in some countries around the globe? One of our parents had experiences from working in such an environment. We invited him to talk with the preschoolers about it. He brought pictures and tried to connect environmental issues to the scarce access to water . . . in a way that could be accessible to children . . . but still . . . it is really hard to support the children's awareness of these matters. [Strawberry]

The development of changing ideas about how to perform their work at the preschool was evident in the statements from the preschool teachers, and the use of the scale brought in more global thinking:

Regarding the children's increasing awareness of refugees and beggars we had to face a new situation . . . it was also very much . . . we heard the parents' opinions through the children's talk, and of course, everyone is entitled to their opinions, but we felt that we needed to present another angle on the matter. The discussion in media and by children highlighted the idea that perhaps the begging was organized, and that people made money out of it . . . We wanted the children to see the individual person, the one who actually sits there, and to try to understand the sufferings and experiences that the person might have encountered. [Banana]

Global issues and taking the other's perspective was a recurring focus in the teachers' talk about their performed work. They acknowledged the matter but tried to fulfil the Swedish preschool's compensatory assignment. This was expressed as providing facts and a multitude of views on people in vulnerable positions.

Ecology embracing culture. This second sub-theme acknowledges the wealth/value of nature. The Swedish *allemansrätt* (public rights) was said by the teachers to be important to preserve, since it gives all people access to the resources of nature. According to this idea, the continuing development of a culture of outdoors and valuing the forests, lakes, and the wildlife remains possible. It is of importance that this is developed early in life and that children can be supported to take advantage of the natural resources in a sustainable way. Ecology often seems to become the starting point for thematic project work as it nourishes children's curiosity. One preschool described it as follows:

We chose to work with water because children in general are very interested in water and they played a lot with water, and then we realized that we could use that as a theme. One reason was according to children's interest, but we also thought that water is vital for all life on earth. So we tried to embrace a global perspective on water as well. To acknowledge that we, here in Sweden, have very good and clean water.

It's just to open the tap and we have clean drinking water. But what about the rest of the world?
[Strawberry]

By starting with ecology, the study of living things such as plants and animals has made it possible for even the youngest children to flourish in a preschool culture where the teachers are reflective and observant of children's learning and development:

We have noticed that the children have become more observant on the snails, how fast they have eaten, it actually goes *very* fast! They have also learned to take care of the snails. [Apple]

Additionally, one of the preschools [Banana] described that they developed their cultural competence and increased their knowledge about economic aspects of sustainability in terms of elaborating around issues such as alternatives to buying new things:

We have noticed that we have begun to take more advantage of what our nature has to offer as we have creative arts activities with the children. We have been good at that before, but we have thought about it even more since this project started. We use more and more recycling materials. We also became very inspired at our visit to a preschool in Australia. They had large drawers with recycling items so that the children could just go and choose what they wanted. [Banana]

The ERS-SDEC scale contributed to the awareness of the importance to cease depleting nature's resources and, at the same time, awareness of the economical factor intertwined in ecological aspects. One project previously conducted with preschool teachers organized by OMEP was about the 7Rs: respect, reflect, rethink, reuse, reduce, recycle, and redistribute. Such notions can support the teachers to do this journey themselves but can also show them how to apply them to everyday practice with children (see <http://eceresourcebank.org/>).

When starting from the known and embracing the unknown, in terms of social and cultural aspects, the teachers expressed that the children were more included in the learning activities and sustainable transport as taking the bus or walk was discussed and elaborated on, as well as used. Children and teachers receive cultural influences by the use of digital tools, and the establishment of a new culture of cooperation (among staff, the department, and parents) was mentioned. When elaborating a more sustainable pathway, teachers also foregrounded a culture of justice and equal rights and the convention of the rights of the child (United Nations Human Rights, 1989) and became confident in focusing on aspects that they had ignored earlier, such as beggars, poverty, different living conditions, and so on.

Expanded perspectives. Within this final sub-theme, the teachers expressed the notion of expanded perspectives. These perspectives were not only directed to their own work as preschool teachers in a changing society but also in terms of attentiveness to children's altered expressions and actions:

Yes, the children have drawn what they think happens to the water when it goes out into the water supply system . . . and . . . most of them had some kind of pipe, so they understood somehow. It was before they had seen pictures of how it might look in reality. So in a way, all the children had understood that there is some kind of pipe system at least that causes clean water from the sewage treatment plant to the water tap at the preschool. There were some interesting conversations about: What does the water look like? Where is the water? How does water smell? How does water taste? Does everyone have access to water? Is there clean water everywhere, and how do you get clean water? [Strawberry]

At the preschool Orange, the adults described that they felt supported by their educational profile outlined by the organization (www.friluftsfrämjandet.se) in terms of the strong focus on co-discovering, being co-engaged, co-examining, and co-experiencing; still, they felt that routines and the need to be able to adapt the activities to the frameworks and conditions that exist for the preschool organization could be obstacles in developing it further. However, they expressed that interaction and participation within and between the team of teachers with consensus about how to work is essential. They all expressed a clear intention to include and challenge all children in their classrooms. They collectively described that it is important to try to adjust the preschool activities to the children and especially to the specific demands of the youngest children. This is similar to the ideas put forward by the teachers at the preschool Apple. The youngest children's educational encounters in preschool were highly valued, regardless of whether they were learning about snails, apples, or friendship when interacting with teachers and peers.

Teachers at preschool Strawberry viewed children as important citizens with voices and in positions to have an impact on their families' ways of living. The teachers stressed the importance of being curious of children, of their thoughts and knowledge when being in a process of change:

For next term, we have booked a visit to a museum, and we have purchased some literature for the staff. In the new plan, sustainable development has been written very clearly. And important to remember, it is children's awareness, our awareness, which creates the focus of the content in preschool. It is the connection between action and results and a global perspective that we try to get into. The preschool has a role in creating a possible future. In order to develop the work, we plan for activities that increase respect for living and a researching and investigative way of working.

It is important that one is involved in the society you live in, in the world you live and that you can influence it . . . When it comes to highlighting the three dimensions, socially, culturally . . . and . . . yes it is also ecological and economic sustainability . . . It is evident that you want to learn more, want to know more about sustainability and . . . learn new concepts. And cooperate with the home then, that the parents also, when being at home, record and document the children's reflections on our teaching and leave the reflections to us at the preschool. [Strawberry]

Overall, the analyses revealed positive changes in teachers' ways of talking about their professional role and the role of issues related to ESD in ECE. For example, they mentioned an

increased focus on sustainability, which with the support of researchers and the ESD-SDEC scale led to broadened awareness of systematic quality work.

Discussion

Education is one of the main focus areas for securing lifelong learning in society. There are a number of key competences foregrounded by the European Union (EUR-Lex, 2006) highlighting social and civic competence. This includes participation in social life and the development of skills, creating good conditions for democratic participation in diverse societies. In a critical analysis of the concept of involvement, Kjørholt and Winger (2013) asked the question of how strong a focus on an individual child's right should be at the expense of cohabitation and other cultural values. They placed emphasis on a holistic and relational perspective, in which the right to care and protection is included (Kjørholt and Winger, 2013) and similar points are foregrounded by Davis (2014).

Moving from teaching tools toward a think tool

In general, one can say that it is not physical teaching tools that teachers needed and were asked for in the study by Park and Pramling Samuelsson (2016), but a *think tool*, like the rating scale, that helps teachers see their own everyday practice. This tool seems to have contributed to reflection on, and review of, the teachers' existing practice and given strength to reformulate their thoughts of what the preschool practice could look like in the context of education for a sustainable world. The scale supported the teachers in recognizing materials as well as physical and psychological environments. These teachers have developed a competence to meet the demands of including ESD in daily work stated in the revised Swedish curriculum for preschools (National Agency for Preschool Education, 2019). The children's changed positions within the activities, their collective talk about issues related to ESD such as transportation and diverse cultures, led to a renewed culture of cooperation (among staff, the department, and parents) and are here understood as an emerging result by the use of the scale. When elaborating a more sustainable pathway, teachers also foregrounded a culture of justice and equal rights and the *Convention of the Rights of the Child* (United Nations Human Rights, 1989). The teachers became confident in focusing on aspects that they had ignored earlier, such as beggars, poverty, different living conditions, and facing what can be considered as complex ethical dilemmas about life and death, equality, and equity.

It is apparent that the teachers have expanded their views from appreciating and exploring nature to seeing nature in a larger perspective and not the least daring to consider the economy in their teaching, something that research has shown to be the most difficult part for teachers (Siraj-Blatchford et al., 2016). We can also see how the global perspective provides a broadened

perspective in relation to thematic work in a digital world. This is similar to a study by Ärlemalm-Hagsér and Larsson (in press), in which digital tools are highlighted as important for concretizing a global perspective through, for example, different species of fruit depending on temperature zones and access to water as well as acknowledging people's diverse living conditions in relation to such factors.

The aim of this research was to generate knowledge about teachers' professional understandings of ESD. With the support of a rating scale and previously unknown colleagues and researchers as collective resources and communicative partners, the preschool teachers grappled to develop global citizenship. From a research perspective, this is an interesting result, showing that in-service and communicative support, along with reflection within the team of teachers, has important impacts on educational practices with young children.

Togetherness headed for a changeable future

According to the report "Preparing Teachers for Global Citizenship Education: A Template," the complexity of issues related to ESD are intrinsically linked to Global Citizen Education (GCED):

No person or country can solve these problems alone in a fast-globalizing world. Technological advances have intensified and revealed the interconnections between and among people. Actions undertaken in some part of the planet can affect the well-being and prosperity of millions in other parts. That is why the pursuit of sustainable peace and development requires solidarity, empathy, tolerance, acceptance and a sense of belonging to common humanity—all of which are core elements of GCED. (United Nations Educational, Scientific and Cultural Organization [UNESCO], 2018, p. v)

The key messages of the UNESCO (2018) report are that it is about dialogues and not about impositions of one's views or ideas on others; it is about learning together, with a student-centered perspective. The focus is on a transformative education and GCED is to be understood as multi-disciplinary and can be integrated into existing curricula and subject areas. All of the core elements above are also elements in the Swedish curriculum (National Agency for Preschool Education, 2019). It is, however, important to point out that when the present study that is the basis of this article took place, the content and wording of the 2019 Swedish curriculum was unknown. Within this study, the teachers' views in terms of shared and collective resources foreground that no individual can solve sustainability-related issues by themselves. With joint efforts on the level of what is appropriate for young children, teachers point out and make visible the meaning of these two categories, ESD and GCED, to children. To support children to view themselves in alignment with the global world can become one way for children to meet the global in the local, get to know, and take the perspective of people from other cultures, and so on. Teachers can also make visible to children that they have rights and responsibilities beyond their own immediate environments.

Global citizenship education is one of several content areas in SDG goal 4.7, but it could also be turned the other way around with global citizenship seen as overriding. For example, if children start their education toward becoming global citizens, then their education must include all the other aspects pointed out in this goal for content in ESD. Regardless, children begin their learning toward the collective, individual, global, and local in ECE. According to Pramling Samuelsson and Kaga (2010),

Early childhood education can help build a culture of sustainability if it is framed in terms of sustainable development, if curriculum and pedagogical guidelines are oriented toward education for sustainability, if staff training in this field is reinforced, and if parents and communities are involved in the process. (p. 59)

Toward an integrated view of ESD and GCED

The category of wonders of nature emerging from the teachers' talk in this study is related to a traditional way of relating to nature in Sweden—and probably in many other countries. Learning about nature and experiencing fascination of animals, flowers, water, ice, and the constantly changing sky is an important educational focus. Here, the teachers went beyond the situated and historical experiences and broadened them, for example, within the theme “Ecology embracing culture,” and at the end of the project, the three dimensions of ESD were close to being integrated in their work. The teachers' reflections highlighted the importance of reflective question so children have the possibility to become more active. Further, if children have support and collective ownership of their educational encounters in preschool, their awareness of sustainability may increase. The inclusive, reflective positions taken by the teachers participating in the project give an indication that this is the case. This is evident when teachers talked about how they disposed their educational and organizational resources to educate children for the future. In line with a sociocultural perspective, the themes derived from the teachers' talk are interwoven into the reflection on their work and the notions highlighted in the scale.

The children were supported in different ways by teachers with developed understandings of how preschool practice can work with ESD in a more advanced way. To increase awareness of the surrounding world, three main categories in which we have described the teachers' views were expressed in the interviews at preschools as a result of the analyses: (a) collective resources, (b) the wonder of nature, and (c) the global world. These three perspectives can be related to Rogoff (2003):

From the perspective that development occurs in *participation* in shared socio-cultural activities, it is clear that children play active central roles, along with their elders and other companions, in learning and extending the ways of their communities. (p. 285, italics in original)

For a long time, ESD and GCED have been separate sections at UNESCO, but step by step, these sections have come closer to each other. UNESCO's Global Action Program this year (2018) will be the first integrated forum within the thematic focus: "Learning and Teaching for Peaceful and Sustainable Societies: From Early Childhood to Primary and Secondary Education." Thus, for the first time in this process all levels of the education system with integration between ESD and GCED will become a reality.

When we look at what teachers have learned from being part of the in-service training described here, we can see that the ERS-SDEC scale supported them to reflect and change their own practice and see their everyday activities in a new light toward ESD for young children. Thereby, the possibilities to increase the quality of their work in regard to sustainability increased, as well as children's opportunities to develop competencies to preserve biological and cultural diversity. When involving ESD and GCED in their systematic quality work and making dialogues central in preschool pedagogy, learning is not so much an individual task but going on in interaction and collaboration between children and between teachers and children, during play and in educative sessions. Maybe the most important point is how children's positions were changed and how the teachers became more focused on children's perspectives. Child-centeredness is necessary for being able to see the children's perspectives (Sommer et al., 2010).

To conclude, the notion of transformative education is as central in ESD as in GCED, in that learning has to be transformed into action, which the teachers in this study have undertaken in their everyday work with children. That is, the teachers have reviewed their existing practice, reformulated the operationalization of the curriculum, and reorganized their professional attitudes by the use of the collective resources provided within the research project as a collaborative practice.

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Notes

1. Greta Thunberg, https://en.wikipedia.org/wiki/Greta_Thunberg
2. When we refer to the four preschools, the pseudonyms Orange, Banana, Apple, and Strawberry are used.

References

- Ärlemalm-Hagsér, E., & Larsson, J. (in press). Mellan det globala och lokala— förskolläroarstudenters meningsskapande om undervisning för hållbarhet i förskolan. [Between the global and local—preschool teacher students' meaning making about teaching for sustainability in preschool] [in Swedish]. *NorDiNa*.
- Ärlemalm-Hagsér, E., & Sundberg, B. (2016). Naturmöten och källsortering: En kvantitativ studie om lärande för hållbar utveckling i förskolan [Nature and recycling: A quantitative study on learning for sustainable development in preschool] [in Swedish]. *NorDiNa*, 12, 140–156.
- Bascopé, M., Perasso, P., & Reiss, K. (2019). Systematic review of education for sustainable development at an early stage: Cornerstones and pedagogical approaches for teacher professional development. *Sustainability*, 11, 719.
- Björneloo, I. (2007). *Innebörder av hållbar utveckling: En studie av lärares utsagor om undervisning* [meaning of sustainable development: A study of teachers' statements on their education] [in Swedish]. Göteborg, Sweden: Acta Universitatis Gothoburgensis.
- Borg, F., Winberg, M., & Vinterek, M. (2017). Children's learning for a sustainable society: Influences from home and preschool. *Education Inquiry*, 8, 151–172.
- Davis, J. (2014). Examining early childhood education through the lens of education for sustainability. In J. Davis & S. Elliott (Eds.), *Research in early childhood education for sustainability: International perspectives and provocations*. London, England: Routledge.
- EUR-Lex. (2006). Lifelong learning: Key competences. Retrieved from <https://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=LEGISSUM:c11090&from=SV>
- Graneheim, U. H., & Lundman, B. (2004). Qualitative content analysis in nursing research: Concepts, procedures and measures to achieve trustworthiness. *Nurse Education Today*, 24, 105–112.
- Harms, T., Clifford, R. M., & Cryer, D. (1998). *Early childhood environment rating scale (ECERS-r)* [revised ed.]. New York, NY: The Teachers College Press.
- Hedefalk, M. (2014). *Förskola för hållbar utveckling: Förutsättningar för barns utveckling avhandlingskompetens för hållbar utveckling* [preschool for sustainable development: Prerequisites for children's development of action competence for sustainable development] [in Swedish]. *Digital Comprehensive Summaries of Uppsala Dissertations from the Faculty of Educational Sciences* 3. Uppsala, Sweden: Acta Universitatis Upsaliensis.
- Hedefalk, M., Almqvist, J., & Östman, L. (2015). Education for sustainable development in early childhood education: A review of the research literature. *Environmental Education Research*, 21, 975–990.
- Kjørholt, A. T., & Winger, N. (2013). Barndom og rettingheter under lupen: Individualisering, verdighet og menneskeverd [Investigating childhood and rights: Individualisation, dignity and human worth]. In A. Greve, S. Mørreaunet, & N. Winger (Eds.), *Ytringer: Likeverd, demokrati of relasjonbygging I barnehagen* [Expressions: Equality, Democracy and Relations] [in Norwegian] (pp. 75–89). Oslo, Norway: Fagbokforlaget.
- Kultti, A., Larsson, J., Ärlemalm-Hagsér, E., & Pramling Samuelsson, I. (2016). Early childhood education for sustainable development in Sweden. In J. Siraj-Blatchford, C. Mogharreban, & E. Park (Eds.), *International research on education for sustainable development in early childhood* (pp. 123–137). Basel, Switzerland: Springer. <https://doi.org/10.1007/978-3-319-42208-4>

- Lasen, M., Skamp, K., & Simoncini, K. (2017). Teacher perceptions and self-reported practices of education for sustainability in the early years of primary school: An Australian case study. *International Journal of Early Childhood, 49*, 391–410.
- Ministry of Education and Sciences. (1998). *National curriculum for preschool, Lpfö98*. Stockholm, Sweden: Fritzes.
- National Agency for Preschool Education. (2019). *Curriculum for the preschool, Lpfö18*. Retrieved from <https://www.skolverket.se/publikationer?id=4049>
- Park, E., & Pramling Samuelsson, I. (2016, July). *A study of Swedish and Korean early childhood teachers' perception and attitude on education for sustainability*. Paper presented at the OMEP World Conference, Seoul, South Korea.
- Pramling Samuelsson, I., & Kaga, (2010). Early childhood education to transform cultures for sustainability. In Worldwatch Institute (Ed.), *State of the world: Transforming cultures: From consumerism to sustainability*. (pp. 57–61). Retrieved from <http://www.worldwatch.org/files/pdf/Education.pdf>
- Pramling Samuelsson, I., Kultti, A., & Pramling, N. (2018). Epilogue: Conceptualizing early childhood education and care for a global community: New directions in policy initiatives. In J. L. Roopnarine, J. E. Johnson, S. F. Quinn, & M. M. Patte (Eds.), *Handbook of international perspectives on early childhood education* (pp. 423–429). New York, NY: Routledge.
- Pramling Samuelsson, I., & Pramling, N. (2013). Orchestrating and studying children's and teachers' learning: Reflections on developmental research approaches. *Education Inquiry, 4*, 519–536. <https://doi.org/10.3402/edui.v4i3.22624>
- Pramling, N., Doverborg, E., & Pramling Samuelsson, I. (2017). Re-metaphorizing teaching and learning in early childhood education beyond the instruction—social fostering divide. In C. Ringsmose & G. Kragh-Müller (Eds.), *Nordic social pedagogical approach to early years: International perspectives on early childhood education and development, 15* (pp. 205–218). Basel, Switzerland: Springer. https://doi.org/10.1007/978-3-319-42557-3_12
- Pramling Samuelsson, I., Sommer, D., & Hundeide, K. (2011). *Barnperspektiv och barnens perspektiv i teori och praktik*. [Child perspective and children's perspective in theory and practice] [in Swedish]. Stockholm, Sweden: Liber.
- Robson, C. (2002). *Real world research*. (2nd ed.). Oxford, England: Blackwell.
- Rogoff, B. (2003). *The cultural nature of human development*. New York, NY: Oxford University Press.
- Rönnerman, K. (2011). *Aktionsforskning! Kunskapsproduktion i praktiken*. In *Forskning om undervisning och lärande, 5. Lärare som praktiker och forskare. Om praxisnära forskningsmodeller, 7(17)*. [Action research! Knowledge production in practice. In *Research on teaching and learning, 5. Teachers as practitioners and researchers. About practice-oriented research models, 7(17)*.] [in Swedish] Stiftelsen SAF och Läraförbundet.
- Sandell, K., & Sörlin, S. (2008). *Friluftshistoria—från 'hårdande friluftsliv' till ekoturism och miljöpedagogik: Teman i det svenska friluftslivets historia*. [From outdoor life to ecotourism and environmental education: Themes in the history of Swedish outdoor life] [in Swedish]. Carlens.
- Siraj-Blatchford, J., Mogharreban, C., & Park, E. (Eds.). (2016). *International research on education for sustainable development in early years*. Dordrecht, Holland: Springer. (15 s.).

- Sommer, D., Pramling Samuelsson, I., & Hundeide, K. (Eds.). (2010). *Child perspectives and children's perspectives in theory and practice*. Dordrecht, The Netherlands: Springer.
- United Nations Educational, Scientific and Cultural Organization. (2018). *Preparing teachers for global citizenship education: A template*. Report from Bangkok Office. Asia and Pacific Bureau for Education. United Nations Educational, Science and Cultural Organisation, Paris France. Retrieved from <https://unesdoc.unesco.org/ark:/48223/pf0000265452>
- United Nations Human Rights. (1989). *Convention on the rights of the child*. Retrieved from <https://www.ohchr.org/en/professionalinterest/pages/crc.aspx>

Digital resources

- Friluftsförbundet: <https://www.friluftsförbundet.se/in-english/>
- Global Sustainable Goals: www.un.org/sustainabledevelopment/education/
- Swedish government: <https://www.government.se/articles/2015/02/convention-on-the-rights-of-the-child-about-to-become-swedish-law/>
- World OMEP: http://eceresourcebank.org/index.php?hCode=SCALE_03_01